

DOCTOR OF PHILOSOPHY

Selling surplus food as a solution to food waste

understanding how businesses selling surplus food commercially can be adopted by consumers and reduce food waste

Ruetgers, Lisa

Award date:
2020

Awarding institution:
Coventry University

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of this thesis for personal non-commercial research or study
- This thesis cannot be reproduced or quoted extensively from without first obtaining permission from the copyright holder(s)
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

**Selling surplus food as a solution to
food waste: Understanding how
businesses selling surplus food
commercially can be adopted by
consumers and reduce food waste**

By

Lisa Ruetgers

PhD

February 2020



**Selling surplus food as a solution to
food waste: Understanding how
businesses selling surplus food
commercially can be adopted by
consumers and reduce food waste**

By

Lisa Ruetgers

February 2020



***A thesis submitted in partial fulfilment of the University's
requirements for the Degree of Doctor of Philosophy***



Certificate of Ethical Approval

Applicant:

Lisa Ruetgers

Project Title:

Selling Surplus Food 2

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their project has been confirmed and approved as Medium Risk

Date of approval:

11 July 2017

Project Reference Number:

P60298

Abstract

Globally, considerable amounts of edible food (surplus food) are wasted while at the same time the world faces issues such as resource depletion, climate change and food poverty. Wasting food means wasting resources, including water, land and energy, and creates pollution. In developed countries, most food waste happens at the end of the supply chain at food service businesses, retailers and households. This study investigated businesses selling surplus food from retailers and restaurants commercially to consumers as potential solutions to food waste. These business models are based on the circular economy, which encourages the treatment of waste as a resource, and thus fosters sustainable development via degrowth, a reduction in resource consumption.

While scholars have explored the charitable and non-commercial redistribution of surplus food, the commercial sale of unprocessed surplus food remained under-investigated, despite its potential to reduce food waste, resource consumption and food poverty. The aim of this research was to understand how businesses selling surplus food commercially to consumers can be adopted and reduce food waste. To investigate this real world phenomenon, case study research has been conducted with three cases representing two different business models in two countries each. One such business model is represented by surplus supermarkets in the UK and Denmark that acquire surplus food from retailers and food producers and sell it cheaply to consumers. The second business model is an app, also operating in the UK and Denmark, enabling restaurants, cafés and bakeries to sell their surplus food to consumers at the end of their service. Using the theory of diffusion of innovation as theoretical framework and a phenomenological approach, factors affecting the adoption of the case businesses were determined based on the perceptions of consumers and business representatives.

This research contributes to knowledge by developing the surplus food sale theory which outlines the factors influencing the, so far under-investigated, commercial sale of surplus food and its capability to reduce food waste. Consumers' perceptions of unprocessed surplus food and the businesses selling it, the contextual factors affecting those perceptions and the factors influencing the development of the case businesses have been revealed. Consumers' social circumstances influence their engagement with the case businesses, which need to provide an attractive product range and atmosphere to acquire customers. The case businesses reduce food waste and support degrowth, as most surplus food was sold, consumed and substituted purchases of regular products to some extent. Marketers

and policy makers can use these new insights to enhance the sale of surplus food and the reduction of food waste and resource consumption.

Furthermore, this study shows that surplus food has a market value with price and convenience being the main drivers for consumers to buy surplus food. Therefore, surplus food should not be considered as waste and non-saleable by manufacturers, retailers and restaurants. Those industries should apply the knowledge provided by this study to sell their surplus food. The theory of diffusion of innovation, in particular in combination with perceptual phenomenology, proved to be a useful tool to understand potential solutions to food waste while its application in food waste research represents a novelty.

Acknowledgements

First, I want to thank Coventry University, and the Centre for Business in Society in particular, to enable me to conduct this PhD. Thanks to the university providing funding for research into sustainability, I could undertake this PhD. Without the studentship I would not have been able to experience this wonderful PhD journey, which included the attendance of several interesting conferences. Moreover, I want to thank the university for the extensive offer of interesting seminars, workshops and clusters I used to learn and to engage with other researchers. Furthermore, I am thanking several employees of Coventry University who were always there to help with problems, inquiries and provided great feedback during all my PRPs, such as Helen Rowe, Kate Pope and Dr Adrian Evans.

Secondly, I would particularly like to thank my outstanding supervisory team: Prof Marylyn Carrigan, Prof Maureen Meadows, Dr Elizabeth Bos and Dr Jordon Lazell. I had a great time doing the PhD, from the first to the last day, which I owe to my supervisory team. From my first Skype call with Prof Marylyn Carrigan discussing the PhD position through to the very last day, I received prompt and helpful advice and constant support. Anything a PhD student could wish for, I received. My team guided me in an organised, cooperative and friendly way and showed understanding and support throughout. I improved my skills as researcher thanks to my supervisors. Our meetings were always inspiring and useful, while I also received prompt feedback to questions I posed via email. The PhD journey was a great experience – thank you, Marylyn, Maureen, Lizzie and Jordon!

Thirdly, I am thanking my family, friends and colleagues who were always there for me and supported me throughout. They updated me with news in the field, listened to my new insights, discussed my research with me and provided useful advice, helped me to test research questions, provided feedback on my chapters and motivated me to keep working hard. Moreover, they continued to love me despite my frequent recommendations on how they could (and should) reduce their food waste further. Even more, they reduced their food waste with some of them being inspiring role models.

Being a PhD student was the best position I ever experienced and I truly enjoyed the last three and a half years. Thanks a lot to all of you!

Contents

Abstract	i
Acknowledgements.....	iii
Contents	iv
List of figures	ix
List of tables	x
List of abbreviations.....	xi
Chapter 1: Food waste: scope, causes and potential solutions.....	1
1.1 Introduction.....	2
1.2 Food waste – a global issue.....	3
1.3 Food waste in Europe	6
1.3.1 Overview: Food waste in the supply chain	6
1.3.2 Food waste in households, retail and hospitality.....	10
1.3.3 Current handling of surplus food.....	16
1.4 Thesis structure	22
1.5 Summary	26
Chapter 2: Consumers and concepts for food waste reduction.....	27
2.1 Introduction.....	28
2.2 Concepts to reduce and re-use food waste	29
2.2.1 Regulation, legislation and the circular economy	29
2.2.2 Degrowth to counteract overconsumption.....	32
2.2.3 Redistribution of surplus food	36
2.2.4 The different aspects of commercial businesses selling surplus food	42
2.3 The complexity of consumer behaviour	45
2.4 Gaps in knowledge	51
2.5 Theory of diffusion of innovation as inspiration for the theoretical framework.....	52
2.5.1 Diffusion of innovations explained by the theory of diffusion of innovation	52

2.5.2 Application of the theory of diffusion of innovation to investigate businesses selling surplus food.....	56
2.6 Summary	59
Chapter 3: Research approach to examine consumers' adoption of businesses selling surplus food.....	60
3.1 Introduction	61
3.2 Philosophical considerations: Using phenomenology to acknowledge individual perceptions as realities	62
3.3 Case study research as methodology	65
3.4 Assuring research quality	69
3.5 Summary	71
Chapter 4: Investigating the commercial sale of surplus food.....	73
4.1 Introduction	74
4.2 Case identification and background	75
4.3 Methods for data collection	83
4.4 The data collection process	89
4.4.1 Preparation of data collection	89
4.4.2 Too Good To Go.....	90
4.4.3 Wefood and Niftie's	95
4.4.4 Interviews, observations, reflective notes and ethical guidelines.....	99
4.4.5 Determining the end of the data collection process.....	105
4.5 Data analysis via thematic analysis.....	109
4.6 Limitations.....	120
4.7 Reflection on my experience	123
4.7.1 Reflections on positionality	123
4.7.2 Development as a researcher.....	125
4.8 Summary	129

Chapter 5: Factors driving the commercial sale of surplus food and food waste reduction	130
5.1 Introduction	131
5.2 Why do consumers choose to engage with the case businesses or not?	132
5.2.1 Overview: How social circumstances affect consumer engagement with the case businesses	132
5.2.2 Attitudes and perceptions of surplus food	132
5.2.3 Lifestyle and convenience	136
5.2.4 Price	139
5.2.5 Self-identity	142
5.2.6 Social network	144
5.2.7 National comparison	145
5.2.8 Summary of Findings Section 5.2	147
5.3 What challenges are the case businesses facing in selling surplus food?	148
5.3.1 Overview: Challenges in selling surplus food	148
5.3.2 Product range and consumer experience	149
5.3.3 Atmosphere	153
5.3.4 Familiarity and differences	156
5.3.5 Summary of Findings Section 5.3	162
5.4 What successes are the case businesses achieving?	163
5.4.1 Overview: Surplus food is sold and consumed	163
5.4.2 Surplus food is sold via Too Good To Go	163
5.4.3 Surplus food is sold by Wefood and Niftie's	168
5.4.4 The consumption of surplus food reduces food waste and supports degrowth ...	170
5.4.5 Summary of Findings Section 5.4	173
5.5 How can the case businesses become long-term solutions to food waste?	174
5.5.1 Overview: Funding is the essence of sustainable business development	174
5.5.2 Surplus supermarket funding needs	175
5.5.2.1 Niftie's development - lack of funding	179
5.5.2.2 Wefood's development – funding available	182

5.5.3 Too Good To Go – funding enables growth	187
5.5.4 Summary of Findings Section 5.5	190
5.6 Framework: Factors affecting the sale of surplus food	191
5.7 Summary	195
Chapter 6: Conceptualising the sale of surplus food as a means to reduce food waste and to support degrowth.....	197
6.1 Introduction	198
6.2 Development of the surplus food sale theory	200
6.3 Understanding the adoption or rejection of businesses selling surplus food commercially	207
6.3.1 Factors affecting the adoption of the case businesses.....	207
6.3.2 Factors affecting the adoption of the surplus supermarkets – Wefood and Niftie’s	211
6.3.3 Factors affecting the adoption of the surplus food app – Too Good To Go	218
6.4 The reduction of food waste via the sale of surplus food	222
6.4.1 The case businesses achieved the reduction of food waste and supported degrowth	222
6.4.2 Surplus food has a market value	224
6.5 Summary	227
Chapter 7: New knowledge on the sale of surplus food	229
7.1 Introduction	230
7.2 Overview of the thesis.....	231
7.3 Key contributions of the study	235
7.4 Recommendations for businesses selling surplus food commercially to consumers	237
7.5 Limitations and further research.....	242
7.6 Summary	244
List of references.....	245

Appendices	268
Appendix Chapter 4	269
A) Interview questions	269
B) Use of pictures in interviews	280
C) Observation Guide.....	283
D) Participants.....	285
E) Code structure	292
Appendix Chapter 5	310
A) Sales records Wefood.....	310
Personal development: Overview of participation at conferences, seminars, workshops and events during the PhD	312
Former Certificate of Ethical Approval.....	315

List of figures

Figure 1.1:	Food waste along the food supply chain.....	6
Figure 1.2:	Food waste by sector in the EU, 2012.....	8
Figure 1.3:	Food waste by sector in the UK, 2015.....	9
Figure 1.4:	Food Waste Hierarchy.....	19
Figure 1.5:	Thesis structure.....	25
Figure 2.1:	Gaps in knowledge.....	51
Figure 3.1:	Case study research combining perceptual phenomenology and TODOI.....	68
Figure 4.1:	Map of the UK focussed on England.....	81
Figure 4.2:	Map of Denmark.....	82
Figure 4.3:	TGTG map examples of Birmingham (left) and Copenhagen (right).....	93
Figure 4.4:	Shop windows of Niftie's (top) and Wefood Amager (bottom), 2017.....	95
Figure 4.5:	Data collection process.....	108
Figure 4.6:	Coding structure early analysis stage.....	111
Figure 4.7:	Model of all codes.....	115
Figure 4.8:	Thematic map.....	116
Figure 5.1:	Wefood Nørrebro, old layout.....	158
Figure 5.2:	Wefood Nørrebro, new layout.....	159
Figure 5.3:	Wefood Amager, old layout.....	159
Figure 5.4:	Wefood Amager, new layout.....	160
Figure 5.5:	Niftie's store.....	160
Figure 5.6:	TGTG restaurant Eat, customers filling their boxes.....	161
Figure 5.7:	Supply chain TGTG.....	167
Figure 5.8:	Supply chain Niftie's and Wefood.....	169
Figure 5.9:	Lack of storage.....	176
Figure 5.10:	The impact of funding on the surplus supermarket business model.....	178
Figure 5.11:	The impact of funding on TGTG's business model.....	189
Figure 5.12:	Factors affecting the sale of surplus food and food waste reduction from different perspectives.....	194
Figure 6.1:	Conceptual framework: Adoption of businesses selling surplus food (surplus food sale theory).....	203
Appendices		
Figure A1	Perfect vs imperfect items.....	281
Figure A2	Different types of peppers.....	281
Figure A3	Shopping trolleys with different types of the same products.....	282

List of tables

Table 1.1:	Overview of causes for food waste at the end of the supply chain.....	16
Table 3.1:	The research approach.....	72
Table 4.1:	Case overview, 2017.....	79
Table 4.2:	Overview of the methods for data collection.....	88
Table 4.3:	Overview of interviews for the case TGTG.....	94
Table 4.4:	Overview of interviews for the case Wefood.....	98
Table 4.5:	Overview of interviews for the case Niftie's.....	99
Table 4.6:	Overview of interviews per case.....	101
Table 4.7:	Group interview overview.....	104
Table 4.8:	Examples of recurring answers indicating saturation.....	106
Table 4.9:	Weighting of codes.....	113
Table 4.10:	Axial codes of the open code 'Price'.....	114
Table 4.11:	Overview of themes.....	117
Table 4.12:	The researcher's personality.....	124
Table 5.1:	Products at Wefood and Niftie's.....	151
Table 5.2:	Research questions and themes.....	192
Table 6.1	Recommendations for the case businesses.....	238
 Appendices		
Table A1:	Interview guide consumers and customers.....	270
Table A2:	Interview guidebusiness representatives.....	274
Table A3:	Overview of participants.....	286
Table A4:	Final code structure.....	293
Table A5:	Sales records Wefood.....	311

List of abbreviations

BSE	Bovine spongiform encephalopathy
CEOs	Chief executive officers
CO ₂	Carbon dioxide
CODB	Cost of doing business
CSR	Corporate social responsibility
DC	Danish charity
DEFRA	Department for Environment, Food and Rural Affairs
EC	European Commission
E-coli	Escherichia coli
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
g	Grams
GDP	Gross domestic product
GHGe	Greenhouse gas emissions
kcal	Kilocalories
km ³	Cubic kilometre
PSS	Product-service systems
RQ	Research questions
SCORAI	Sustainable Consumption and Research Action Initiative
SFST	Surplus food sale theory
t	Tonne
TGTG	Too Good To Go
TODOI	Theory of diffusion of innovation
UK	United Kingdom
USA	United States of America
WRAP	The Waste and Resources Action Programme
Appendices	
biz / biz rep	Business representative
C (W / N / T)	Customer (Wefood / Niftie's / TGTG)
NC	Consumer
ua	unassigned

Chapter 1: Food waste: scope, causes and potential solutions

1.1 Introduction

This chapter outlines the context of the research and explains why researching businesses selling surplus food to consumers is important. Food waste is a global issue with a strong negative impact on the environment and society. This research focusses on food waste at the end of the supply chain, as the majority of the food wasted by supermarkets, restaurants and households is edible food that could be consumed if it was not wasted (surplus food). Europe is one of the regions with the highest food waste levels at these supply chain stages (along with North America), while the UK creates the most food waste of any European country, and Denmark's food waste levels are average for a European country. This study investigates a potential solution to food waste in the UK and Denmark.

To examine a potential solution, the problem needs to be understood first. Therefore, this chapter describes the reasons for food being wasted by households, retail and hospitality. Thereafter, the current handling of food waste and surplus food is outlined. The majority of surplus food is sent to landfill, while the best alternative is redistributing the surplus food for human consumption. Pioneering businesses follow this approach and sell surplus food commercially to consumers. This thesis is the first to investigate businesses selling surplus food commercially to consumers as potential solutions to food waste. The research question, the resulting research objectives, the research and the thesis structure are described and illustrated in Section 1.4. A summary concludes this chapter.

1.2 Food waste – a global issue

This section outlines the negative environmental and social consequences of wasting food. Food waste makes a significant negative contribution to the challenge of global sustainability, as evidenced by the following calculations provided by the Food and Agriculture Organization of the United Nations (FAO) (2013). Food waste is defined as ‘the masses of food lost or wasted in the part of food chains leading to “edible products going to human consumption”’ (FAO 2011: 2). According to estimates by the FAO ‘one third of all food produced for human consumption in the world is lost or wasted’ (FAO 2013: 6). That amount correlates to discarding agricultural products of \$750 billion (based on producer prices) and equals the gross domestic product (GDP) of Switzerland (FAO 2013). The carbon footprint of this wasted food is equivalent to 3.3 giga tonnes (t) of carbon dioxide (CO₂), including direct emissions covering the life cycle from production to consumption and disposal. In a global comparison, food wastage is the third largest carbon emitter after China and the United States of America (USA) and creates a blue water footprint (use of surface and groundwater) three times the volume of Lake Geneva (250 cubic kilometre (km³)) (Water Footprint Network 2009). The land used to produce the food that is wasted represents 30% of the global agricultural space (FAO 2013). When land change such as deforestation to create farmland is considered, numbers for greenhouse gas emissions (GHGe) related to agricultural food production rise considerably, for instance 15 to 300 times for products like soymeal (Stuart 2009). All this evidence is indicative of the scale of the food waste problem.

Reducing food wastage could save resources, reduce pollution and increase food security, for example, by feeding 12.5% of the world’s malnourished people (FAO, IFAD, and WFP 2012; FAO 2013; Chalak et al. 2016). The United Nations World Food Programme claims that ‘the total surplus of the US alone could satisfy “every empty stomach” in Africa’ (Segrè and Gaiani 2012: 19). This calculation does not consider land use change, meaning growing crops with high nutritional value that need low energy input instead of growing the food that is wasted. Stuart (2009) illustrates the impact land use change could create with the following example: One tonne of tomatoes provides 17,000 kilocalories (kcal) while using a primary energy input of 31 million kcal to grow. Wheat has a much higher input-to-output ratio with one tonne of bread-wheat having a calorific content of at least 3 million kcal and requiring 600,000 kcal for cultivation while using less fresh water and emitting less GHGe. If the land that is used to grow 50% of the avoidable potato waste (not including peelings or rotten parts) created by UK households was used for wheat production, 1.2 million malnourished people could be fed. These numbers show the opportunity costs of growing

food according to the taste of First World consumers and wasting it as opposed to using the resources to efficiently grow nutriment to fight malnourishment.

The food production that is needed to feed the expected population in 2050 could be reduced by 60% if the wasted food was used instead for consumption (FAO 2013). Stuart (2009) outlines the negative impacts the rise of demand in agricultural commodities has created so far: With the growth of wealth in developed countries, more land is needed in order to grow the produce to meet demand, and for the purpose of creating farmland ecologically valuable areas such as wetlands and rainforests are destroyed. Wealthy countries buy or lease land from developing countries in order to grow the requested food, often causing deprivation, exploitation and environmental degradation (Matondi, Havnevik, and Beyene 2011). Considering the reduction of food production that could be achieved by consuming and not wasting edible food, the issues related to the growing food production could be alleviated by consuming edible food destined for waste (FAO 2013).

Stuart (2009) also discusses the history of food waste, which refers back to the time when humans were still hunters and gatherers facing big herds of prey animals. After having killed a big prey, ancient hunters left most of the edible meat to rot instead of carrying and preserving it, as it might have been easier to hunt again when needed. This unsustainable use of large animals, and presumably climate change, caused mass extinction of these species and led to the development of agriculture. Stuart (2009) reflects on this as a caution for current production-consumption patterns, and concludes that humans seem to struggle to consume in a sustainable way when faced with apparent abundance. Regarding today's society, this conclusion is proving to be true. In developed countries food seems to exist in abundance, demonstrated by full supermarket shelves, widespread advertising and numerous restaurants (Stenmarck et al. 2011; Pirani and Arafat 2014; Carrington, Zwick, and Neville 2015).

Ignoring the social and environmental degradation this opulence causes, wealthy nations over-consume and waste food (Segrè and Gaiani 2012). In 2008, 8.3 million hectares of land were deforested for agricultural production in Brazil, while seven times this area was needed just to produce the amount of meat and dairy wasted by UK households and US consumers, retailers and the food service industry (Stuart 2009). Annually, 9.7 million hectares are deforested worldwide for food production (74% of total deforestation), while in 2007 nearly 1.4 billion hectares of land were used to produce food that was not consumed (Canada and India together have less surface) (FAO 2013). Overconsumption is causing consumers to even 'waste' their own health; two thirds of all Americans are overweight with

50% of those being obese (Stuart 2009; Segrè and Gaiani 2012). With increasing wealth in the 18th century and declining food prices in the 20th century, overconsumption and food waste already existed in the past (Henige 2008; Smith 2020), causing the preacher William Agutter to explain that: 'Waste proceeds from ignorance, ingratitude and unthankfulness, from luxury and want of compassion [...]' (Stuart 2009: 180). The difference between the past and the present is that the world population has increased while resources decreased, exacerbating the impact of food waste (Schneider et al. 2011).

Although sometimes perceived as a less pressing issue in some developed societies, wasting food is equal to wasting resources, such as water, land and energy, and means emitting Greenhouse Gas emissions unnecessarily. Further, there is a moral imperative regarding wasted food when we consider the scale of malnourished populations and food insecurity, both in developing and developed societies (FAO, IFAD, and WFP 2012). Food waste is not a new phenomenon but has reached a crisis level as never before (Papargyropoulou et al. 2014). Given the challenges of resource depletion and climate change, the situation has to change.

1.3 Food waste in Europe

1.3.1 Overview: Food waste in the supply chain

Developed regions, such as Europe, North America and industrialised Asia, waste more food than developing countries, with the loss happening at different levels in the supply chain (FAO 2011). In low-income countries poor infrastructure, especially for storage, inefficient technologies and climate conditions lead to wastage at post-harvest and processing stages, while in high-income countries most food waste is created by retail and end-consumers as a consequence of overconsumption (buying, preparing, serving too much food) (FAO 2011; Chalak et al. 2016; Baglioni, de Pieri, and Tallarico 2016). The following model (Figure 1.1) shows the reasons for food waste at the different stages along the supply chain, which are further explained later in the next section (1.3.2) (Cicatiello et al. 2016: 98).

Some materials have been removed from this thesis due to Third Party Copyright. Pages where material has been removed are clearly marked in the electronic version. The unabridged version of the thesis can be viewed at the Lanchester Library, Coventry University

Food waste can be categorised into avoidable, possibly avoidable and non-avoidable waste (Vanham et al. 2015; Visschers, Wickli, and Siegrist 2016). Edible food designated for disposal can be classified as avoidable or possibly avoidable, while the latter category includes food that some people eat, but others do not, such as potato peels (Papargyropoulou et al. 2016). Non-avoidable food waste describes food that does not meet the required standards for human consumption, like egg shells or bones (Papargyropoulou et al. 2014, 2016). Definitions of surplus food and waste vary (Alexander and Smaje 2008). This study applies the definition of surplus food as:

(...) safe food that for various reasons, at any stage of supply chain, is not sold or consumed by the intended customer, while food waste is defined as surplus food that is not used for feeding people (Garrone, Melacini and Perego 2014: 1461).

In this research, the emphasis is on the edibility and quality of surplus food. Therefore, this definition, which highlights that surplus food is edible food that simply was not used for its purpose and subsequently is left-over at any part of the supply chain, was chosen. In particular, this research focuses on surplus food as edible food that supermarkets or restaurants usually would discard and not consider for sale anymore. Because of the high levels of surplus food wasted by retailers, restaurants and households, the chosen area of research is Europe (Stenmarck et al. 2016). To narrow the focus further, the UK and Denmark have been selected, as these nations represent the highest end-of-supply-chain food waste (UK) and average European waste levels (Denmark) regarding national food waste related to distribution and per capita food waste related to consumption (household and food service) (see 4.2 for more information) (Bräutigam, Jörissen, and Priefer 2014).

Creating an overview of food waste in the European Union (EU) is difficult as food waste definitions, calculations and provision of data vary among member states (Stenmarck et al. 2016). The following pie chart (Figure 1.2) indicates the food waste (avoidable and non-avoidable) by sector in the EU in 2012 (Stenmarck et al. 2016), showing that households waste the most food (53%), followed by the processing (19%) and food services (12%) industries. Production is responsible for 11% of food waste in the EU, while 5% is generated by wholesale and retail. Hence, the food waste created at the end of the supply chain by food services, retail and wholesale, and households represents 70% of all food waste.

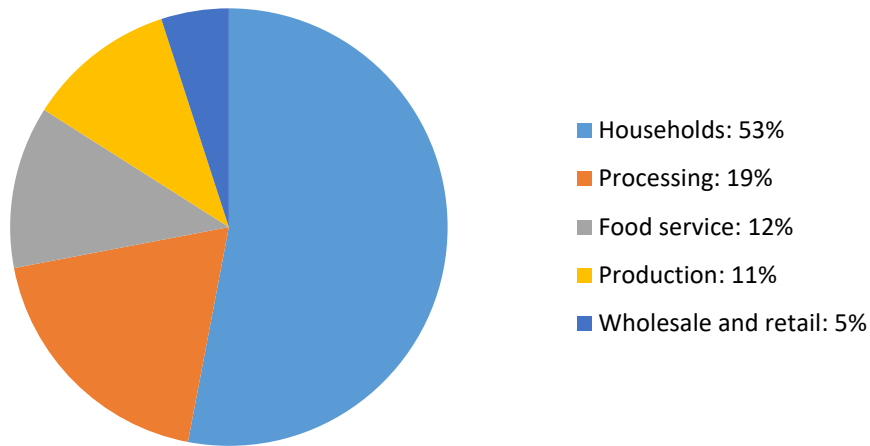


Figure 1.2: Food waste by sector in the EU, 2012 (Stenmarck et al. 2016: 4)

The UK Waste and Resources Action Program (WRAP), an organisation working with the government, businesses and communities towards sustainability goals, calculated that food constituted 78% of the waste generated along the food and drink supply chain in the UK in 2011 (Whitehead et al. 2013). WRAP's (2018a) latest data on food waste by sector in the UK (based on numbers from 2015) show that most food waste occurs at the household level (70%), followed by manufacturing (18%), hospitality and food service (10%) and finally retail (3%) (Figure 1.3). 25% of the food sent to landfill by manufacturers and retailers is edible and could feed 250,000 people in the UK (Mena, Adenso-Diaz, and Yurt 2011). Food waste mainly occurs due to quality requirements, legal regulations, market convention, human failure, technical errors, logistical issues and cultural reasons, with the different stages of the supply chain being interrelated (Stenmarck et al. 2016).

Some materials have been removed from this thesis due to Third Party Copyright. Pages where material has been removed are clearly marked in the electronic version. The unabridged version of the thesis can be viewed at the Lanchester Library, Coventry University

Figure 1.3: Food waste by sector in the UK, 2015 (WRAP 2018b)

One factor affecting waste throughout the supply chain is varying consumer demand making forecasting difficult and hence causing surplus food at all levels. Another factor is represented by assumed consumer expectations regarding the quality of food, as those assumed expectations influence the retailers' offer and hence determine requirements for suppliers. Regarding fruit and vegetables in particular, consumers are used to being offered standardised produce and will tend to choose perfect products over misshapen ones (Göbel et al. 2015). However, Evans (2014) found that for 45% of consumers the appearance does not play a conscious role in purchasing fruit and vegetables, while 10% actively choose misshapen items. Loebnitz, Schuitema and Grunert (2015) tested this assumption among Danish consumers and only extremely abnormal products were rejected. Nevertheless, marketing standards based on this conjecture cause the retailer to demand perfectly shaped produce from its supplier, as the imperfect items cannot be sold (Göbel et al. 2015). This leaves the producer with a huge amount of fruit and vegetables that are edible but cannot be marketed. Changing the practice of only offering perfect products and normalising the use of non-standard fruit and vegetables could change the social habit of choosing perfect products and thus reduce food waste at the retail and producer level (Evans 2014).

Meeting customer requirements while being efficient and economically viable are the main aims of all supply chains (Dani 2015). The food industry's emphasis on appearance, availability, efficiency and cost, creates waste throughout the supply chain, with examples being overstocking for service efficiency or spoilage due to choosing cheaper inferior

options (e.g. cheap transport) (Mena, Adenso-Diaz, and Yurt 2011; Göbel et al. 2015; Papargyropoulou et al. 2016). Mena, Adenso-Diaz and Yurt (2011) point out that food waste is often underrated and disregarded as a cost, thus opportunities for better waste management, re-usage and recycling that could potentially increase profitability, are overlooked. The following section outlines the scope and causes of food waste at the household, retail and hospitality levels in more detail.

1.3.2 Food waste in households, retail and hospitality

As shown in the previous section, the biggest share of food waste is created at the end of the supply chain by households, retail and hospitality. This section provides an overview of the scope and causes of food waste at these supply chain stages. First, household food waste is examined, secondly, food waste in retail is described and thirdly, the focus is on food waste in the hospitality sector.

Households create the most food waste, with consumers in North America and Europe disposing of the most food. They waste 95-115 kg per capita per year, which is equivalent to more than one third of the food production of those regions (Visschers, Wickli, and Siegrist 2016). UK households, for instance, waste, according to estimates, 22% (330 kg) of their annually purchased food and drink items (Stancu, Haugaard, and Lähteenmäki 2016) with 70% of those being edible (WRAP 2018a). The value of that waste equals £15 billion while the total UK household food waste creates 22 million tonnes CO₂ GHGe (WRAP 2018b). According to a WRAP study from 2012, 60% (4.2 million tonnes) of household food waste was avoidable, 17% was possibly avoidable and 23% were unavoidable (Quested, Ingle, and Parry 2013; WRAP 2017a). Fresh vegetables and salads represent the biggest part of household food waste by weight (19%; 810,000 t), while meat and fish as well as home-made meals were the most expensive edible items wasted (each 17%; £2.1 million).

According to WRAP's study (Quested, Ingle, and Parry 2013), 80% of edible food was discarded because it was not used in time or too much was cooked, prepared or served. Research shows that large households waste more, while higher income, fewer shopping trips and large packaging also lead to higher food waste levels (Stancu, Haugaard, and Lähteenmäki 2016; Visschers, Wickli, and Siegrist 2016). Older people were found to waste

less, which was related to better cooking skills and the experience of growing up in the post-war era (Watson and Meah 2013).

Awareness campaigns such as 'Love Food, Hate Waste' in the UK or 'Stop Wasting Food' in Denmark aim to reduce food waste at household level, for example by offering recipes to use leftovers. However, caring for a family often means cooking according to their tastes, which can be a barrier to adopting creative recipes, while social norms dictate the need to provide fresh food (Segrè and Gaiani 2012; Evans 2014). Another initiative to reduce food waste is food sharing, often enabled by technology, as the app Olio, for example (Farr-Wharton, Choi, and Foth 2014) (see also 2.2.3).

With individual households creating the most food waste, significant research into food waste has focused on this part of the supply chain (e.g. Graham-Rowe, Jessop and Sparks 2014; Chalak et al. 2016; Stancu, Haugaard and Lähteenmäki 2016; Visschers, Wickli and Siegrist 2016). Food waste at the household level is closely related to food waste at the retail and hospitality level, as overconsumption is the main cause of food waste at these supply chain stages. Interestingly, the factors leading to overconsumption in the household, such as assumed 'customer' perception and expectation, forecasting errors and the motivation to guarantee the provision of sufficient high quality food at all times, are true for retail and hospitality as well, as shown in the following paragraphs.

Measuring the amount of food waste occurring at the retail and hospitality sector is difficult, as statistics available are inconsistent given the different interpretations of what is measured as food waste by food retail and hospitality businesses (Stuart 2009). Gaps in the knowledge and data as well as varying definitions of food waste further complicate the evaluation of food waste in these sectors (Pirani and Arafat 2014). Therefore, waste numbers cannot be compared directly, making accurate measurement and analysis of the problem difficult. However, this does not preclude demonstrating the immense scope of food waste and outlining the causes of food waste in these sectors whilst highlighting the need for a uniform concept to measure the real extent of food waste (Stenmarck et al. 2016). In this study, retail encompasses shops of all sizes selling food and beverages (packaged and unpackaged), including businesses like hypermarkets and supermarkets as well as convenience stores (MarketLine 2015). Hospitality as a sector describes the food service industry and includes restaurants, bars, hotels and other establishments where meals and drinks are offered to customers (Pirani and Arafat 2014).

Even though retail is the sector creating the least food waste compared to the other supply chain stages, the mass of edible food being wasted daily at supermarkets is both problematic and immoral (Stuart 2009; Mena, Adenso-Diaz, and Yurt 2011). The amount of (edible) food waste within retail is difficult to determine as companies treat information about their waste as sensitive data, believing it provides an advantage to competitors (Stuart 2009; Mena, Adenso-Diaz, and Yurt 2011). Calculations based on self-reported numbers suggest that UK retailers generate at least 1.6 million tonnes of food waste annually (Stuart 2009; Mena, Adenso-Diaz, and Yurt 2011). The study of a supermarket in Italy revealed that it was wasting 100 kg of edible food per day, which is equivalent to 12 three-course meals with add-ons and resulted in 23.5 t of wasted surplus food and a cost of €46,000 in 2012 (Cicatiello et al. 2016). In Denmark the average weekly food waste per shop is 200 kg, mounting up to 40,000 – 46,000 t per year for the whole retail sector (Stenmarck et al. 2011). These numbers cannot be directly compared as the population of these countries varies, but they do indicate the significant scale of waste at retail level. Fresh fruit, vegetables and bakery products form the biggest share of retail food waste (Stenmarck et al. 2011; Cicatiello et al. 2017). Despite the scope of retail food waste, most managers of the major retailers in the UK do not consider food waste as considerable issue, due to the fact that processes for its handling such as a budget for waste disposal are in place (Filimonau and Gherbin 2017).

Poor management such as incorrect storage (e.g. cold chain management, stock rotation) or insufficient staff training are among the factors affecting food waste (Mena, Adenso-Diaz, and Yurt 2011; Segrè and Gaiani 2012; Cicatiello et al. 2016). However, the major reason for food waste at the supermarket is overstocking, which is motivated by different economic and behavioural assumptions as shown by multiple authors (Stuart 2009; Stenmarck et al. 2011; Mena, Adenso-Diaz, and Yurt 2011; Cicatiello et al. 2016). First of all, retailers' priority to sell, thus to attract and retain customers, causes them to offer an abundance of products, as retailers assume that consumers prefer to choose from a variety of options and expect to see full shelves at any time (Stenmarck et al. 2011). Retail managers reported losing customers to competitors if the customers' expectations of product choice and availability could not be met (Gollnhofer and Schouten 2017). Consequently, offer always exceeds demand, resulting in surplus food (Mena, Adenso-Diaz, and Yurt 2011). Interestingly, scholars have found that even though extensive choice initially attracts consumers, it hampers the purchasing-decision and fosters regret, while limited choice motivates consumption (Iyengar and Lepper 2000; Schwartz 2004). Therefore, the above-mentioned retailer assumption should perhaps be reconsidered.

Secondly, overstocking is a consequence of buying in bulk, which often is economically more viable than purchasing only the required amount, even if the surplus is wasted (Stuart 2009). Third, overstocking is due to the over-prediction of sales (Cicatiello et al. 2016). Forecasting errors can be related to marketing strategies, weather or seasonality (Mena, Adenso-Diaz, and Yurt 2011). Promotions, for example, serve the supermarkets' major aim of increasing sales (by tempting consumers to over-consume, which results in higher household food waste) but also make forecasting very difficult (Mena, Adenso-Diaz, and Yurt 2011). Smaller shops such as convenience stores find it especially difficult to predict the number of daily drop-ins (Stuart 2009). Hence, overstocking is a retail practice causing surplus food and food waste.

Overstocking can be seen as the root cause of food waste with supermarkets carrying about 100,000 stock items in excess to guarantee availability (Dani 2015). These surplus products reach their 'best before' date before they can be consumed. Fruit and vegetables are also rejected and discarded because they are blemished due to being stacked in big piles for attractive presentation (Stenmarck et al. 2011). Products with minor defects are rejected by consumers, usually because they can choose from a wide range of perfect items that are also on display. Yet, interestingly, when supplies of products are reduced, consumers will accept those same imperfect items, which casts doubt on the perceived necessity for an abundance of perfect products (Stenmarck et al. 2011; Göbel et al. 2015). Imperfect products, such as biscuits in damaged packaging or blemished fruit and vegetables, are first neglected by shoppers and then discarded by supermarket staff. Even though the quality, that is food safety or taste, is not affected at all, products with inferior appearance are not purchased and subsequently discarded (Segrè and Gaiani 2012; Cicatiello et al. 2016).

Moreover, the power imbalance between suppliers and retailers in favour of the latter affects food waste levels in developed countries. In Europe the top ten retailers had a market share of 60% in 2010, enabling them to choose produce from thousands of suppliers on the one side and sell it to millions of customers on the other side (Segrè and Gaiani 2012; Consumers International 2012). The resulting bargaining power allows retailers to dictate prices and order policies, directly affecting waste levels (Consumers International 2012). If retailers negotiate to pay low prices to food suppliers, this also keeps costs down for wasting surplus food, meaning wasting food is not as detrimental for their profitability as it would be if they had to pay higher food prices (Göbel et al. 2015). Even so, any food wastage represents a reduction in profits for retailers (Cicatiello et al. 2016). Their superior position also enables supermarkets to return produce that is close to the end of its shelf life (and

therefore unattractive to consumers (Göbel et al. 2015)) and to change orders at short notice, which leads to waste at the supplier stage, as returned produce often cannot be marketed anymore (Cicatiello et al. 2016). Furthermore, late order changes force the supplier to over-stock in order to meet their customers' flexible demands and thus create surplus, which turns into waste eventually (Segrè and Gaiani 2012; Göbel et al. 2015). These tensions and conflicts add further to the amount of food waste generated, and create significant challenges for stakeholders in the supply chain.

The hospitality sector generates a substantial quantity of food waste for similar reasons as the retail sector. According to Pirani and Arafat (2014; 2016), food waste in the UK hospitality sector amounts to 920,000 t per year, equivalent to 1.3 billion meals; yet 75% of it is avoidable. The average food waste per restaurant guest in the UK is 0.48 kg. The authors suggest that if this amount could be reduced by 5%, the industry could save £250 million over 2 years. As in the retail sector, the emphasis in restaurants is not on food waste but on customer experience, despite the vast amounts of avoidable food waste and the considerable cost related to it (Pirani and Arafat 2014; Charlebois, Creedy, and Von Massow 2015). In order to please the guest, the variety of restaurant menus is high and portion sizes overly generous (Pirani and Arafat 2014; 2016). In addition, restaurants over-stock and over-prepare to be primed for late customers and unpredicted demand (Pirani and Arafat 2014).

At a restaurant, food waste is created during storage (spoilage), preparation (e.g. peelings, offcuts), consumption (leftovers on guest plates and on serving dishes), and at the end of service (unconsumed food). Studies presented by Pirani and Arafat (2014; 2016) quantify the amounts of waste at each stage within different countries. UK restaurants create 65% preparation waste, 5% spoilage and 30% leftovers from customer plates. In Sweden, plate waste accounts for the largest share, with 11% to 13% of a meal being disposed of. A typical food portion in Switzerland weighs 300 grams (g) and causes waste of 835 g, 780 g are lost during preparation, 55 g are not eaten by the customer.

Reasons for spoilage are poor stock rotation or incorrect storage, thus, are related to procurement and inventory management practices (Pirani and Arafat 2014; Charlebois, Creedy, and Von Massow 2015). More frequent deliveries can reduce waste through spoilage but also inhibit financial benefits of buying in bulk while generating further emissions. Preparation waste can be reduced by pre-cooking larger portions, which can result in unconsumed food at the end of the service, while cooking every meal from scratch according to demand, as well as a varied menu and experimentation with new dishes

increases preparation waste (Pirani and Arafat 2014; 2016). Using many serving dishes, stewarding on big plates and incorrect portion sizes augment the amount of plate waste. Expectations regarding the average portion size are influenced by culture, with average portion sizes in the US being bigger than in France, for example (Sirieix, Lála, and Kocmanová 2017).

Furthermore, the type of service (e.g. buffet, à la carte) as well as correct forecasting are critical factors for the amount of food wasted (Papargyropoulou et al. 2016). A la carte service creates more preparation waste but less plate waste, while the fraction of avoidable waste from buffet leftovers accounts for 94% (Papargyropoulou et al. 2016; Pirani and Arafat 2016). An example to visualise the environmental impact buffet food waste can have is provided by the water footprint of the food waste from a wedding buffet in Abu Dhabi, which corresponded to the daily water demand of 17,000 people (0.6 million litres) (Pirani and Arafat 2016). Pre-booking helps accurate forecasting, which reduces surplus food, but restaurants also prepare for customers that did not reserve in advance and therefore have a surplus of roughly 30% (Papargyropoulou et al. 2016). In a similar way to supermarkets, restaurants aim to present full buffets and to meet consumer demand until the end of the day, thus causing surplus food and hence, food waste (Pirani and Arafat 2014; Papargyropoulou et al. 2016). Waste management strategies include menu-engineering, smaller plate sizes and signs welcoming buffet customers to serve themselves multiple times as well as food donations to charities (Pirani and Arafat 2014).

Summarising the situation of food waste at the end of the supply chain, it can be stated that even though awareness of the problem is rising, avoidable food waste remains a persistent problem that is insufficiently tackled (Pirani and Arafat 2014; Göbel et al. 2015; Stancu, Haugaard, and Lähtenmäki 2016). Insight into consumer response to different waste avoidance strategies at the retail and hospitality level would be beneficial and could motivate organisations to change wasteful processes. An overview of the main reasons for food waste occurring at households, retail and hospitality is provided below (Table 1.1). The table illustrates that the different supply chain stages experience the same causes for food waste. The following section outlines how the surplus food created at these supply chain stages is currently handled.

Cause of food waste	Household	Retail	Hospitality	Reason
Overstocking / overpurchasing	x	x	x	Forecasting errors, customer attraction, financial benefits
Over-preparation	x		x	Forecasting errors, customer attraction
Over-serving	x		x	Customer attraction, using too many / too big dishes
Spoilage		x	x	Incorrect storage, poor stock rotation
Misperception of dates	x	x		Inconsistent, confusing application
Aesthetical imperfections		x		Overstocking, customer attraction
Low food prices	x	x		Supplier-retailer power imbalance

Table 1.1: Overview of causes for food waste at the end of the supply chain (author)

1.3.3 Current handling of surplus food

Surplus food that is not consumed turns into waste (Alexander and Smaje 2008; Garrone, Melacini and Perego 2014) and further handling is described as waste management, including disposal at landfill, recycling and recovery, while the ideal case is waste prevention by changing production and consumption systems holistically (Whitehead et al. 2013; Papargyropoulou et al. 2014; Mourad 2016).

The majority of surplus food is wasted and a large proportion is sent to landfill, the easiest but also the most detrimental option of disposal (Stuart 2009; Mena, Adenso-Diaz, and Yurt 2011). Sending surplus food to landfill is especially harmful as methane, a highly potent greenhouse gas, is generated when organic waste decomposes, with a contribution to global GHGe of 8% (Wang et al. 1997). In developed countries, food waste and its handling including storing, sorting and processing, is responsible for 15% to 28% of the total GHGe (Bilska et al. 2016). All emissions related to food consumption (e.g. production, manufacturing, cooling, cooking) represent 26% to 50% of all man-made GHGe (Stuart 2009).

When food waste is disposed of at landfill all resources that went into producing the food, are completely lost (Stuart 2009). According to the EU Landfill Directive, food waste should

be diverted from landfill, while the European Commission (EC) is striving to eliminate landfilling and using waste as a resource by 2020 (Alexander and Smaje 2008; European Commission 2011; Pirani and Arafat 2014). The amount of food waste supermarkets and restaurants send to landfill varies from business to business with the average for the UK retail sector being 500,000 t, thus one third of the sector's food waste (Alexander and Smaje 2008).

With the rise of landfill tax and increasing social pressure, alternative waste treatment, such as recycling, using surplus food for animal feed, Anaerobic Digestion or donation of surplus food to charity, are applied more frequently (Stuart 2009; Mena, Adenso-Diaz, and Yurt 2011; Segrè and Gaiani 2012). Recycling includes composting and means that waste is separated and sent to recycling centres that re-use the components as a resource for other materials, while recycling policies and capabilities vary regionally (Waite 2009; Whitehead et al. 2013). The processing of animal feed (mainly relevant to the manufacturing sector) also counts as recycling (Whitehead et al. 2013; Papargyropoulou et al. 2014; Mourad 2016). Food waste is also used for energy generation via thermal treatment including incineration or Anaerobic Digestion with the latter being the environmentally less harmful recovery of energy (Ares and Bolton 2002; Whitehead et al. 2013). The definitions of 'recycling' and 'recovery' can vary, as for Mourad (2016), for example, 'recycling' includes electricity generation and 'recovery' redistribution of surplus food for human consumption, while Papargyropoulou et al. (2014) classify Anaerobic Digestion and incineration as 'recovery' and redistribution as 're-use'. This research uses Papargyropoulou's definitions, because this more detailed classification allows a clearer evaluation of waste treatment with recycling of food waste into animal feed or compost being more favourable than energy generation, for example, as less value is lost and fewer GHGe are created (see Figure 1.4, Food Waste Hierarchy).

The Department for Environment, Food and Rural Affairs (DEFRA) (2015) found that, in the hospitality and food sector in the UK in 2013, restaurants were not recycling or recovering waste, thus no food waste was composted or used for energy generation, while services and quick service restaurants composted the most, up to one third of their waste. Overall, the majority of food waste is disposed of in the residual waste, thus, is destined for landfill. Recycling has increased in the hospitality and food sector in the UK, with 12% being recycled in 2012 compared to 1% in 2006 (Defra 2015).

Data regarding waste management in the retail sector provide a different picture. Stuart (2009) found that in the UK retailers recycle 50% to 70% of their waste, which differs among

the retailers and is related to their stock, the share of packaging and fresh food. Whitehead et al. (2013) state that the UK grocery sector separates 88% of its waste, which enables further recycling and recovery, while less than 0.05% is used for Anaerobic Digestion, with the management of the remaining waste being unknown. In Denmark, most retail waste is incinerated with companies paying for private transport to a public incineration plant (Halloran and Magid 2014). Recovery is preferred to recycling, as the former is organised by the government while the responsibility for the latter is with the retailer (Halloran and Magid 2014). However, the recovery of energy from waste via incineration is viewed critically as GHGe are generated and resources used inefficiently (Ares and Bolton 2002).

Using surplus food as nutrition for human consumption is more desirable than recycling, recovery or disposal, especially given the problem of food poverty, a symptom prevalent in the developed and the developing world (FAO, IFAD, and WFP 2012; Whitehead et al. 2013). Third sector organisations worldwide collect surplus food from retailers, restaurants and consumers, and redistribute it to people in need; effectively fighting food poverty with food waste (Baglioni, de Pieri, and Tallarico 2016). Only a fraction of food is re-used, as charities have limited capacity depending on donations and volunteers, while the redistribution of surplus food, a perishable good, represents a logistical challenge (Alexander and Smaje 2008; Segrè and Gaiani 2012; Mourad 2016). Furthermore, retailers and restaurants have to organise and manage the redistribution, requiring the provision of labour and time with the estimated cost of redistributing surplus food to charity being £100 per tonne of food, which is cheaper than Anaerobic Digestion (Fitzpatrick et al. 2017). Whitehead et al. (2013) found that less than 1% of grocery waste in the UK is redistributed to charities (see also 2.2.3). The food waste hierarchy in Figure 1.4 depicts the various options for handling surplus food from the most to the least favourable treatment and shows that re-using surplus food for human consumption is the best option once surplus food has been generated (Papargyropoulou et al. 2014).

Some materials have been removed from this thesis due to Third Party Copyright. Pages where material has been removed are clearly marked in the electronic version. The unabridged version of the thesis can be viewed at the Lanchester Library, Coventry University

Figure 1.4: Food Waste Hierarchy (Papargyropoulou et al. 2014: 12)

Even though waste management always causes a resource loss and has an economic and ecological cost, waste prevention, the preferred option (see Figure 1.4), is not a dominant solution yet as it requires radical structural changes in production and consumption patterns (Mourad 2016). The next best option, which is promoted by governments and organisations, is reusing surplus food for human consumption (see 2.2.3 for more information on surplus food redistribution) (Mourad 2016). Proposed actions to foster the redistribution of surplus food include the EC's policy suggestions including legislation to overcome barriers to food donations and food re-usage, and revising labelling such as 'best before' dates, which confuse consumers and escalate waste (Deloitte 2014; European Commission 2015). However, food waste remains a complex and wicked problem requiring creative and multi-agency solutions.

The FAO recommends that investments should be made in sustainable food systems (providing nutrition to all without compromising the future) that tackle the unsustainable behaviour of retailers and consumers (HLPE 2014). Experts consider that such a food system could be provided by third parties that sell surplus food at a discounted price (HLPE 2014). Selling instead of wasting surplus food aligns with the idea of a circular economy, which encourages the treatment of waste as a resource (see also 2.2.1, 2.2.2) (European Commission 2015). Facing resource depletion, food poverty and climate change, the EC (2015) is promoting the principle of a circular economy as a solution approach. Furthermore, the EC (2011) sets the target for member states to reduce food waste by 50% and resource input into the food chain by 20% by 2020 (Göbel et al. 2015), hence, is suggesting a

degrowth strategy (see 2.2.2) (Demaria et al. 2013). Consumption of 'new' resources can be reduced, hence degrowth achieved, when recovered waste materials such as surplus food are re-used as input for further production and consumption (Gibbs and O'Neill 2016). The provision of cheap surplus food based on a circular economy model is a solution that can solve environmental, social and economic issues and therefore, differs from most solutions to food waste that only focus on one of these aspects (Mourad 2016).

Given the potential value (economic and sustainable) in selling surplus food, a number of innovative business models have emerged in the food retail and hospitality sector to test out this proposition based on the model of a circular economy. While processing surplus food into jams, juices, soups or meals as well as redistribution to charity are the most common concepts (FoodWIN 2017), this research is focusing on businesses selling surplus food in its original form, without further processing, directly to the consumer (see 2.2.3 and 4.2 for more detail).

Examples of those businesses in the UK and Denmark are supermarkets that solely sell surplus food from retailers and food producers at a discount of 30% to 50%. Wefood in Copenhagen and Niftie's in Dover both launched in 2016 and represent such surplus supermarkets (Nifties 2017, DanChurchAid 2016, The Guardian 2016). Approved Food in the UK is another retailer selling surplus food but solely online (Approved Food 2016). Technology-enabled business models that sell surplus food via an app, form further examples. Too Good To Go (TGTG) was founded in 2015 and operates an app developed in Denmark and applied internationally¹ (Too Good To Go 2016). Users can order leftover meals from participating restaurants at a cheap price and collect their orders shortly before the restaurant closes. The app is particularly aimed at restaurants offering buffet-style food, the food service type said to generate most food waste (Papargyropoulou et al. 2016, Pirani and Arafat 2014). Karma and Your Local are similar apps operating in Paris, London and Sweden (Karma) and Denmark (Your Local) (Innovation Fund Denmark 2017; Karma 2019).

By selling surplus food cheaply to consumers, these new business models offer an opportunity for sustainable consumption, while addressing the issues of food waste, overconsumption and food poverty. Studies examining initiatives selling surplus food would be valuable considering the impact that could be created by scaling up these innovations successfully, but the topic remains under-investigated (2.2.3, 2.2.4). Research that

¹ TGTG is available in Austria, Belgium, Denmark, France, Germany, Italy, Norway, Poland, Spain, Switzerland, the Netherlands and the UK.

empirically analyses these business models (supermarket and technology-enabled) and their socio-cultural environment in order to understand the contextual factors benefitting or hindering the diffusion of these innovations, that explores consumers' perceptions of these concepts, how receptive they are towards these businesses, and that investigates the potential success of these approaches to reduce food waste while remaining economically sustainable, has yet to be undertaken (Gibbs and O'Neill 2016). This knowledge would be useful to determine whether these concepts can simultaneously scale up and reduce food waste, while also discouraging the consumption of new products. Furthermore, assumptions regarding consumer perceptions of potential barriers to surplus food consumption as well as general presumptions of the retail and hospitality sectors, such as the conjecture that consumers demand an abundance of perfect products at all times, could be tested. The next section describes the aims of this research and outlines the structure of this thesis.

1.4 Thesis structure

This research aims to fill the gaps in knowledge considering businesses selling surplus food in its original form as potential solutions to food waste. The research question and research objectives are:

Research question:

How can businesses selling surplus food commercially be adopted by consumers and reduce food waste in Denmark and the UK?

Research objectives:

1. To understand the motivations and barriers for consumers to engage with businesses selling surplus food.
2. To explore the challenges the businesses are facing in selling surplus food.
3. To identify the successes these businesses are achieving.
4. To analyse how these businesses can become long-term solutions to food waste.

To gather the information needed to answer the research question a case study approach was chosen. Two supermarkets selling surplus food solely and an app enabling restaurants to sell their surplus food to consumers represent the two business models that were both investigated in Denmark and the UK. Qualitative data were collected via interviews with consumers and business representatives and via observations of both. Also, secondary data such as business records were investigated. The data were analysed applying thematic analysis. Also the theory of diffusion of innovation (TODOI) inspired the analysis (see Section 2.5, Chapters 3 and 4).

The following chapter provides a review of the relevant literature regarding the research objectives. To comprehend potential challenges and successes these businesses experience, other concepts that reduce food waste were investigated. An overview of the current legislation is provided, as the legal situation influences further concepts. The circular economy and degrowth are discussed as means to achieve sustainable development, while the redistribution of surplus food represents a circular economy and has the potential to support degrowth. Various ways of surplus food redistribution and their limitations as outlined by scholars are presented in the following. As the focus of this research is on the commercial sale of surplus food, literature regarding the different aspects of businesses selling surplus food is reviewed in the next section. To understand the motivations and barriers for consumers to engage with businesses selling surplus food, a general

understanding of consumer behaviour is essential. Literature focusing on the factors affecting consumers' shopping behaviour is discussed. The TODOI is introduced to facilitate the understanding of consumer behaviour towards the innovation of businesses selling surplus food. The literature review revealed the gaps in existing knowledge justifying the need for this research.

Chapter Three describes the methodological skeleton of this research. Philosophical considerations relevant for this study are presented first, explaining the choice of perceptual phenomenology, which acknowledges individual perceptions as realities. Case study research is outlined as the chosen methodology, and it is explained how research quality was guaranteed.

Chapter Four provides an overview of the data collection and data analysis processes. The cases and their background are presented followed by an explanation and justification of the methods applied for data collection. Section 4.4 describes how the data collection was conducted for the different cases. Detailed information regarding interviews, observations, reflective notes and ethical guidelines is provided. The description of how saturation was reached and the end of data collection determined concludes this section. The steps undertaken for data analysis are presented in Section 4.5. The chosen method thematic analysis is explained followed by a description of the transcription and coding processes. Limitations regarding data collection and analysis are outlined thereafter. This chapter concludes with reflections regarding positionality and the researcher's development during data collection and analysis.

The results are presented in Chapter Five, which is structured according to the research objectives. Findings regarding consumers' engagement with the case businesses are outlined first, followed by the results considering the challenges these businesses face in selling surplus food. The successes of the case businesses are explained thereafter. The factors affecting whether the businesses selling surplus food can be long-term solutions to food waste are presented in Section 5.5. The findings and their interrelation are illustrated in a framework in Section 5.6.

Chapter Six answers the research question, discusses the results in relation to existing knowledge and presents the contributions of this research to theory and practice. First, the development of a new theory explaining how businesses selling surplus food commercially can be adopted and reduce food waste is outlined. A conceptual framework illustrating the theory is presented as well. The second part of Chapter Six provides the answer to the first

part of the research question and explains the factors affecting adoption of the case businesses. The third part of the chapter answers the second part of the research question by describing how food waste is reduced.

This research is the first investigating businesses selling surplus food commercially to consumers as a solution to food waste. Contributions to knowledge include the identification of the factors that affect the diffusion of those businesses and the finding that the businesses selling surplus food actually reduce food waste and support degrowth. A conceptual framework (illustrating a new theory) was developed explaining how businesses selling surplus food commercially can be adopted and reduce food waste. Another important contribution is represented by the finding that surplus food has a market value. Therefore, retailers and food service businesses are advised to sell their surplus food in-store. Moreover, the TODOI was applied in food waste research for the first time and proved to be a useful tool - in combination with perceptual phenomenology, in particular - to investigate a potential solution to food waste. The contributions to practice entail the explanation of the factors affecting business success and hence food waste reduction as well as recommendations for policymakers and the case businesses.

Chapter Seven concludes the thesis. An overview of the content of each chapter is provided and the key contributions of this research are summarised. Also, recommendations for practice as well as limitations of this study and suggestions for further research are explained.

The list of references and appendices follow the last chapter. Appendices are structured according to the chapters of the thesis and contain interview questions, the observation guide, participant information, the complete code structure, sales records and an overview of the author's personal development during the PhD. The following figure (Figure 1.5) illustrates the thesis structure by providing an overview of the content of each chapter.

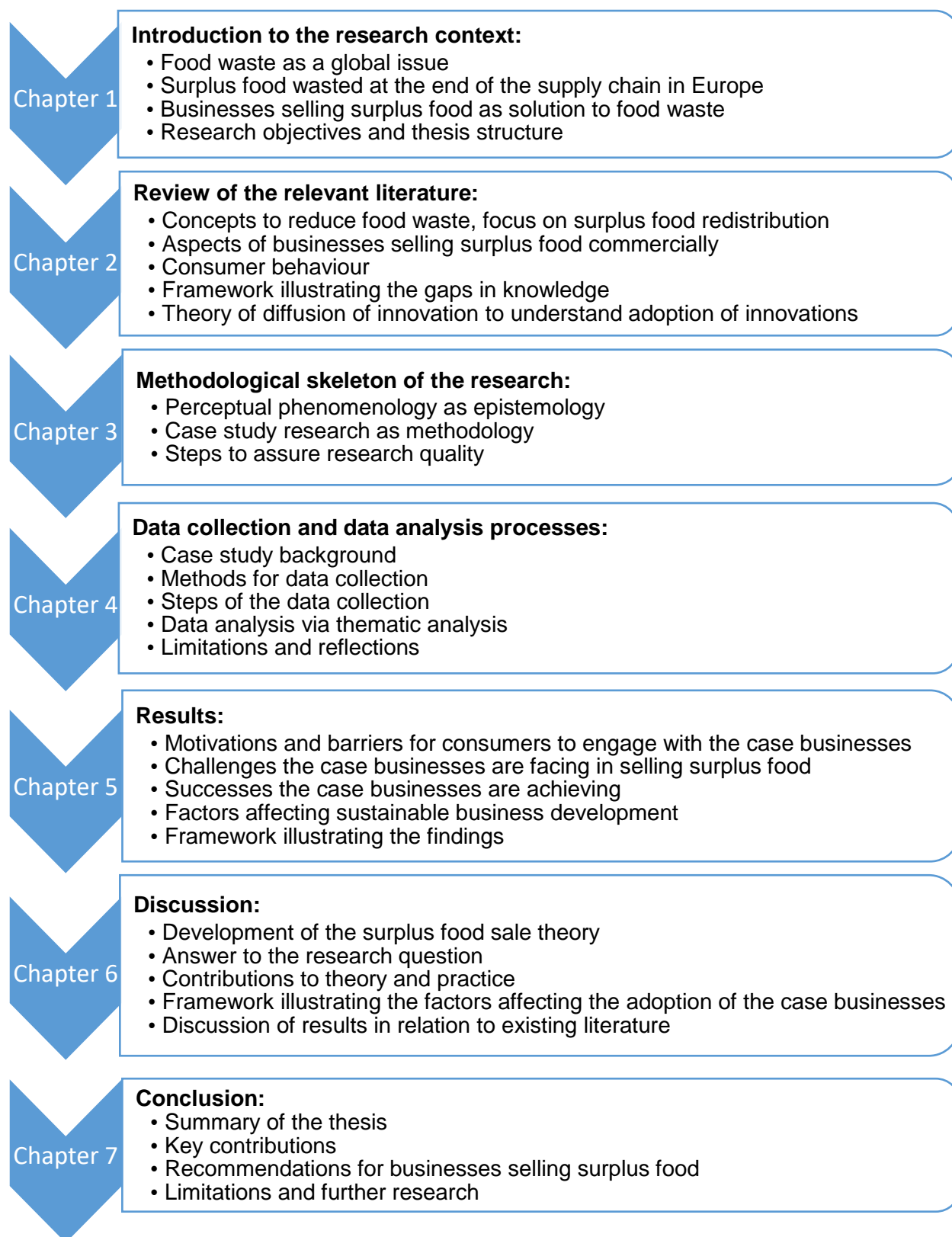


Figure 1.5: Thesis structure (author)

1.5 Summary

This chapter provided the context for this research. First, the scope of food waste as a global issue and its negative environmental and social impact was outlined. Secondly, the focus was drawn on food waste at the end of the supply chain in Europe, in Denmark and the UK in particular. Considerable amounts of surplus food are wasted by households, retail and hospitality. Overconsumption was presented as the main cause of surplus food and food waste at these supply chain stages. The majority of surplus food is sent as food waste to landfill, while the most desirable option is to re-use the surplus food for human consumption.

New businesses with innovative business models are selling surplus food cheaply to consumers, thus, alleviating the issues of food waste, overconsumption and food poverty. However, these potential solutions to food waste remain under-investigated. Therefore, this study researches three businesses selling surplus food to consumers to find out how those businesses can be adopted by consumers and reduce food waste in Denmark and the UK. The TODOI is applied to understand the diffusion of those businesses, which represent innovations regarding (surplus) food redistribution. The research objectives and thesis structure were presented in this chapter. The following chapter provides a literature review focussing on concepts for food waste reduction and consumer behaviour.

Chapter 2: Consumers and concepts for food waste reduction

2.1 Introduction

Food waste is a global problem that needs to be tackled to achieve sustainable development and thus keep human life within planetary boundaries (Cicatiello et al. 2016; Springmann et al. 2018). Selling surplus food commercially instead of wasting it is a potential solution to the problem that remains under-investigated. This chapter reviews relevant literature and highlights the gaps in knowledge.

Because businesses selling surplus food re-use surplus food, literature regarding concepts aiming to reduce food waste by re-using it is investigated. Concepts to reduce and re-use food waste include legislation, the implementation of a degrowth strategy and the redistribution of surplus food. Legislation influences food waste levels directly, via definitions of food durability, for example, and indirectly, by determining the handling of surplus food, for instance. The European Commission (EC) calls for a reduction of food waste and overall resource consumption, which can be achieved via a circular economy model that is based on the recovery of waste materials. Re-using surplus food is a priority over wasting it and represents a circular economy model while also supporting degrowth, a concept opposing overconsumption. The re-usage of surplus food can be achieved by its redistribution. Literature discussing the different concepts of surplus food redistribution is reviewed in this chapter. Also, literature discussing the various aspects of businesses selling surplus food, such as their social enterprise business model, their capability to disrupt common purchasing behaviour and their power to enable sustainable consumption, is outlined.

Whether food waste can be reduced via the sale of surplus food, depends on consumers' shopping behaviour and on their adoption of businesses selling surplus food. Therefore, this chapter also reviews literature considering consumer behaviour. Consumption practices are influenced by many contextual factors, which need to be investigated to understand consumer behaviour towards a certain phenomenon such as businesses selling surplus food. Factors affecting consumer behaviour towards an innovation (such as businesses selling surplus food) are described by the theory of diffusion of innovation (TODOI), which informed this research. The identified gaps in knowledge that justify the need for this research are summarised in Section 2.4, which is followed by the chapter's summary.

2.2 Concepts to reduce and re-use food waste

2.2.1 Regulation, legislation and the circular economy

This section reviews the literature regarding European legislation and regulations that affect food waste. Regulations and legislation can help to reduce but also increase food waste directly and indirectly. The definition of food durability and safety standards, for instance, affects food waste levels directly. Policies regarding the treatment of food waste, for example, influence food waste levels indirectly by determining if surplus food is re-used or wasted.

In the European Union, the food and drink value chain consumes 28% of material resources and creates 17% of direct Greenhouse Gas emissions (GHGe) (Göbel et al. 2015). Moreover, the elimination of food waste from UK landfills, which is generating methane when decomposing, would achieve a reduction in GHGe equal to the removal of 20% of all cars from UK roads (Pirani and Arafat 2014). Facing resource depletion, food poverty and climate change, the European Commission (EC) (2015) is promoting the principle of a circular economy to use and not lose these resources. In a circular economy, resources are used in a 'cradle-to-cradle' way to extract their maximum value, including waste recovery and re-use (European Commission, 2015; WRAP, 2017b). In its 'Roadmap to a Resource Efficient Europe', the EC (2011) sets the target for member states to reduce food waste by 50% and resource input into the food chain by 20% by 2020. In order to reach these targets, the EC encourages the treatment of waste as a resource (Göbel et al. 2015).

Unfortunately, some legislation actually contributes to increasing amounts of food waste, such as the EU regulations on food hygiene and durability (Deloitte 2014). The Food Hygiene Package comprises regulations enabling businesses to guarantee food safety, which can be interpreted more or less rigidly. These inconsistencies in applied practice can directly affect the amount of food waste (Deloitte 2014). Regulation (EC) No 1169/2011 determines that food companies have to provide information about food durability to the consumer and can decide whether the quality-related 'best before' or the safety-related 'use-by' date is used, depending on product composition (Deloitte 2014). Products that reached their 'use-by' date cannot be marketed anymore, which is not true for the 'best before' date. However, this is often misinterpreted, and subsequently surplus food turns into waste unnecessarily (Deloitte 2014; European Commission 2015).

Consumers avoid buying products that are close to or past their 'best before' date, causing retailers to only accept products with a remaining shelf life of over 70%, which creates avoidable food waste at the supplier end (Mena, Adenso-Diaz, and Yurt 2011; Segrè and Gaiani 2012; Göbel et al. 2015). In contrast to the 'use-by' date, which is often not considered by consumers in purchasing decisions, the dates that are crucial for consumer and staff decisions, namely 'best before' and 'sell-by' dates, only indicate the point in time until which the producer guarantees optimal quality (Institute of Food Technologists 2015). They are no guide to food safety, as the 'use-by' date, and indeed food can be safely consumed after those dates (Stenmarck et al. 2011; Dani 2015; Caraher and Furey 2017).

In Britain, date labelling was originally introduced for stock control, but anxious consumers contributed to the introduction of 'best before' and 'sell-by' dates on perishable fresh products in the 1970s (Milne 2013). Already at that time critics assumed correctly that the introduction of date labelling would cause consumers to only choose the products with the longest shelf life and leave the others behind. Another critical point is that manufacturers might label over-cautiously to protect themselves. The British food scares in the 1980s and 1990s, when some meat and egg products were contaminated with Salmonella, Escherichia coli (E-coli) and bovine spongiform encephalopathy (BSE) (Knowles, Moody, and McEachern 2007, BBC News 1998) resulted in the introduction of the 'use-by' date and the extended application of the 'best before' date to long-life products. The UK government encouraged consumers to carefully check the 'use-by' date and to not use products after their dates were expired. Today all three dates are applied inconsistently, with some products highlighting the 'best before', others the 'sell-by' and some the 'use-by' date (Milne 2013). As a result, consumers are confused about labelling and therefore reject perfectly good food, resulting in further food waste (Lebersorger and Schneider 2014; European Commission 2015; Toma, Costa Font, and Thompson 2017). Overall, 10% of the annual food waste in the EU is linked to date labelling, which is why the EC aims to make labelling easier to reduce food waste (European Commission 2018).

In the last few years, awareness of the considerable amounts of avoidable food waste at the supermarket has increased while also prices for disposal, such as landfill tax in Europe, rose (Mena, Adenso-Diaz, and Yurt 2011; Göbel et al. 2015; Cicatiello et al. 2016). The higher economic and social cost has caused some supermarkets to take action as part of their corporate social responsibility (CSR) strategies (Food Ethics Council 2009; Segrè and Gaiani 2012). Tesco, for example, was the first retailer in the UK to publish their waste data (regarding UK operations), while others started to recover food waste, distributing surplus food to charities or sending it to Anaerobic Digestion for energy generation (Stuart 2009;

Segrè and Gaiani 2012; HLPE 2014). However, with overstocking and the rejection of imperfect products as standard procedures in retail, surplus food is created of which the majority still is wasted (Midgley 2014).

Policies to reduce food waste vary in the EU member states. France has implemented a law that requires large retailers to donate their surplus food to charities; Belgium, France, Sweden, Denmark and the UK have implemented a food waste hierarchy (see 1.3.3, Figure 1.4 and next paragraph) and Italy has established the Good Samaritan Law, solving liability issues of food donors (Deloitte 2014; Baglioni, de Pieri, and Tallarico 2016; WRAP 2016). Fiscal incentives are another measure to motivate corporations to donate surplus food instead of choosing the relatively easy option of sending avoidable food waste to Anaerobic Digestion or landfill, where it creates emissions instead of serving as nutrition (Deloitte 2014; European Commission 2015; Chalak et al. 2016).

Also in the UK and Denmark, food waste legislation differs (Deloitte 2014). Both countries implement a food waste hierarchy (see 1.3.3, Figure 1.4) determining that food waste should be prevented as a first step, be redistributed to humans if prevention is not possible and only then be fed to animals (Caraher and Furey 2017). If wastage cannot be prevented nor the food be redistributed, energy recovery, for example by Anaerobic Digestion, is the next step, followed by composting and as a last option disposal at the landfill (FAO; UNEP, and WRAP 2014). However, the actual implementation of the food use hierarchy depends on the supply chain actor. Filimonau and Gherbin (2017) found that some retail managers in the UK are not aware of the preferred options to disposal and acknowledge the latter as a food waste mitigation strategy. Welch, Swaffield and Evans (2018), in contrast, argue that most major UK retailers comply with the food use hierarchy for environmental, moral, reputational and financial reasons. Tax benefits, such as tax deductions in Denmark and VAT exemption for food donations in the UK, are intended to encourage the donation of surplus food (Deloitte 2014).

Voluntary agreements defining targets and actions to reduce food waste exist in both countries. Some retailers in the UK signed the Courtauld Commitment, an agreement with WRAP to invest in innovations to reduce waste and to improve resource efficiency (Alexander and Smaje 2008; Whitehead et al. 2013). For 2025 the target is to reduce food waste by 20% (Fitzpatrick et al. 2017). Stop Wasting Food is a Danish consumer movement involving consumers, retailers and restaurants on a voluntary basis (Segrè and Gaiani 2012). As part of this awareness campaign, restaurants introduced 'doggy bags', enabling guests to take their leftovers home, and cooperating retailers reduced food packaging and

portion sizes (Segrè and Gaiani 2012). Cultural acceptance of 'doggy bags' varies with the type and location of the restaurant (Pirani and Arafat 2014; Sirieix, Lála, and Kocmanová 2017). In the USA, taking leftovers home is a common practice appreciated by consumers, as they paid for the full meal and therefore do not experience a loss, while in other countries, for instance in France or the Czech Republic, the 'doggy bag' is an indicator of a lower social status and related to feelings of shame (Sirieix, Lála, and Kocmanová 2017). Campaigns like 'Too Good To Waste' in the UK or 'Stop Wasting Food' in Denmark aim to improve the situation by enhancing the image of the 'doggy bag' and distributing free containers (Too good to waste 2011; Stop Spild Af Mad 2017).

The literature summarised above shows that food waste has been recognised as a major political issue but also that, despite useful legal recommendations being provided, little binding legislation to reduce food waste exists (Deloitte 2014; European Commission 2015). Consequently, surplus food continues to be generated and wasted along the supply chain. However, food waste can be reduced if surplus food is re-used, as suggested by the food waste hierarchy (see 1.3.3, Figure 1.4). Approaches based on the circular economy, such as the redistribution of surplus food, represent one opportunity to re-use surplus food. When surplus food is not wasted but re-used for human consumption, the amount of food needed for human consumption is lower. As resources are used more efficiently, overall resource consumption can be reduced. Thus, the circular economy can achieve both, the reduction in food waste and resource consumption (Ellen MacArthur Foundation 2019), which is necessary as described in the following section.

2.2.2 Degrowth to counteract overconsumption

The previous sections (1.3.2, 2.2) outlined that overconsumption is the main driver for food waste in developed countries. This section presents literature discussing the origin of overconsumption, the issues it causes and the counter-concept degrowth.

Overconsumption was enabled by a transformation from scarcity to surplus the Western World has experienced, as described by Evans, Campbell and Murcott (2013). Before and during the Second World War, governments, schools and cookbooks promoted measures to avoid food waste and provided advice on how to use leftovers. Post-war depression led to policies dictating the maximisation of food production, creating a food excess. The Cold War encouraged even more excessive food production, which, due to the possibilities of

industrialisation, resulted in an abundance of cheap food, putting efforts to not waste food into the background (Evans, Campbell, and Murcott 2013). This change from scarcity to surplus transformed the economic system and helped create a consumer culture, where consumption forms the centre of society and is based on desires instead of needs (Firat et al. 2013).

With increasing wealth, a phenomenon prevalent in developed countries since World War II, living standards and demand have incrementally grown and the economy has been able to satisfy increasing consumer needs (Carrington, Zwick, and Neville 2015). In the capitalist system, rising demand advances economic growth, leading to more prosperity and thus the constant creation and satisfaction of enhanced consumer needs, as demonstrated, for example, by current consumer demand for more varied and fresh food at all times (Carrington, Zwick, and Neville 2015; Göbel et al. 2015). Caraher and Furey (2017: 3) describe the system as:

(...) a 'consumptive environment' where the demands of the customer take precedence and so the food system is geared to delivering consumers' needs and wants. Such a system will always have surplus and waste food in it as the demands and behaviours of consumers change daily.

The problem related to this continuous growth of production and consumption is that the capacity of the earth's eco-system is limited (Carrington, Zwick, and Neville 2015). Currently, humanity is consuming 'the equivalent of 1.6 planets to provide the resources we use and absorb our waste' (Global Footprint Network 2016). Overconsumption causes resource depletion, global warming, pollution of air and water, the extinction of species and the loss of fertile soil, amongst other forms of environmental, social and economic degradation (Tanner and Kast 2003). This development is opposed to the principle of sustainability, which promotes the satisfaction of present needs without limiting future opportunities (WCED 1987). With more and more countries aspiring and adapting to the Western, capitalist lifestyle, this serious issue is being further exacerbated (Bilkent, Belk, and Lascu 1993).

Sustainable consumption is offered as the panacea for the consumer culture that characterises developed countries today (Carrington, Zwick, and Neville 2015). Scholars discussing the conundrum of sustainable consumption find its limitation in the fact that consuming 'greener' products still leads to the overconsumption of resources and the

creation of waste and pollution (Lorek and Fuchs 2013; Carrington, Zwick, and Neville 2015). Carrington Zwick and Neville (2015: 33) argue that 'even if ethical consumption were to happen in reality, it would not be able to resolve capitalism's underlying contradictions that rest on creating insatiable desire and consumption excess.' Jackson and Papathanasopoulou (2008) explain that increasing demand causes resource consumption to increase despite improved efficiency in supply chains, industrial production, transport and recreational activities.

The advisability of unrestricted economic growth, with regards to social as well as environmental consequences, has been questioned since the 1950s (Berg and Hukkinen 2011). The concept of degrowth appeared in 1972 as a social movement consisting of the voluntary reduction of production and consumption to achieve social and ecological sustainability (Demaria et al. 2013). Degrowth relates the environmental and social crisis to the growth economy and promotes alternative, less complex economies while considering ecological limits but also well-being, democracy and global justice (Demaria et al. 2013; Sekulova et al. 2013). In 1987, the World Commission on Environment and Development supported this stance by stating that limitations are essential to achieve sustainable development (WCED 1987).

Today, scholars argue that degrowth is a precondition for sustainability, and that a comprehensive reduction in today's excessive consumption is needed (Lorek and Fuchs 2013). Mourad (2016) specifies the necessary holistic structural changes to minimise surplus and waste as: a reduction in overall consumption and production, the limitation of choice and availability (e.g. fewer animal products, seasonal and local instead of imported food) and the renegotiation of food safety and food aesthetic criteria. Berg and Hukkinen (2011) found that politicians are aware of this obvious necessity but struggle to implement policies reducing economic growth, the capitalist measurement of wellbeing and economic success. Radical solutions fostering degrowth are perceived as unrealistic and naïve; surplus is accepted as 'part of the system' (Mourad 2016: 469).

Social enterprises, companies with the purpose of creating positive social or environmental impact, can be drivers for sustainable degrowth, as argued by Johannisova, Crabtree and Fraňková (2013). Often, these organisations are small, local, democratically governed, create a positive environmental and social impact and reinvest profits into their social purpose instead of maximising them. Hence, social enterprises represent the principles of degrowth. Sekulova et al. (2013) identify a gap in research exploring the potential of social enterprises and similar concepts to support degrowth. Also, businesses selling surplus food

can be classified as social enterprises with the potential to foster degrowth - not only through their alternative business model but also via the application of the circular economy, that is via re-using resources instead of consuming 'new' resources.

A circular economy, as targeted by the European Commission (2015), represents a degrowth strategy with reduced consumption of 'new' resources as recovered waste materials are re-used as input for further production and consumption (Gibbs and O'Neill 2016). In regards to food waste, a very efficient and valuable circular economy would be attained if surplus food was used for human consumption and not discarded, so that fewer 'new' resources were needed for food production and consumption, as demand would be partially met by surplus food (FAO 2013; Ellen MacArthur Foundation 2019). If surplus food was consumed instead of regular products, demand for the latter could decline, potentially leading to lower production levels and resource use and hence achieving degrowth.

Whether surplus food that is redistributed for free or at a reduced price is consumed or wasted, however, is questionable. These products might be perceived as food of inferior quality by consumers and therefore, not consumed but wasted at home instead (Aschemann-Witzel et al. 2017). Also, considering consumers' tendency for overconsumption, especially with regards to cheap products, and the fact, that they put less effort into the preservation of price-reduced food, the redistributed surplus food might be wasted and not consumed (see 2.3) (Graham-Rowe, Jessop, and Sparks 2014; Visschers, Wickli, and Siegrist 2016; Hebrok and Boks 2017). On the other hand, Graham-Rowe, Jessop and Sparks (2014) found that consumers are motivated to not waste food for monetary and moral reasons, which is in favour of the scenario that redistributed surplus food is consumed.

Investigating consumer behaviour towards the sale of suboptimal food at reduced cost by a Danish retailer, Aschemann-Witzel et al. (2017) found that the reduced price did not cause overconsumption and that food waste was not moved along the supply chain. Suboptimal food can classify as surplus food as retailers tend to discard those products, which are blemished, show other aesthetic imperfections or are close to their expiry date (Göbel et al. 2015; Cicatiello et al. 2016). Aschemann-Witzel et al. (2017) examined whether the cheap price of the imperfect food led to overconsumption and if thus, food waste was just moved along the supply chain and not reduced. Factors that affected consumers' purchasing decision regarding the suboptimal food were related to the unit size of the product, the expiration date and the product quality but also to their demand for that product, storing opportunities at home and the meal preferences of the household. Consumers took these

factors into account to avoid wasting the purchased items later at home. Motivations to not waste food included personal upbringing and the urge to not waste money, which coheres with Graham-Rowe, Jessop and Sparks' findings (2014). Overall, consumers with lower incomes and bigger households were more likely to purchase the suboptimal reduced items than consumers with higher incomes and single households.

Degrowth is supported if purchased surplus food is consumed and reduces regular food purchases. While Aschemann-Witzel et al. (2017) found that suboptimal items that were purchased at reduced prices were consumed, they did not investigate whether the suboptimal food replaced the purchase of regular food. Hence, research examining whether the sale of surplus food can motivate consumers to substitute their purchases of regular food with surplus food and thus support degrowth has yet to be undertaken.

As shown in this section, scholars depict degrowth as an advisable measure to counteract the issues caused by overconsumption. While the redistribution of surplus food based on a circular economy model has the potential to reduce food waste and support degrowth, the literature also indicates the complexity of consumer behaviour and acknowledges additional challenges related to the consumption of surplus food. Nevertheless, the correlation of the redistribution of surplus food and degrowth remains under-investigated. The following section presents the academic discussion of concepts for surplus food redistribution.

2.2.3 Redistribution of surplus food

The potential benefits of surplus food redistribution have been acknowledged in the previous sections (2.2.1, 2.2.2). This section provides an overview of the different concepts of surplus food redistribution as they are discussed in the literature. Research on surplus food is relatively new and has focused on various aspects, including redistribution of surplus food via charities, communities and businesses.

Surplus food is redistributed by charities to people in need or people with poor access to healthy food (Alexander and Smaje 2008). Alexander and Smaje (2008) analysed the surplus food redistribution process of the British charity FareShare. FareShare redistributes nutritious surplus food to organisations feeding homeless people and people with no or low incomes. By supporting those charitable organisations with surplus food, their clients receive food they cannot afford, their resources can be used for further purposes and food

waste is reduced. The authors found that 58% of the surplus food offered by retailers was consumed by recipients. The remaining 42% consists of surplus food that was rejected, discarded or diverted to animal feed by FareShare. 10% of this food was not fit for human consumption, 22% was wasted by the organisations during preparation or did not meet their requirements and 10% was discarded by the recipients. Interestingly, the organisations disposed of edible food that had reached its 'best before' date even though retailers could donate food up to one month past its 'best before' date as long as the 'use-by' date was not reached and food safety still guaranteed. Another interesting point Alexander and Smaje (2008) make is that collecting surplus food from small, local retailers is not sufficiently cost-effective and therefore, not all surplus food can be redistributed by charities. Noteworthy is as well the authors' finding that retailers noticed a positive effect from the beneficial publicity created by donating surplus food to FareShare.

The donation of surplus food to charities is criticised as it does not solve the problems at the root of food poverty and has further negative causes (Caraher and Furey 2017). Caraher and Furey (2017) argue that people in need might feel stigmatised by receiving food that was meant to be discarded and that might not meet their dietary requirements. Furthermore, the government could be discouraged from increasing social benefits, while the system of over-production is not changed and the food waste issue blurred. Discussing the commercialisation of surplus food, Caraher and Furey (2017) question whether the economic sale of surplus food could reduce the amount of surplus food available for social purposes. Considering that other scholars argue that only a fraction of the available surplus food is redistributed, this scenario seems to be unlikely (Whitehead et al. 2013; Mourad 2016). Baglioni de Pieri and Tallarico (2016) acknowledge that developed countries should not rely on surplus food as the only solution to food insecurity, but they also note that surplus food is a valuable resource for organisations tackling food poverty.

Food poverty can also motivate dumpster diving, the consumption of edible food from bins (from retailers) (Vinegar, Parker, and McCourt 2016). Vinegar Parker and McCourt (2016) describe the socio-cultural background and motivation of dumpster divers in Montreal and find that not only food insecurity but also the desire to protect the environment, to raise awareness of the food waste issue, to save money or to experience the adventure encourage surplus food recovery from bins.

With food waste and the responsibilities of different supply chain actors being a publicly discussed issue, retailers started selling some of their products that are close to turning into surplus food, such as food that is close to reach its 'best before' date or aesthetically sub-

optimal items, at a reduced price directly in the store (Aschemann-Witzel et al. 2017). Aschemann-Witzel et al. (2017) provide a good overview of the motivations and barriers for retailers to sell their surplus food in-store. Reasons for retailers to sell suboptimal items are the additional sales and the improved reputation as a retailer fighting food waste. However, additional costs are created by the personnel required to identify and check the reduced food, and because retailers do not always pay for the unsold food, meaning that the wasted surplus food does not create a financial loss. Moreover, cheap surplus food can cannibalize the sales of regular-priced products. Additionally, consumer perception of the store and the overall food quality can be affected negatively by the price-reduced suboptimal items. Therefore, retailers still waste products that have reached their 'best before' date or are slightly blemished (Stenmarck et al. 2011). Aschemann-Witzel et al. (2017) found that the in-store sale of surplus food via retailers could reduce food waste to some extent, as consumers who bought the suboptimal items planned to consume those. The authors conclude with recommendations for retailers how to increase the in-store sale of surplus food to tackle food waste. Hence, the sale of surplus food by retailers can reduce food waste.

Other studies have looked at food sharing as part of the sharing economy, an economy based on the sharing of goods, services and skills among strangers enabled by internet applications, based on for-profit or not-for-profit disruptive business models (Woskow 2014; Schor and Fitzmaurice 2015). Several food-related concepts are discussed, such as sharing restaurant space for chefs, sharing farmland for growers and sharing meals for a social purpose or swapping food, but none of the examined business models focuses on selling surplus food. Davies et al. (2017) provide an overview of food sharing initiatives and find that most food sharing happens in cities supporting activities related to food and sustainability.

Trust and food hygiene are identified as challenges in food sharing, while trust can be gained via online reputation and rating systems. Lazell (2016) investigated food sharing via a mobile phone application in a university environment and found that the lack of trust between strangers hinders food sharing, while also the university environment promotes an atmosphere of efficiency rather than sustainability. Interviewees were only confident in sharing food with people they knew, their colleagues or families, for instance (Lazell 2016). Also, Farr-Wharton, Choi and Foth (2014) researched food sharing via mobile phone applications and came to similar conclusions, suggesting that private food sharing among strangers is difficult, because of a lack of trust. The app Olio connects consumers with each other and with local businesses and enables them to share spare food and non-food

products instead of wasting them (Olio 2019). Even though Olio has over 1.4 million users in 49 countries (Olio 2019), still, food sharing is heavily influenced and limited by cultural values and anxieties, such as the fear of being criticised regarding one's purchasing decisions (not buying sophisticated products) or culinary skills (cooking boring food), and by the lack of a guarantee for food quality and safety (Evans 2014).

For the initiative Foodsharing.de, trust does not seem to be a barrier to participation (Ganglbauer et al. 2014). Foodsharing.de emerged in Germany in 2012 as an online platform enabling different supply chain actors, including retailers, farmers, consumers and other organisations, to offer and collect surplus food (Ganglbauer et al. 2014). The non-profit initiative is run by volunteers and with the spread to further European countries it counts over 200.000 users (Foodsharing.de 2019). Initially, Foodsharing received great media attention, which informed and motivated individuals to participate but also to acquire further, more influential participants, such as retailers. Participants in the sharing economy, in general, are motivated by economic, ecological or social reasons, and enjoy using the internet (Schor and Fitzmaurice 2015). Also, Foodsharing members are motivated by social and ecological values and economic needs (Ganglbauer et al. 2014). Moreover, Foodsharing participants perceive themselves and other members as part of a community and not as strangers, which could be the reasons for trust not being an issue (Ganglbauer et al. 2014). Research examining the role of trust in buying surplus food from a professional market actor has yet to be undertaken.

The commercial sale of surplus food could be classified as a sharing economy within the category of 're-circulation of goods' (Schor and Fitzmaurice 2015: 6), as the food is available as a result of overconsumption and is shared among strangers (Woskow 2014; Schor and Fitzmaurice 2015). At the same time, as market actors are involved, and the business models are not based on direct peer-to-peer relationships, it can be argued that businesses selling surplus food are not part of the sharing economy (Schor and Fitzmaurice 2015).

The growing sharing economy represents a great financial opportunity and can be a step towards sustainability as resources are shared on the one hand, but on the other hand, the volume of commerce is increased, which can contrast strongly with sustainability goals (Woskow 2014; Schor and Fitzmaurice 2015). In the case of car sharing, for example, fewer cars need to be produced if multiple consumers use the same car, but car driving might increase as consumers can now access a car more easily (Schor and Fitzmaurice 2015). However, food sharing is a different issue, as food consumption is a basic need, a necessity for survival, rather than a matter of choice. Thus, sharing food, instead of wasting

surplus at one end and buying new produce at the other end, can reduce resource consumption and foster a sustainable economy. Furthermore, the success and growth of the sharing economy indicate the potential for disruptive business models in today's society, and the acceptance of more economic, ecological and social alternatives to classic consumption (Woskow 2014; Schor and Fitzmaurice 2015).

Several scholars have examined social supermarkets, which are supermarkets that sell surplus food to food-insecure people (Schneider et al. 2015; Bromley, Rogers, and Bajzelj 2016; Saxena and Tornaghi 2018). Social supermarkets originated in France in the late 1980s and spread across Europe with the economic crisis in 2008, while the first British social supermarket opened in 2013 (Saxena and Tornaghi 2018). Usually these supermarkets exclude the general public, as they are only open to members who have proof of requiring social benefits (Schneider et al. 2015). These charitable supermarkets are mostly run by non-profit organisations, are not economically viable and rely on volunteers, meaning that they often face a lack of skills, including project management and funding, for instance (Saxena and Tornaghi 2018). However, these businesses allow people in need to keep their self-confidence by going food shopping and choosing their products themselves, whilst also actually reducing food waste (Schneider et al. 2015). Moreover, support programmes offering skills development or social support are often provided by these organisations as well (Schneider et al. 2015; Saxena and Tornaghi 2018). WRAP acknowledges that empirical research identifying the impact of these supermarkets would be of great value to these businesses (Bromley, Rogers, and Bajzelj 2016).

This study focuses on commercial businesses selling surplus food to all consumers and does not further investigate some of the above-mentioned issues scholars have discussed, such as the redistribution of surplus food via charities or communities, as they are, albeit important, separate topics. Businesses selling surplus food commercially can be separated into organisations that further process surplus food into meals, soups or jams, for instance, and companies that sell surplus food in its original form (1.3.3). Bhatt et al. (2018) researched consumer perception of the former, so-called value-added surplus products. The authors found that consumers experience difficulties in evaluating value-added surplus food as it represents a novel product group. Therefore, extrinsic cues are important in shaping consumer perception. Overall, consumers perceived value-added surplus products as being different from conventional food and similar to organic food (Bhatt et al. 2018).

Commercial businesses selling surplus food in its original form to all consumers, however, remain under-investigated. Newspapers have recognized the opening of these new

businesses selling surplus food and published favourable articles (e.g. Nair 2017), but academic research examining contextual factors supporting or hindering the sale of surplus food as well as analysing the consumer perspective has yet to be conducted. Insight into these businesses would be valuable, as it would reveal consumer perceptions of unprocessed surplus food and whether surplus food has a market value, which could change its overall perception and evaluation as waste. In addition, such insights may reveal whether those businesses can reduce food waste while being self-sufficient, thus, if they can become long-term solutions to food waste. Therefore, this study focuses on commercial businesses selling unprocessed surplus food to all consumers as potential food waste solution.

To understand the ontologies and epistemologies applied in this academic field, literature was reviewed to identify the theoretical and philosophical stances of food waste scholars. This analysis was difficult as most authors do not mention their theoretical and philosophical approach. Of the 48 articles reviewed, the majority (44%) consists of qualitative research, one third (33%) are quantitative studies and 23% applied a mixed methods approach. The only theories mentioned are social practice theory (4 articles) and grounded theory (3 articles). Philosophical considerations were assumed from the described research methods, which indicated that most researchers chose an objectivist approach (81%) and the minority applied subjectivism (19%). Hence, in the food waste literature, less attention has been given to individual perceptions. The theoretical framework and philosophy applied in this research are described in Sections 2.5 and 3.2.

This section reviewed the existing literature regarding the redistribution of surplus food. While scholars discussed the charitable redistribution of surplus food by organisations and social supermarkets, food sharing, the in-store sale of suboptimal items at reduced cost and consumer perception of value-added surplus food, the commercial sale of unprocessed surplus food to all consumers remains under-investigated. Considering the potential of businesses selling surplus food to reduce food waste, support degrowth and alleviate food poverty, research examining those businesses is of great value and can help to tackle these issues. Especially, research highlighting individual perceptions could provide new insight. The following section reviews literature discussing the various aspects of businesses selling surplus food: their social enterprise business model, their disruptive nature and their capability to enable sustainable consumption.

2.2.4 The different aspects of commercial businesses selling surplus food

While commercial businesses selling surplus food have not been empirically investigated yet, their different facets have been researched. Businesses selling surplus food commercially are social enterprises operating in the retail sector. Literature regarding the challenges and opportunities social enterprises experience is presented in the following. Furthermore, businesses selling surplus food are disruptive and therefore, bear the potential to create behaviour change, as explained in this section. Moreover, via selling surplus food the businesses provide an opportunity for sustainable consumption. Literature discussing sustainable consumption and the factors that might affect the businesses' success to acquire customers is reviewed in the last part of this section.

Commercial businesses selling surplus food very cheaply to consumers are social enterprises as they address social and environmental problems with their operations while generating revenues that benefit their social mission (Medina Munro and Belanger 2017). These businesses tackle the issues of food waste and food poverty on the one hand but also aim to be profitable businesses on the other hand (e.g. Nifties 2017; Scalable Impact 2020; DanChurchAid 2020). Pursuing a social and an economic mission simultaneously is a challenge, as the social and the economic value can each be sacrificed for the achievement of the other (Cornelius et al. 2008; Doherty, Haugh, and Lyon 2014). Otherwise, the social mission of social enterprises can attract and bind customers, thus benefitting the economic mission (Moizer and Tracey 2010). However, the opposite could also be true, if consumers associate buying surplus food with poverty and perceive the social mission as stigma, similar to users of food banks who feel stigmatised by using food banks (Garthwaite 2016). Moreover, the social mission can be used to build alliances with organisations following similar goals, which is good for the business development of social enterprises, as resources can be shared (Bloom and Chatterji 2009; Sakarya et al. 2012). Social enterprises are often resource-constrained and have to attract and retain volunteers, which causes a shortage of skills (Doherty, Haugh, and Lyon 2014). Hence, sharing resources can enable social enterprises to innovate and to achieve financial viability, which both are key success factors for those organisations (Medina Munro and Belanger 2017).

As businesses selling surplus food commercially are social enterprises in the retail sector, the key success factors for retail (product offer, price, layout location, atmosphere, innovation) (Kati 2010; Grewal et al. 2010; Cox 2012) might also be relevant for their development. Whether these businesses can achieve profitability and become long-term

solutions to food waste depends on their reaction towards the challenges and opportunities that are common to social enterprises and retailers, and further unknown ones. Considering that businesses selling surplus food commercially have not yet been empirically investigated, insight regarding the challenges and successes those businesses experience has yet to be gained.

Moreover, businesses selling surplus food are interventions that disrupt automatic habits, and such interventions have the capability to create behaviour change (Verplanken and Wood 2006). Habits are recurring automated behaviours that are associated with certain circumstances, such as the environment, time of day, personal mood or other people (Verplanken and Wood 2006). If the circumstances related to a certain behaviour are changing, habits can be disrupted more easily (Verplanken and Wood 2006). Businesses selling surplus food provide a new shopping context and encourage consumers to reduce waste and the consumption of new products by default. Such upstream interventions can foster behaviour change, especially combined with downstream interventions, that is information about the businesses or the impact of food waste and overconsumption (Verplanken and Wood 2006; Carrigan, Moraes, and Leek 2011). Information campaigns are most effective if they target consumers experiencing a change in their life, as this is the time when habits are most vulnerable to disruption (Verplanken and Wood 2006). Thus, businesses selling surplus food have the potential to change consumer behaviour towards buying surplus food instead of regular products. However, research investigating whether consumers actually change their shopping behaviour and buy surplus food from those businesses and which motivations and barriers consumers are facing in adopting this new behaviour yet has to be undertaken.

On the one hand, these business models represent win-win situations (Fisher and Ury 1991) for all participants. While sustainable consumption has gained importance within the last few years, as the spread of Alternative Food Networks and the growing market share of organic and fair-trade products show, price, as the decisive purchasing factor, often creates a barrier to sustainable consumption (Kneafsey et al. 2008; Szmigin, Carrigan, and McEachern 2009; Brown, Dury, and Holdsworth 2009; Young et al. 2010; McDonald et al. 2015). If buying low-cost surplus food is perceived as purchasing sustainable food, it can satisfy the altruistic need to do good (Kneafsey et al. 2008) while turning former financial restrictions (Kneafsey et al. 2013) into future profit. Furthermore, a consumer survey in Spain showed that the majority of participants would be willing to buy discounted surplus food (HLPE 2014). On the other hand, consumers seek convenience in purchasing decisions, which may present a barrier to the aforementioned business models, if availability

is limited and multiple shops have to be visited to collect all items needed (Szmigin, Carrigan, and McEachern 2009). Considering Schwartz's (2004) work on choice however, less choice could also increase the probability of a purchase. A lack of trust and poor food literacy as well as misperceptions of 'best before' dates (Farr-Wharton, Choi, and Foth 2014; Thorsøe and Kjeldsen 2016; European Commission 2018) are further obstacles that initiatives selling surplus food need to overcome.

Another critical success factor for the commercial sale of surplus food is consumers' perception of the surplus food. Consumers might cherish it as a cheap sustainable alternative food source or regard it as valueless waste or as any of the many possibilities in between those extremes. Sidali, Spiller and von Meyer-Höfer (2016) found that consumers expect sustainable food to be produced and processed according to ethical and environmental considerations whilst meeting the basic expectation of being safe, healthy and fresh and therefore being in line with a trendy healthy lifestyle. Hence, it is questionable if consumers consider surplus food to be sustainable, or even just safe, fresh and healthy. Understanding consumer perception of surplus food is necessary to evaluate and enhance the potential of businesses selling surplus food to actually reduce food waste. Consequently, research providing those insights is needed.

This section presented the literature discussing some of the aspects of businesses selling surplus food while revealing gaps in knowledge. The barriers and drivers businesses experience in selling surplus food as well as the factors influencing consumer engagement with those businesses yet have to be examined. This knowledge is necessary to understand the capability of businesses selling surplus food to reduce food waste sustainably. Literature regarding consumer behaviour is discussed in the next section.

2.3 The complexity of consumer behaviour

Consumer behaviour plays an important role in the food waste issue. As described in Chapter One (see 1.3.2) consumer behaviour affects food waste at the household, the retail and the hospitality level. Furthermore, potential solutions to food waste and their success depend on consumer behaviour. Therefore, this section reviews the literature regarding this important topic.

Various scholars have observed that shopping and food consumption are social acts influenced by the culture, social norms, identity and lifestyle one relates to (Miller et al. 1998; Dant 1999; Southerton 2003; Evans 2011; Southerton, Díaz-Méndez, and Warde 2011; Evans and Miele 2012; Carrigan 2017). Dant (1999) and Miller et al. (1998) both highlight the influence of personal identity on shopping behaviour. Consumers shop at places they identify with and select goods according to their identity, lifestyle and social context; goods obtain social meaning to the consumer (Miller et al. 1998; Dant 1999). Soron (2010) finds that consumption is used to express self-identity. Consumers buy things that are meaningful to them, that are in line with their perception of themselves, and they create their self-identity with their purchasing decisions. He points out that therefore, marketing focusses on meaning and symbolises products with brands promising certain lifestyles and identities to consumers (Soron 2010).

While shopping is a behaviour driven by one's internal self-identity, scholars agree that it is affected by further (external) actors (Miller et al. 1998; Kharuhayothin and Kerrane 2018). Shopping and food consumption practices are learnt from parents and additionally can be influenced by others within one's close social network, such as one's partner (Miller et al. 1998; Kharuhayothin and Kerrane 2018). Moreover, media also have an impact on shopping practices. Evans (2014) suggests that the public definition of a healthy diet, as communicated via TV-shows and the internet for instance, creates social expectations and influences shopping behaviour. In particular, social media connects millions of users and enables peer communication to influence consumption behaviour, for example via Instagram influencers who promote a certain lifestyle or brand by posting appealing pictures with short messages (Wang, Yu, and Wei 2012; Nandagiri and Philip 2018).

Food consumption, specifically, is embedded in the social context of everyday life, including factors such as work, family, time and health, as highlighted by Evans (2011). Southerton (2003) shows how time affects consumption practices. Social responsibilities related to work, leisure, family and other social networks take time. Consumers often perceive a

shortage of time, trying to allocate lots of different practices into a given time frame, creating a certain lifestyle with suitable consumption practices (Southerton 2003). The difference in food consumption in Spain and UK, for example, is related to fewer formally working women in Spain, meaning that in Spain a cooked lunch is often eaten at home together as a family, while in the UK people tend to eat at their workplace (Southerton, Díaz-Méndez, and Warde 2011). The work of a number of scholars supports this relationship between time and consumption practices, revealing that due to busy lifestyles, convenience meals are common in the UK and coordinating a family meal is considered to be difficult (Warde 1999; Carrigan, Szmigin, and Leek 2006; Jackson and Viehoff 2016). Kneafsey et al. (2013) recognize further social contextual factors affecting food consumption such as the economic situation, local food prices, personal income, education and skills.

In line with the research mentioned above, Jackson (2005) explains that consumer behaviour is unpredictable and complex because consumers experience consumption as part of their socio-cultural life, deeply embedded in habits and daily routines, strongly connected to values and beliefs. Several researchers agree that, due to this complexity, even consumers with sustainable attitudes struggle to align their purchasing decisions to their ethical values (Boulstridge and Carrigan 2000; Szmigin, Carrigan, and McEachern 2009; Caruana, Carrington, and Chatzidakis 2016). The so-called attitude-behaviour gap has been discussed by various scholars, who disagree about its cause but acknowledge its existence (Boulstridge and Carrigan 2000; Oates and McDonald 2014; Carrington, Neville, and Whitwell 2014; Carrington, Zwick, and Neville 2015; Shaw, McMaster, and Newholm 2016; Caruana, Carrington, and Chatzidakis 2016).

The different academic viewpoints regarding the attitude-behaviour gap can be divided into two sides, with one arguing that methodological research errors are the explanation for the gap and the other suggesting that the incongruity between intention and behaviour is caused by the assumption that consumers are independent rational actors, detached from a socio-cultural context (Caruana, Carrington, and Chatzidakis 2016; Shaw, McMaster, and Newholm 2016). Shaw, McMaster and Newholm (2016) explain the attitude-behaviour gap with empirical flaws based on biases arising for various reasons, such as abstraction of the survey situation from reality, the urge to give socially desirable answers, or sampling practices where more ethical consumers form the majority of participants. Jackson (2005), Caruana, Carrington and Chatzidakis (2016) argue that the assumption that consumers are rational and independent (and hence act according to their intention) is misleading as humans are part of a social construct, influenced by their culture, social environment, situational factors and habits (Jackson 2005; Caruana, Carrington, and Chatzidakis 2016).

Summarising the literature, it can be stated that contextual factors influence consumer behaviour, meaning that while consumers might have a pro-environmental attitude, their purchasing decisions are biased for various reasons.

Governments and retailers tend to assign responsibility for creating positive impact to the consumers and their purchasing power, while consumers believe that the government is responsible for changes leading towards a better future (Kneafsey et al. 2013). Kneafsey et al. (2013) investigate the neoliberal assumption that consumers can drive sustainability with their purchasing decisions and question the power and responsibility assigned to the consumer. Consumers exercise purchasing power which can create a positive impact on sustainability if consumers as a collective buy sustainably produced products (White, Hardisty, and Habib 2019). Some consumers, mostly participants of alternative food networks and food sustainability movements, consider themselves as 'ecological citizens' (Kneafsey et al. 2013: 3); they feel empowered to use their purchasing power as a political tool, feeling the obligation to reduce their ecological footprint and the responsibility to consume according to their values and political agenda.

However, most consumers feel disempowered, they do not perceive themselves as having control over the food market and its processes (Kneafsey et al. 2013). Low-income households, in particular, cannot afford to align their shopping decisions with their attitudes, meaning that even if consumers aspire to buying 'green' products they find unsustainably produced food to be more affordable, available and promoted. Disbelief in their purchasing power and time constraints, as well as a lack of education, hinder consumers from thinking more widely about the ethics of their shopping decisions (Kneafsey et al. 2013). Furthermore, their cultural values and other social obligations might dictate a behaviour that is opposed to the desired one. McDonald et al. (2015) and Young et al. (2010) support this stance, arguing that consumers' purchasing decisions are driven by price, availability, time constraints and cultural values, whilst the more sustainable option often interferes with those factors as it is more expensive or time-consuming, for instance.

The question arises whether consumers who feel empowered, and consume in a way supporting sustainability, do so because they feel empowered, or if their participation in sustainable food consumption empowers them (Kneafsey et al. 2013). Affordability and the sense of empowerment affect consumption patterns, which implies that if the sustainable product was within their budget, consumers might purchase it and possibly feel empowered and believe they can contribute to sustainability with their purchasing decisions, which could motivate further sustainable shopping choices. This theory is supported by Carrigan's

(2017) finding that consumers want to think that they can create impact with their choices. Consequently, the availability of affordable sustainable products could encourage and advance sustainable consumption.

As discussed earlier, the biggest problem of consumption is overconsumption, which causes resource depletion and waste (Lorek and Fuchs 2013; Evans 2014). Many scholars agree that price is one of the most decisive purchasing factors and that cheap prices motivate overconsumption, as discounts on bigger packages and two-for-one promotions influence consumers to buy more food than they need (Graham-Rowe, Jessop, and Sparks 2014; European Commission 2015; Visschers, Wickli, and Siegrist 2016). Moreover, Hebrok and Boks (2017) found that consumers tend to value cheaper food less, and put less effort into its preservation, increasing the likelihood of the discounted food being wasted.

Several academics explain that time and energy constraints lead to overconsumption, causing consumers to make a single shopping trip to purchase food for multiple days, not being fully aware of their stock of food at home or not anticipating what their consumption levels might be (Carrigan, Szmigin, and Leek 2006; Hantula 2012; Evans 2014). Purchasing too much can be cheaper and often is more convenient than investing the time and effort to either plan better or shop more frequently (Graham-Rowe, Jessop, and Sparks 2014; Porpino, Parente, and Wansink 2015).

Also, social reasons, such as prevailing social values to be a good food provider (Murcott 1983; Moio, Arnould, and Price 2004), the aim to avoid negative experiences and a lack of social pressure to reduce food waste, lead to overconsumption (Graham-Rowe, Jessop, and Sparks 2014). Evans (2014) found that in the case of overconsumption the newer goods replace items that have been purchased before, turning those into surplus that disturb the household order and are suspected to pollute the fresher products. Thus, the perception of these previously purchased items changes for the worse, from being edible food supplies initially to being burdensome surplus food and finally disgusting useless waste, a problem that is resolved via disposal (Hawkins 2006; Evans 2014).

Nevertheless, consumers are motivated to not waste food, mainly for economic reasons, to not squander money, and by moral considerations, they feel the urge to do right (Graham-Rowe, Jessop, and Sparks 2014). Environmental concerns are found to be typically less important, with food waste often not being seen as a cause of environmental harm (Stancu, Haugaard, and Lähteenmäki 2016; Visschers, Wickli, and Siegrist 2016). Researchers also

ascertain that consumers experience an emotional conflict between the negative feeling of guilt when wasting food and the urge to provide healthy and fresh food in sufficient amounts, which drives food waste (Watson and Meah 2013; Graham-Rowe, Jessop, and Sparks 2014). Evans (2014) describes how cultural standards and social expectations to eat a healthy diet of varied fresh food combined with restrictions, including work schedules, personal tastes of household members and unplanned disruptions of the daily routine, cause surplus food to turn into food waste, worrying consumers.

Yet, the literature clearly shows that, despite their motivations, consumers waste considerable amounts of food. Western consumers consider wasting food as an unavoidable normal phenomenon, and they also (mistakenly) believe that they dispose of little to no food, even though European and North American households are found to discard the most, up to 115 kg per person per year (Graham-Rowe, Jessop, and Sparks 2014; Visschers, Wickli, and Siegrist 2016). Overall, Europe generates the second most food waste after North America and Oceania, with the most food waste in Europe happening in the UK and average European amounts in Denmark (FAO, 2011; Halloran and Magid, 2014; Vanham, Bouraoui, Leip, Grizzetti, and Bidoglio, 2015).

While European consumers share the propensity for overconsumption, their cultures and values differ among the nations considerably (Brunsø, Grunert, and Bredahl 1996; Bilka et al. 2016). Research has shown that cultural values are developed distinctively in different countries and that those values influence sustainability (Parboteeah, Addae, and Cullen 2012). Also, macro and structural factors, especially political and market factors, were found to influence sustainable consumption and vary from nation to nation (Thøgersen 2010). Regulations, infrastructure, distribution channels, disposable income, food culture, political support and marketing efforts are factors influencing supply and demand and shaping national consumption patterns (Thøgersen 2010).

The literature indicates that consumer behaviour is complex and elusive, influenced by cultural values, social norms, daily operations and economic conditions (Evans 2014; Carrigan 2017). Insecurity regarding food safety or the availability of even fresher, just purchased food, can cause people to discard edible food and purchase products with a long remaining shelf life; a lack of cooking skills, eating habits, personal taste, social norms, such as the desire to provide fresh food, or an unexpected event are all possible factors preventing consumers from using and instead discarding leftovers; time constraints due to social obligations or employment lead to fewer, less informed but routinized shopping trips and thus overconsumption, whereas economic concerns might result in taking promotional

offers and purchasing more food than needed (Evans 2011; Watson and Meah 2013; Mena, Adenso-Diaz, and Yurt 2011; Graham-Rowe, Jessop, and Sparks 2014; Visschers, Wickli, and Siegrist 2016).

It is crucial to better understand consumer behaviour and the contextual factors shaping it, as they directly affect food waste and the success of concepts to reduce food waste. Carrigan (2017) has noted a lack of research providing insight into the challenges consumers experience with ethical consumption initiatives, whilst this knowledge is necessary to enhance innovations driving sustainability. Understanding consumer behaviour towards a certain approach fighting food waste, identifying the contextual factors creating barriers or motivations for consumers to adopt that approach, that is to take action which reduces food waste, is essential to develop such concepts successfully, to achieve a reduction in food waste.

2.4 Gaps in knowledge

Figure 2.1 illustrates the gaps in knowledge justifying this research. Businesses selling surplus food represent a potential market-based solution to food waste while realising a degrowth strategy based on a circular economy model. These businesses could alleviate the food waste issue and foster sustainable development if consumers purchase surplus food from those businesses instead of regular food (indicated by the overlapping area of the two circles). However, challenges and successes the businesses experience in selling surplus food (the green circle), as well as factors influencing consumers to engage or not engage with those businesses (the blue circle), remain unknown. Further questions arising are whether food waste actually is reduced and how businesses selling surplus food commercially can be long-term solutions to food waste. Therefore, this study investigates the factors affecting the sale of surplus food to find out how businesses selling surplus food commercially can be adopted and reduce food waste. The next section describes the theory of diffusion of innovation (TODOI), which explains the factors that influence adoption of an innovation.

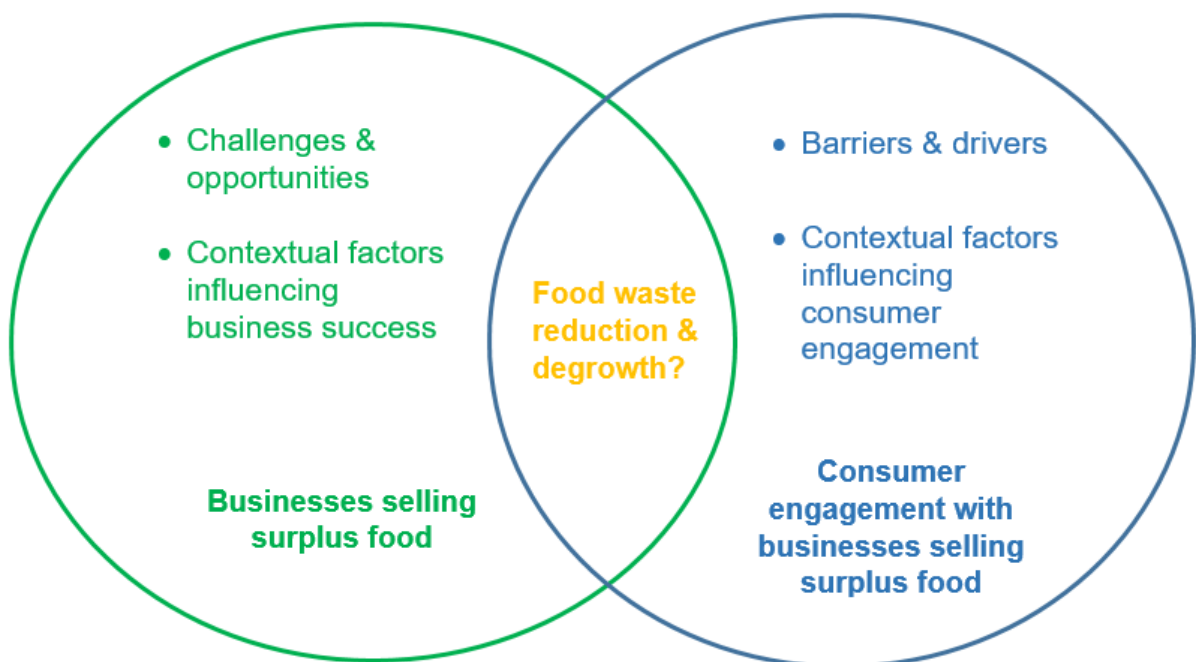


Figure 2.1: Gaps in knowledge regarding businesses selling surplus food as a market-based solution to food waste

2.5 Theory of diffusion of innovation as inspiration for the theoretical framework

2.5.1 Diffusion of innovations explained by the theory of diffusion of innovation

The TODOI inspires the theoretical framework for this study. The TODOI explains the factors that affect the adoption or rejection of innovations. Businesses selling surplus food are innovations, as selling surplus food is a new idea, while 'diffusion is the process by which an innovation is communicated through certain channels over time among members of a social system' (Rogers 1983: 5). Diffusion theory describes how social interventions (such as businesses selling surplus food and related new behaviours) can create cultural change when they spread (e.g. from catalytic individuals) and are adopted by the majority of society (Fell et al. 2009; Carrigan, Moraes, and Leek 2011; Sriwannawit and Sandström 2014). Consumers confronted with an innovation can decide to adopt or reject the new idea (Rogers 2003). This research investigates why consumers adopt or reject the innovation of buying surplus food from certain businesses and therefore draws upon the TODOI.

According to the theory, the success factors for adoption are a strong network, the benefit of the innovation and its suitability in the existing social system (Fell et al. 2009; Goldsmith 2012). A challenge for adoption is that innovations carry the risk of uncertainty, as advantages and disadvantages are unknown. Information can reduce that risk while the experience of individuals that have already adopted the innovation is especially powerful in influencing potential adopters (Rogers 1983; 2003). These subjective evaluations travel through interpersonal networks (Rogers 1983). Closely related individuals with strong network links have a higher chance of communicating with and influencing each other, but often these people are quite similar (homophilious), and therefore they rarely have a different status regarding an innovation (Rogers 1983). More new and different information is exchanged by individuals that are different from each other and do not have much in common (heterophilious) and subsequently have weak network ties, meaning that communication is less likely to happen (Rogers 1983). It is essential to understand the communication network of the social system receiving the innovation in order to investigate the diffusion of the innovation.

The communication structure of a social system is formed by the social structure, the pattern of relationships among the members of the social system (Robertson 1967; Rogers 2003).

Individuals forming the centre of interpersonal communication networks are often opinion leaders with the ability to influence others due to their social status and competence (Fell et al. 2009; Carrigan, Moraes, and Leek 2011). Opinion leaders in market places are referred to as market mavens (Goldsmith 2012). Change agents, professionals who aim to influence the innovation-decision in a certain way, use opinion leaders to influence members of the social system (Rogers 2003). Today, communication is facilitated by social media, enabling peer communication to influence consumer decisions, with Instagram influencers serving as modern opinion leaders (Wang, Yu, and Wei 2012; Nandagiri and Philip 2018).

Innovation decisions can be made by the individual, a collective or an authority and have consequences that can be desirable or undesirable, direct or indirect, anticipated or unanticipated (Rogers 2003). The decision-making process resulting in adoption or rejection of the innovation starts with knowledge acquisition, followed by persuasion leading to the decision, its implementation and confirmation (Rogers 2003). Several attributes of the innovation affect the probability of its adoption such as the relative advantage, the perceived benefit of the innovation and its compatibility with the beliefs, experiences and needs of the potential adopters (Rogers 2003). Experts on consumer behaviour and phenomenologists argue that people perceive the world with their senses, which are shaped by their social circumstances and everyday experiences, and thus create their own, different realities (Evans and Miele 2012; Horrigan-Kelly, Millar, and Dowling 2016). Hence, the perceived advantage of a new product and its acceptance vary from person to person (Rogers 2003). Adoption is facilitated if the innovation is understood easily, if it can be trialled and if results of adoption can be observed (Sanson-Fisher 2004). Dissatisfaction or other reasons can cause discontinuance, the rejection of a previously adopted innovation (Rogers 2003). In a social system, members adopt innovations at different rates depending on the type of innovation and the nature of the social system (Rogers 2003). A critical threshold indicates if an innovation will dominate or fail (Goldsmith 2012).

The diffusion of an innovation is shaped by the features of the innovation, the characteristics of the decision-makers and the attributes of the environmental context (Greenhalgh et al. 2007; Goldsmith 2012). Culture traits, such as Hofstede's cultural dimensions regarding the masculinity or uncertainty avoidance of a country, directly affect the adoption and subsequently diffusion of innovations (Goldsmith 2012; Hofstede Insights 2019) (see 4.2 for more information). Doubt that the innovation will fulfil its promise, strong personal habits and positive perceptions of the status quo or resistance to learning about the innovation are further factors influencing diffusion (Goldsmith 2012). Hence, many complex and cultural

elements determine if the disruptive business models selling surplus food will create behaviour change, if consumers adopt or reject this innovation.

The TODOI is often applied to understand the acceptance of new technologies and the diffusion of certain products (Sriwannawit and Sandström 2014). As opposed to many other new products that appear on the market, surplus food might be considered less attractive, and serving the social good rather than the individual good. Nevertheless, the new product surplus food, or the new behaviour of buying surplus food, can be treated as an innovation, and therefore the TODOI promises to be a useful approach to understand and predict consumer behaviour in this context.

Also, other studies have applied the TODOI to understand the factors supporting or hindering adoption of an innovation driving sustainability, benefitting the social rather than the individual good. This understanding is necessary to promote and scale such initiatives. Truong's (2014) review of social marketing studies (which investigated how behaviour can be enhanced for the social good via marketing tools) between 1998 and 2012, found that the TODOI was among the six most frequently used theories. The UK Department for Environment, Food and Rural Affairs (DEFRA) has applied the TODOI to investigate how environmental behaviours spread in society, particularly focusing on the role of catalytic individuals (opinion leaders, mavens) (Fell et al. 2009). Carrigan, Moraes and Leek (2011) used the TODOI to understand the ban on free plastic bags in the UK, which was initiated by an environmental activist, who was supported by a few shops, and eventually influenced the whole country. Both studies conclude that catalytic individuals spread environmentalist behaviour within their network, with the success depending on the same factors Rogers outlines, namely the characteristics of the innovation, the environment and the society it is introduced into (Rogers 2003; Fell et al. 2009; Carrigan, Moraes, and Leek 2011). Nevertheless, the TODOI has not been applied in food waste research.

It could also be argued that business models selling surplus food are a form of product-service systems (PSSs) (Tukker and Tischner 2006). The PSS approach puts the consumer need at the centre of product development and then aims for designing a product meeting that need in a sustainable way. This method allows the business to be more flexible and to add value via innovative product design. Forms of PSSs are either adding a service to the product, which can increase its lifespan, or augmenting the use of a product (e.g. via sharing) or creating a completely new product. Businesses selling surplus food augment and intensify the use of surplus food via 'sharing' it with further consumers and thus could be defined as use-oriented PSS. PSSs are innovations, and as such they often develop in

protected niches but rarely scale successfully and more frequently disappear. A critical success factor for positive development of PSSs is the environment they operate in, which is formed by the predominant infrastructure and socio-cultural values and constructs. In order to thrive, the innovation needs to suit its specific context. What Tukker and Tischner (2006) outline can be traced back to the principles of the TODOI. The authors conclude that a PSS can be a step towards sustainability, but that further research is needed to support successful development. Tukker and Tischner (2006) note a lack of explanatory studies, examining the potential success of PSSs regarding consumer acceptance. The TODOI is suitable to understand and enhance the development of PSSs, as the factors affecting acceptance of a PSS are the same factors determining the acceptance of innovations as outlined by the theory. Consequently, the TODOI is useful to understand the sale of surplus food, an innovation that can be defined as a PSS.

Another theory that might be appropriate to understanding consumer behaviour and hence, the acceptance or rejection of the businesses selling surplus food, is social practice theory. Scholars researching sustainable consumption recommend the application of social practice theory to avoid the pitfalls of focussing on consumer attitudes and not taking into account the influence daily practices have on consumer behaviour (Spaargaren 2011; Hargreaves 2011). Practice theory approaches focus on the practices that form consumers' lives, not on the individual (Spaargaren 2011). While the practices that influence shopping behaviour are relevant to understanding why consumers might engage with the businesses selling surplus food, they only provide insight into a part of the phenomenon of buying surplus food from those businesses.

Moreover, practice theory has been more readily applied to study consumer-based practices, rather than business-based phenomena. The TODOI motivates the investigation of the innovation (the businesses), the potential adopters (the consumers) and the social context as social factors that influence the consumption of new products or services (Goldsmith 2012). Thus, consumers' shopping habits and lifestyles are investigated, but also their attitudes as well as the challenges the businesses experience are examined. Furthermore, the businesses selling surplus food form an innovation, hence the TODOI is a suitable approach for this research. The TODOI provides understanding that can be useful to answer the research question. In addition, social practice theory has been applied in food waste research (e.g. Evans 2011; 2014; Porpino, Parente, and Wansink 2015; Lazell 2016; Hebrok and Heidenstrøm 2019), while the application of the TODOI represents a novelty in food waste research.

When investigating a new phenomenon, such as the sale of surplus food, grounded theory represents a further suitable approach. The aim of this research was to understand the new phenomenon of businesses selling surplus food commercially and to find out how these businesses can be adopted by consumers and reduce food waste. Grounded theory is applied when studying a phenomenon without prior assumptions, enabling theory to be derived from the data rather than influencing data analysis through the application of pre-existing theories (Glaser 2002). In this study, the objective was to collect and analyse data with an open mind, free from predefined assumptions, which conforms with a grounded theory approach (more detail on data collection and data analysis in Chapter 4) (Gioia, Corley, and Hamilton 2013). However, a second analysis stage was planned to investigate the defined codes and categories in the light of theory. Looking at the analysed data through the lens of the TODOI was expected to facilitate the recognition of patterns in the data without affecting its content. Hence, rich new insights were likely to be gained with the application of the TODOI, a benefit usually ascribed to grounded theory (Gioia, Corley, and Hamilton 2013). Moreover, in contrast to grounded theory (e.g. Graham-Rowe, Jessop, and Sparks 2014; Papargyropoulou et al. 2014; 2016), the TODOI has not been applied in food waste research yet, meaning that its utilisation in a new context represents a potential theoretical contribution.

2.5.2 Application of the theory of diffusion of innovation to investigate businesses selling surplus food

The businesses selling surplus food were innovations about which not much empirical data existed. A conceptual framework considering the acceptance and thus the scalability of these businesses as well as their success in actually reducing food waste had yet to be developed. A gap and need for academic research focussing on consumer acceptance of innovations that can drive sustainability underpinned the foundation for this study (Tukker and Tischner 2006; Lim 2017; Carrigan 2017). Therefore, this research investigated the research question: How can businesses selling surplus food commercially be adopted by consumers and reduce food waste in Denmark and the UK? To provide an answer, the researcher needed to gain a better understanding of the contexts these businesses operated in and to grasp the different facets of the phenomenon. Two business models were selected in two countries (see 3.3, 4.2) with the aim of understanding how consumers perceive – both negatively and positively - these potential food waste solutions and to

identify contextual factors that hinder or support these businesses in selling surplus food (and reducing food waste).

As the businesses selling surplus food could be treated as innovations, the TODOI was expected to be useful to understand the diffusion of these initiatives. The factors that influence consumer behaviour to buy or not to buy surplus food are the factors that determine if the innovation of selling surplus food is rejected or adopted. Moreover, the TODOI encourages the investigation of the different perspectives of an innovation. The potential adopters and their social network as well as the innovation and its context need to be examined to understand the diffusion of an innovation (Goldsmith 2012). Hence, the TODOI was applied in this study to support the understanding of the acceptance or rejection of the case businesses by consumers and the businesses' potential to reduce food waste sustainably.

Factors determining the adoption or rejection of an innovation are the characteristics of the innovation, the attitudes of the recipients and the socio-cultural environment of the innovation (Rogers 2003). The four research objectives were inspired by the gaps in knowledge (2.4) and cohered with the TODOI (see 1.4 for research objectives). The first objective of this research was to understand consumer engagement with the businesses selling surplus food, to reveal individual perceptions and attitudes informing this choice. The second research objective was to explore the challenges the businesses face, the contextual factors that benefit or hinder the sale of surplus food and consequently adoption. Further knowledge regarding these businesses that tackle food waste innovatively was needed to gain insight into the nature of how food waste is reduced and whether the consumption of regular food is discouraged. Hence, the third research objective was to identify the successes these food surplus models achieve with regards to food waste reduction and degrowth. This posed the following questions: Do consumers waste less, do they substitute 'fresh' food with surplus food? What is the food waste behaviour and what is the food waste policy of the businesses selling surplus food? The answers to these questions determine if the businesses can reduce food waste and support degrowth, and hence if adoption causes the desirable outcome. To analyse the economic viability of the surplus food businesses was the fourth research objective. Their financial status, in particular whether the businesses are profitable or loss-making, indicates if these can be self-sustained long-term solutions to food waste.

The application of a theory can be helpful to create successful behaviour change initiatives and to evaluate and compare those for the generation of further campaigns (Truong 2014).

This section proposed that diffusion of innovation is useful to understand an innovation's potential and to enhance its development to enable its acceptance by a majority of the society. The TODOI has the potential to provide valuable insight into how the businesses selling surplus food can be modified to enhance their chances of adoption.

2.6 Summary

The aim of this research was to investigate commercial businesses selling surplus food to consumers as a potential solution to food waste. This chapter reviewed literature discussing different concepts for food waste reduction. Regulations and legislation are not sufficiently binding to reduce food waste effectively, while the circular economy represents a model enabling food waste reduction via the re-usage of surplus food as resource. Businesses selling surplus food are based on a circular economy model as they re-use food that was considered waste before. Moreover, businesses selling surplus food have the potential to support degrowth, if the purchase of surplus food substitutes regular food purchases. However, research investigating if businesses selling surplus food actually reduce food waste and support degrowth has yet to be undertaken. While scholars have examined the redistribution of surplus food via charities, communities and companies that further process surplus food, businesses that sell surplus food commercially in its original form remain under-investigated.

Furthermore, literature regarding consumer behaviour was analysed, revealing that consumer behaviour is complex and influenced by various contextual factors. To understand the factors influencing consumer engagement with businesses selling surplus food is essential to identify if those businesses can acquire customers and hence reduce food waste.

Research has tackled various aspects affecting businesses selling surplus food, such as the challenges and drivers social enterprises experience, the capability of disruptive business models to change behaviours and consumers' motivations and barriers to sustainable consumption. Nevertheless, consumer perception of businesses selling surplus food, the factors motivating or hindering engagement with those businesses and the successes and challenges these businesses experience have not been investigated yet. Considering that the commercial sale of surplus food is a promising opportunity to tackle food waste, resource depletion and food poverty, its potential needs to be further examined given the lack of empirical investigation so far (illustrated by Figure 2.1). This research aims to fill this gap and draws upon the TODOI to understand the factors affecting the diffusion of businesses selling surplus food commercially. The research approach is outlined in the next chapter.

**Chapter 3: Research approach to examine
consumers' adoption of businesses selling surplus
food**

3.1 Introduction

This chapter outlines the methodological skeleton of this research and describes the chosen research approach. Firstly, philosophical considerations are presented, explaining that phenomenology was applied to acknowledge different perceptions, which are influenced by contextual factors, as realities.

Case study research is the chosen methodology for this study, as it enables the holistic in-depth investigation of real world phenomena such as businesses selling surplus food. Furthermore, case study research suits the philosophical and theoretical approach of this study, acknowledging the importance of contextual factors in understanding a certain phenomenon. The design is exploratory, as not much theoretical knowledge exists about businesses selling surplus food. Moreover, a comparative cross-cultural case study design has been selected with three cases in two countries (two different business models in two countries each). For reasons of confidentiality, names of businesses that are not the case businesses and names of all persons that participated in this research are fictional.

Section 3.4 explains the steps taken to ensure the quality of this research. Thorough documentation, triangulation and critical reflexivity were applied to create construct validity, credibility, dependability and transferability. The chapter ends with a summary including an illustration of the research approach. The practical application of the methods described in this chapter is outlined in the following chapter.

3.2 Philosophical considerations: Using phenomenology to acknowledge individual perceptions as realities

This study is based on the researcher's beliefs and assumptions regarding the nature of reality (ontology) and the constitution of knowledge (epistemology) (Saunders, Lewis, and Thornhill 2016). In the following section, the philosophical framework of the research is elucidated.

The philosophical approach of this research takes the perspective that reality is constructed actively by individuals. Social phenomena are understood as social constructs; buying surplus food is perceived to be a consequence of social influences, such as cultural norms, individual circumstances, habits and values. Hence the ontology of this research is social constructionism, a branch of subjectivism (Creswell 2007).

Subjectivism argues that various realities are created through the perceptions and consequential actions of humans. Nominalism is the most extreme version of subjectivism, rejecting the idea that the social world and individual perceptions are based on an underlying reality (Saunders, Lewis, and Thornhill 2016; Brown and Baker 2007). Social constructionism is a milder form of subjectivism and 'puts forward that reality is constructed through social interaction in which social actors create partially shared meanings and realities' (Saunders, Lewis, and Thornhill 2016: 130). Created by active social processes, social entities are constantly evolving, which means that in order to understand a social phenomenon, its history, geography and socio-cultural context have to be studied (Burr 2015).

The other end of the spectrum is formed by objectivism, the ontological assumption that one universal reality exists independently from human action or thought, which (ontologically) is linked to realism and applies to the philosophy of positivism (Carson et al. 2001; Bryman and Bell 2011). As opposed to the objectivist viewpoint, this research is based on the assumption that several realities exist which are socially constructed: surplus food is perceived differently by different individuals - some people may consider it to be waste whilst others see it as valuable food. People with different backgrounds, experiences and values interpret the same items distinctively, and all those diverging realities are acknowledged as being valid.

This study incorporated the interpretive paradigm, as one aim was to understand how consumers perceive surplus food and which experiences influenced their interpretation of surplus food (Creswell 2007). This approach assumes that humans create distinct meanings of the world, based on their different cultural backgrounds and different experiences (Saunders, Lewis, and Thornhill 2016). As a result, multiple realities and understandings exist, which have to be explored in order to understand human behaviour (Bryman and Bell 2011; Saunders, Lewis, and Thornhill 2016). As opposed to positivism, the epistemology of interpretivism avoids generalisations and concentrates on individual experiences, circumstances and meanings to reveal complex social constructs and to gain a new understanding of social behaviour (Saunders, Lewis, and Thornhill 2016). Instead of explaining a certain behaviour, which would be a positivist approach, the aim of this research was to understand the behaviour (Bryman and Bell 2011).

The main objective of this research was to explore the phenomenon represented by businesses selling surplus food commercially. According to phenomenology, a strand of interpretivism (Saunders, Lewis, and Thornhill 2016), the understanding of a phenomenon varies individually, and its perception is influenced by one's experiences (Rosenthal and Bourgeois, 1980). Those individual experiences are interpreted in certain ways; people create meanings on which they base their actions (Bryman and Bell 2011; Saunders, Lewis and Thornhill 2016). Phenomenology is interested in those meanings and therefore suggests to 'bracket' (Sokolowski 1999: 193) the world, to set aside any prevailing information in order to investigate a social phenomenon from an impartial viewpoint. Thus, phenomenology ignores pre-existing assumptions and beliefs in order to be open to individual interpretation (Sokolowski 1999). The word phenomenology stems from the Greek terms 'phainomenon' and 'logos' and 'signifies the activity of giving an account, giving a logos, of various phenomena, of the various ways in which things can appear' (Sokolowski 1999: 13).

The phenomenologist views human behaviour ... as a product of how people interpret the world ... In order to grasp the meanings of a person's behaviour, 'the phenomenologist attempts to see things from that person's point of view' (Bogdan and Taylor 1975: 13-14, emphasis in original) (cited from: Bryman and Bell, 2011:19).

Phenomenology investigates not only the phenomenon itself but also looks at its appearance, its environment and the self of the people experiencing it (Sokolowski, 1999).

Phenomenology is applied increasingly to study the motivations for ethical behaviour (Carrigan, 2017).

Pure phenomenology claims that phenomenological realities are autonomous, meaning that they exist independently of an underlying reality (Noë, 2007). Critics of pure phenomenology argue that intellectual engagement with perceptions that are completely autonomous and not related to any other existing knowledge is meaningless (Noë, 2007). With the rejection of an underlying reality this form of phenomenology is reminiscent of nominalism, while this research is based on the less extreme ontology of social constructionism (Saunders, Lewis, and Thornhill 2016). Hence, the epistemology applied is a more realist version of phenomenology, that is, perceptual phenomenology, which 'is an investigation of the natural world' (Noë 2007: 235).

The natural world is perceived in various ways, the perceptual experience is based on natural entities and therefore is not autonomous (Bourgeois and Rosenthal 1983; Noë 2007). This acceptance of the natural world as an entity that is perceived in various ways but that is not abstract, differentiates Merleau-Ponty's view of phenomenology from Husserl's definition (Bourgeois and Rosenthal 1983). Merleau-Ponty suggests that perceptions are related to the naturally existing world, while Husserl proposes that perceptions are transcendental. Heidegger argues that perceptions are embedded in the natural world and highlights its importance for individual perception (Horrigan-Kelly, Millar, and Dowling 2016). His stance of phenomenology acknowledges the influence of the environment one is born into, including norms, values, culture and others, on individual perception. Therefore, Heidegger's variation of phenomenology focuses on the circumstances forming the everyday world of individuals (Horrigan-Kelly, Millar, and Dowling 2016).

The objective of this research is to gain insight into the perceptions of consumers and business representatives regarding businesses selling surplus food. Consequently, perceptual phenomenology is the chosen epistemology to understand the research participants' perceptual experience of this real world phenomenon. Moreover, a focus is drawn on the contextual factors shaping individual perceptions, according to Heidegger's phenomenology. This is in line with the theory of diffusion of innovation (TODOI), which also highlights the importance of contextual factors on individual behaviour towards an innovation (2.5). The methodological approach for this study, which is based on these philosophical considerations, is outlined in the next section (3.3).

3.3 Case study research as methodology

The purpose of this research was to understand the new phenomenon of buying or not buying surplus food from commercial businesses. The lack of research in this particular domain of businesses selling surplus food, the limited comprehension of this new phenomenon and the causal relationships influencing it, induced an exploratory research design. 'How can businesses selling surplus food commercially be adopted by consumers and reduce food waste in Denmark and the UK?' is an exploratory research question, formulating the attempt to gain better understanding of a phenomenon (Elliott and Timulak 2005), to discover new insight into the potential of businesses selling surplus food as a solution to food waste. Scholars studying similar research contexts also used an exploratory research design, including Yeow, Dean and Tucker (2014) examining factors impacting ethical consumerism, Göbel et al. (2015) investigating the causes of food waste along the food supply chain and Filimonau and Gherbin (2017) studying waste management practices in the UK retail sector, for instance.

Businesses selling surplus food are a modern phenomenon which was examined in its real-life context. A case study approach was the chosen research methodology as it enables the researcher 'to retain the holistic and meaningful characteristics of real-life events' (Yin 1994: 3) while investigating a current phenomenon in-depth (Yin 2014). Such an inquiry can explain the character of the case, reveal underlying causal relations and provide insight into the potential effect of certain actions (Saunders, Lewis, and Thornhill 2016). Siggelkow (2016) argues that '(...) research involving case data can usually get much closer to theoretical constructs and provide a much more persuasive argument about causal forces than broad empirical research can' (Siggelkow 2007: 22,23) – a statement supported by Flyvbjerg (2006), for instance. Through case study research, context-dependent learning can be gained, the kind of knowledge that enables the researcher to become an expert in this area (Flyvbjerg 2006). Exploratory case study research is particularly well suited when the aim is to comprehend the complexity of a contemporary real world phenomenon, and therefore is an appropriate research strategy for this study. Rich insights on food waste contexts could be gained by scholars applying this approach (Mena, Adenso-Diaz, and Yurt 2011; Garrone, Melacini, and Perego 2014; Charlebois, Creedy, and Von Massow 2015).

Moreover, the case study approach is in line with the theoretical and philosophical approach of this study (see Figure 3.1). Case study research proposes the investigation of the context of a certain phenomenon while the TODOI argues that the contextual factors of an

innovation need to be investigated to explain its adoption or rejection (Goldsmith 2012). Also, the phenomenological approach requires understanding of the context of a phenomenon, as it shapes individual perceptions. Thus, methodology, philosophy and theory all highlight the importance of contextual factors.

The 'unit of analysis' (Yin 1994: 21) is the business selling surplus food, leading to a multiple-case study with three cases: The supermarkets Niftie's in the UK and Wefood in Denmark, that both exclusively sell discounted surplus food, and the app Too Good To Go (TGTG), which enables restaurants to sell their leftovers to consumers after service, in the UK and Denmark (companies' websites 2016; 2017) (see 4.2 for more detail). While valuable knowledge can be gained from the investigation of just one case (Flyvbjerg 2006; Siggelkow 2007), multiple cases create more compelling evidence, with these three cases representing literal as well as theoretical replication (Yin 2014). Wefood and Niftie's were expected to create similar results (literal replication), as they are both based on a supermarket business model. TGTG, in contrast, represents a technology-enabled business model and therefore was assumed to produce distinct results in comparison with the surplus supermarkets (theoretical replication). The focus was on each business and its particular context. Those were compared with each other, leading to a comparative design (Bryman and Bell 2011).

With the cases being embedded in different countries, this comparative research followed a cross-cultural approach (Bryman and Bell 2011). Such an approach is used to gain further insight by investigating patterns of differences and similarities among the cases and to thus reveal causal connections (Ragin 1994). Research indicates that cultural values as well as macro and structural factors are developed distinctively in different countries, and that those values influence consumption patterns and sustainability (Thøgersen 2010; Parboteeah, Addae, and Cullen 2012). Therefore, cases were chosen from the UK and Denmark, as these nations are similar at a base level; they are both westernised and developed, while representing different political and economic landscapes and cultural values (see 4.2 for more information).

In line with the phenomenological approach (3.2), individual perceptions and behaviours, socio-cultural contexts and their subjective meanings were studied under an interpretivist paradigm with the data collected mostly being verbal accounts (Elliott and Timulak 2005). As the perceptions of individuals form the core of this research, interviews and observations were considered to provide the biggest insight. Existing research indicates that qualitative data are useful to understand the behaviours, intentions, experiences, values and practices

causing food waste (e.g. Graham-Rowe, Jessop, and Sparks, 2014; Papargyropoulou, Lozano, Steinberger, Wright, and Ujang, 2014; Sirieix, Lála, and Kocmanová, 2017). While case study research enables the application of several methods, sources of knowledge that naturally occur in the case environment are used (Hyett, Kenny, and Dickson-Swift 2014). Thus, interviews and observations are appropriate methods in case study research. Numerical data were gathered as well, in the form of available business records (see 4.3 for more details on the methods for data collection). This doctoral research was time constrained; the main data collection happened in autumn 2017, while further secondary and primary data were collected until autumn 2018 (see 4.4.5 for more detail). Nevertheless, the results of this snapshot in time have the potential to inform the future of these businesses by providing insight that can benefit their business development and thus food waste reduction.

The following figure (Figure 3.1) illustrates the methodological approach for this research. Case study research is the applied methodology combining perceptual phenomenology and the TODOI. With the application of perceptual phenomenology (illustrated as blue square in Figure 3.1) the focus is on individual perceptions and the context shaping those (3.2). The TODOI (illustrated as red square) highlights the investigation of the innovation, its potential adopters and the contextual factors influencing both (2.5). With the case study approach (illustrated by the green squares), each case is investigated according to the theoretical and philosophical considerations and compared with the other cases. Each case business is researched with the focus being on the business and its products (innovation), the consumers (potential adopters) and the contextual factors (context) influencing both, business and consumers. Hereby, the perceptions of consumers and business representatives are expected to provide insight into the innovation, its potential adopters and the context affecting both.

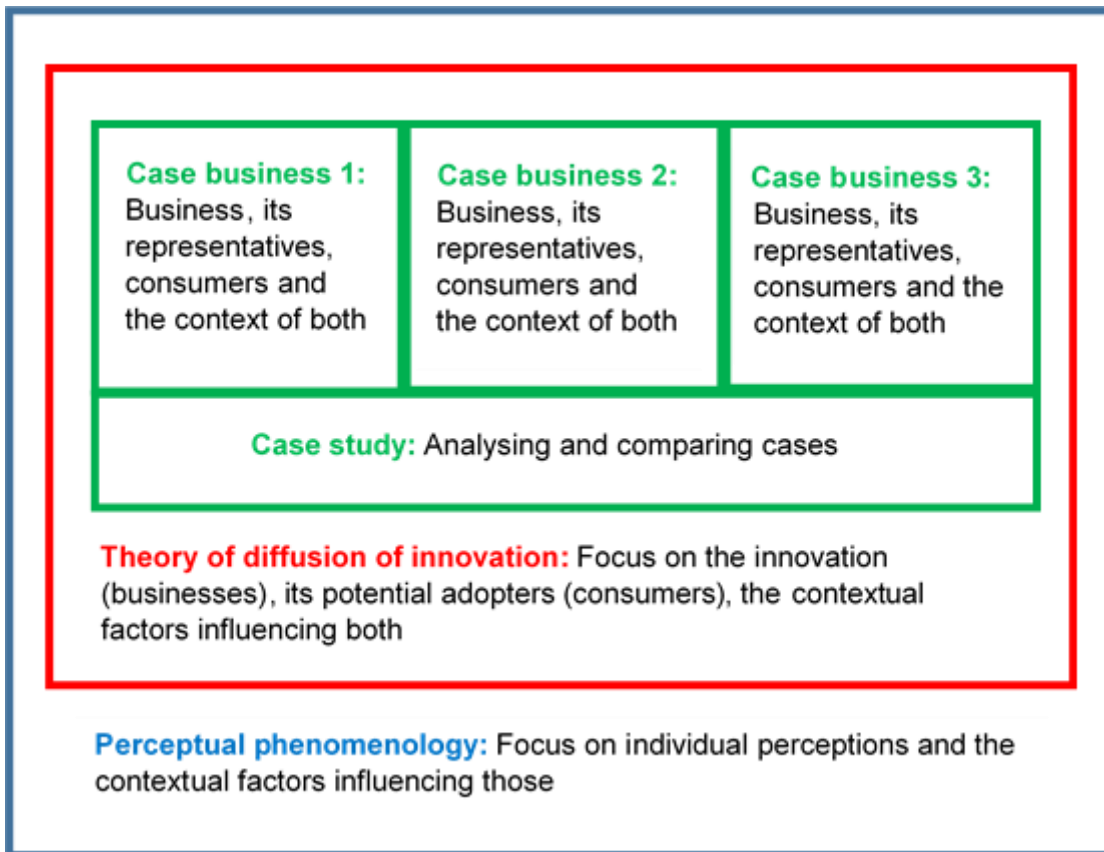


Figure 3.1: Case study research combining perceptual phenomenology and TODOI (author)

This section outlined case study research as a suitable methodology to investigate the novel real-world phenomenon of businesses selling surplus food commercially to consumers. Phenomenology and the TODOI, can both be applied following this methodology (Figure 3.1). The next section describes how research quality was assured.

3.4 Assuring research quality

The quality of any research is measured by the degree to which a study can be replicated to generate the same results (reliability) (Yin 2014) and by the extent to which the applied measures of a concept are appropriate to actually gauge the concept (validity) (Bryman and Bell 2011). While there are many types of validity, the most common to evaluate exploratory case studies are construct validity and external validity (Yin 2014). Construct validity interrogates if the data collected are actually obtained by the correct operational measures and not by subjective interpretations (Yin 2014). External validity measures the extent to which the findings of the case study can be generalized (Yin 2014).

The data gathered during subjectivist research consist of personal narratives and opinions, as opposed to absolute facts, which form the data gathered during objectivist studies. Hence, when analysing and interpreting these subjective statements to understand the participants' behaviours, the subjectivist researcher is influenced by his or her own personal values. Therefore, the researcher must critically review his or her own beliefs and attitudes and also incorporate this reflection into the research (Saunders, Lewis, and Thornhill 2016). In order to check if the representation of the data reflects what the participants meant, the criterion of credibility can be applied. Interpreting the data together with another person (investigator triangulation) can increase credibility. Letting the participants review interview notes and discussing the meaning of those together with them helps the researcher to ensure his or her interpretations are correct. Thorough reflection and careful observation of the influence of the researcher's own expectations regarding the outcome also contributes to credibility (Saunders, Lewis, and Thornhill 2016). Being mindful of one's own values to avoid those influencing the research is a similar criterion called confirmability (Bryman and Bell 2011). Using multiple methods of data collection (methodological triangulation), various sources of data (data triangulation) or applying different theories to the same set of data (theory triangulation) adds depth to the study and supports its credibility (Yin 2014; Saunders, Lewis, and Thornhill 2016). Data triangulation strengthens construct validity if multiple sources of evidence support the same finding (Yin 2014).

The evaluation of qualitative research by testing its validity and reliability rigidly has been criticized. Reality is perceived as being socially constructed; subjective interpretations of a phenomenon in a particular context at a certain time form the evidence of such studies and are difficult to replicate or generalise (Saunders, Lewis, and Thornhill 2016). Alternative criteria to test the quality of qualitative research have been developed (Lincoln and Guba 1985; Bryman and Bell 2011; Saunders, Lewis, and Thornhill 2016). Instead of reliability,

dependability can be used, which entails the rigorous documentation of all steps that are undertaken during the research, including the recording of all data obtained and changes made so that another researcher could copy the process (Lincoln and Guba 1985; Bryman and Bell 2011). A case study protocol to document the research process and a case study database to record all data are useful tools, which have been created as part of this research as well (Yin 1994). Rich descriptions of the research context, an in-depth explanation of the conducted study, its results and the interpretation of those is also required to ensure transferability, which can substitute generalisability (external validity) (Lincoln and Guba 1985; Saunders, Lewis, and Thornhill 2016). Thus, others can decide to which degree the outcomes of that research are transferable to other contexts (Lincoln and Guba 1985; Bryman and Bell 2011). Lincoln and Guba (1985) identified the consideration of a study's authenticity as another criterion to evaluate qualitative research (Bryman and Bell 2011; Saunders, Lewis and Thornhill 2016). This is achieved by representing all views in a fair manner, by raising awareness, generating understanding and learning and by creating impact and generating change (Saunders, Lewis, and Thornhill 2016).

In regards to this research, thorough documentation, triangulation and critical reflexivity supported the researcher's personal ambition to create positive impact with this study by providing high quality valid research (see Chapter 4 for more detail on the conduction of data collection and analysis). Validity was ensured by discussing the research design with experienced researchers (supervisors). Furthermore, several sources provided data supporting the same findings, indicating strong construct validity. To create credibility, data were collected via different methods, such as semi-structured interviews, group and focus-group interviews, observations and the investigation of secondary data. Moreover, interpretations and conclusions were counterchecked in discussions with supervisors. In addition, the researcher was mindful of her values and reflected on positionality continuously while having actively sought alternative interpretations to avoid a biased analysis (see 4.7.1 for more detail on positionality). The complete research process and all data obtained were documented thoroughly assuring dependability and transferability. The purpose of this research was to generate understanding that can create positive impact. To achieve valuable results the authentic representation of all data was essential.

3.5 Summary

This chapter explained the research design of this study. The aim of this research was to understand how businesses selling surplus food commercially can be adopted by consumers and reduce food waste in Denmark and the UK. The perceptions of consumers and representatives of those businesses were expected to provide the insights required to answer the research question. A phenomenological approach was chosen, as phenomenology acknowledges individual perceptions as realities, while also highlighting the contextual factors influencing those.

Businesses selling surplus food commercially represent an innovation that is either adopted or rejected by consumers. To examine this new real-world phenomenon, case study research was identified as a suitable methodology. An exploratory comparative cross-cultural case study approach was chosen with three cases: two surplus supermarkets, one in Denmark and one in the UK, and a technology-enabled business operating in both countries. With phenomenology, TODOI (as theoretical inspiration) and case study research all highlighting the importance of contextual factors and individual perceptions for understanding a certain phenomenon, philosophy, theory and methodology are in line with each other. The methodological approach of this research was illustrated in Figure 3.1.

Research quality was ensured by the provision of validity, credibility, transferability and dependability via thorough documentation, triangulation and critical reflexivity. The table below (Table 3.1) provides an overview of the research approach. The chosen ontology is social constructionism, which implies that reality is socially constructed. The adopted epistemology is perceptual phenomenology, which acknowledges individual perceptions of the reality as valid. The TODOI forms the theoretical inspiration of this study, suggesting the investigation of certain factors to understand the adoption or rejection of an innovation. Case study is the chosen methodology, while an exploratory cross-cultural comparative design was selected. The following chapter describes how the methodological structure outlined in this chapter was applied during the data collection process.

Terminology	Approach applied	Rationale
Ontology	Social constructionism	Reality is socially constructed.
Epistemology	Perceptual phenomenology	The natural world is perceived in various ways, different perceptions are acknowledged as being valid.
Theoretical inspiration	Theory of diffusion of innovation	To understand the diffusion of an innovation different perspectives are investigated considering the innovation, its context, the potential adopters and their social network.
Methodology	Case study research	<ul style="list-style-type: none"> • Exploratory • Interpretivist paradigm • Comparative, cross-cultural design • Multiple methods (interviews, observation, secondary data) • Qualitative data

Table 3.1: The research approach (author)

Chapter 4: Investigating the commercial sale of surplus food

4.1 Introduction

This chapter gives an account of the data collection and data analysis processes. The chapter begins with the identification of the cases for this case study research, followed by a description of the methods for data collection. Two surplus supermarkets, one located in Denmark and one in the UK, as well as a technology-enabled business, which operates in both countries, were selected. All case businesses sell surplus food in its original form commercially to consumers.

Primary data were collected via semi-structured interviews and observations with customers (consumers shopping at the case businesses), consumers (people who do not use the case businesses) and business representatives. Section 4.4 outlines how data were collected from the different cases and how saturation was reached. Section 4.5 explains how the collected data were analysed using thematic analysis. Transcription and coding are described in detail. Thereafter, limitations regarding data collection and analysis are discussed. Reflections on positionality and the experience gained from conducting this research are presented subsequently. The chapter ends with a summary.

The previous chapters are based on literature and therefore are written in the third person. This and the following chapters, however, are based on the research I conducted. My interpretations, which are influenced by my personality, are essential in shaping this qualitative research and its outcomes (Webb 1992). Hence, from this chapter onwards, I am using the first person. As in the previous chapter, names of participants appearing in this and the following chapters are fictional for reasons of confidentiality.

4.2 Case identification and background

This section explains how the case businesses for this case study research have been identified, while also providing some background information about the cases and the case locations. The purpose of this research was to examine the sale of surplus food as a possible market-based solution to food waste. The specific focus here was on surplus food in its original form, as it is discarded by other businesses. Thus, enterprises that further process and then sell surplus food (e.g. restaurants, producers of soups, smoothies, beer, etc.) were not considered, as here value is added and the product is changed. To use surplus food as a resource input is important for sustainable development, as outlined earlier in the thesis (see 2.2.2).

This study focused on the sale of 'pure', non-enhanced surplus food, as those are edible food items, that should not need further resource input and upgrading in order to be perceived as saleable and purchasable products. Retailers justify the disposal of these imperfect products, arguing that consumers will not buy them and that offering those items even harms business success by deterring consumers browsing for perfect items with long shelf life (Stenmarck et al. 2011). Hence, research into businesses that sell the products retailers and restaurants do not consider worth offering can provide valuable insight into the actual market value of surplus food. Of interest are the factors motivating or hindering consumers to engage with those businesses and to purchase surplus food in its original condition, the same condition in which it was considered waste earlier in the supply chain. Also requiring attention are the challenges to selling those products from a business perspective. Furthermore, it is questionable if businesses selling surplus food in its original form achieve a reduction in food waste and whether these businesses could be long-term solutions to food waste. These questions show the importance of researching businesses that sell surplus food in its original form, justifying this criterion for the case identification.

To research a real market situation, solely businesses that were open to all consumers, as opposed to those that were based on membership, were examined in this study. As such, social supermarkets that are open to people in need or benefit employees of certain retailers only were not considered because of their exclusivity (Schneider et al. 2015; Company Shop Ltd. 2016a, 2016b). Customers of social supermarkets shop there firstly because they cannot afford to shop at a regular supermarket, or because they benefit from special discounts related to their affiliation with the suppliers. While price might be the main purchasing criteria for customers of supermarkets selling surplus food to everybody, it is not a predefined condition. Therefore, researching the latter provides broader perceptions of

surplus food and offers insight into a bigger variety of consumers. The purpose of this research was to find out how businesses selling surplus food commercially can be adopted by consumers and reduce food waste. Consequently, the investigation of businesses that are only open to consumers that meet a certain criterion, such as social supermarkets, was not suitable.

Because of the high amounts of surplus food wasted by retailers, restaurants and households, the geographical focus of this research is on Europe (Stenmarck et al. 2016). Denmark and the UK have been selected as case locations because of their different cultures and food waste levels. The UK is the nation with the highest food waste levels in Europe, while food waste in Denmark reaches average European amounts (FAO, 2011; Halloran and Magid, 2014; Vanham, Bouraoui, Leip, Grizzetti, and Bidoglio, 2015). Cultural differences become explicit by comparing Hofstede Insights's (2019) cultural dimensions for these countries, with the biggest difference being manifested in the masculinity value. In a masculine culture, like the UK, success and competition are valued highly, while in a more feminine culture, as prevalent in Denmark, caring, inclusion and quality of life are important social values. Power is distributed more equally in Denmark than in the UK, with the value for this cultural dimension being twice as high in the UK, meaning that hierarchical order in the UK is stricter and inequalities are more accepted than in Denmark, where hierarchy is flatter. The UK also has a higher Uncertainty Avoidance Index than Denmark, resulting in a more rigid system and a higher intolerance towards unconventional innovations. Both cultures score high on the indulgence dimension, meaning desires and impulses are realised in order to enjoy life (Hofstede Insights 2019).

These cultural dimensions indicate differences in social values and can explain the diversity in consumer behaviour scholars describe. For Danish consumers, product quality, health and ecology play a major role in food shopping, while for the British convenience (as a 'general influence[s] on food culture' (Brown, Dury, and Holdsworth 2009: 186), price and familiarity are most important (Brunsø, Grunert, and Bredahl 1996). The difference in the retail sales share of organic products in Denmark (9.7%) and the UK (1.5%) is one indicator demonstrating the distinct food consumption patterns in those countries (statista 2018). According to Hofstede Insights (2019), quality of life is more important to Danish people, and so consumers prefer healthy high-quality products. Thus, speciality shops are more frequented in Denmark than in the UK, where consumers seem to be less open to new products than in Denmark, which can be related to the higher curiosity and comfort with the unknown of Danes (Brunsø, Grunert, and Bredahl 1996; Hofstede Insights 2019).

With cultural differences leading to distinct consumer behaviour and diverse economic systems, they also affect sustainability. Parboteeah, Addae and Cullen (2012) found that countries with a focus on achievement and performance were less likely to foster sustainability, while countries with cultures that focus on group rather than individual wellbeing and that value altruism are more prone to sustainable behaviour. The low masculinity value of Denmark means that the Danish prioritise care and life quality over growth and immediate success, which influences the nation's overall sustainability, where Denmark ranks first and the UK, which has a higher masculinity value, eleventh in a global comparison from April 2018 (based on environmental, social and governance factors) (Parboteeah, Addae, and Cullen 2012; Hofstede Insights 2019; RobecoSAM 2019). Attitudes towards cherishing work-life-balance and minimising inequalities among people, as indicated by a low Power Distance Index, could have contributed to the fact that Denmark is the world's second happiest nation, while the UK occupies rank 15 (Hofstede Insights 2019; Feldman 2019). Hence, it can be concluded that, even though Denmark and the UK are both European countries with a high living standard, national values and consumer behaviour differ in the two nations, which has direct implications for food waste.

Investigating businesses selling surplus food in Denmark and the UK promises to provide interesting insights. Considering that Denmark ranks higher in sustainability and creates less (albeit too much) food waste than the UK, questions that arise are whether businesses selling surplus food in these two nations face different or similar challenges, achieve similar or different successes and whether consumers are motivated for different or similar reasons to engage with the case businesses and buy surplus food. Further valuable insight can be gained by examining and comparing not only businesses in different countries but also different business models. Businesses selling surplus food commercially operate via apps or via a store, they sell surplus food from restaurants or retailers (see 1.3.3). Therefore, the cases chosen for this research represent different business models (app and supermarket) selling surplus food from different sources (retailers and restaurants) and each operating in different countries (UK and Denmark).

During my research, which focused on businesses selling surplus food in its original form to all consumers, I became aware of the surplus supermarkets Wefood in Denmark and Niftie's in the UK and also found out about the app Too Good To Go (TGTG), which operated in both countries. All three businesses had received strong media attention. Wefood was Denmark's first and only surplus supermarket (at the time of this research) and was founded by Danish Charity (DC) to reduce food waste in Denmark and to create revenue for their projects (Payton 2016; EU Fusions 2016; Wonderful Copenhagen 2019;

company website 2019). In 2017, Wefood had two stores in Copenhagen. Niftie's was one of two surplus supermarkets in the UK, but the only one with a 'bricks and mortar' store (Glanfield 2016; Approved Food 2019). The business was located in Dover and run by its founder Nico to provide affordable food to the community while reducing food waste (Nifties 2017). The other surplus supermarket, Approved Food, solely sold online, which meant that data collection would have been difficult and would have required access to customer data from Approved Food. Their only publicly available contact information was an email for customer service with whom I exchanged several emails. Customer service had forwarded my email to the marketing team which never replied, and so I concluded that Approved Food was not interested in participating in the research. TGTG was the most established app selling surplus food from restaurants to consumers and the only one operating in several European countries including the UK and Denmark (Too Good To Go 2016). In 2017, the only other similar apps operating in Europe were Karma in Sweden and Your Local in Denmark (Innovation Fund Denmark 2017; Cole 2017; Wong 2017; Pyne 2018; Gil 2018; Karma 2019; Roy 2019).

Niftie's, Wefood and TGTG fulfilled the research criterion as they were businesses selling surplus food in its original form commercially to all consumers. In addition, they represented a technology-enabled and a supermarket based business model selling surplus food from restaurants (TGTG) and retailers (Wefood and Niftie's) while operating in Denmark and the UK (countries with high but different food waste levels and different cultures). Consequently, they were chosen as case businesses. Moreover, obtaining primary data for those case studies was possible. The following table (Table 4.1) provides an overview of the case businesses at the time of data collection for this research (2017). It is worth noting that, in August 2018, TGTG expanded its business model by opening a store and an online shop to sell surplus food from wholesalers and producers (Green Key 2018; Lienert 2018). However, as this happened at the end of data collection, and as the shop-based business model was already represented by the case businesses Wefood and Niftie's, TGTG's shop was not included in this study.

Case business	Niftie's	Wefood	TGTG
Concept	Supermarket	Supermarket	App
Location	Dover, UK	Copenhagen, Denmark	Birmingham, UK Copenhagen, Denmark
Stores	1	2 (Amager and Nørrebro)	6 in Birmingham 200+ in Copenhagen
Staff number	1 full-time	<u>Amager store:</u> 11 volunteers <u>Nørrebro store:</u> 37 volunteers, <u>Head office:</u> 4 employees (1 full-time)	129 in total (employees operating in sales, business development, marketing, accounting, IT, etc.)
Business model	Supermarket solely selling surplus food from retailers and manufacturers to empower people to purchase food cheaper and to reduce food waste.	Supermarkets solely selling surplus food from retailers and manufacturers, founded by a charity to create profit for the charity to fight food poverty in developing countries and to fight food waste in Denmark, run by volunteers, managed by a few employees.	App enabling restaurants, cafés and supermarkets to sell their surplus food (leftover meals, prepared food that has not been sold) to consumers at a discount.

Table 4.1: Case overview, 2017(author)

The international app TGTG was explored in Birmingham and Copenhagen; the surplus supermarkets Wefood and Niftie's were located in Copenhagen and Dover respectively. Birmingham and Copenhagen are metropolises with ethnically diverse but mostly Christian populations (World Population Review 2019). Copenhagen is the capital and largest city of

Denmark and Birmingham is the UK's second largest city (World Population Review 2019). However, culturally these two cities are very different, which is highlighted by their different descriptions, for instance. Copenhagen's description focusses on its high life quality and its eco-friendly city design with a great cycling infrastructure fostering a sustainable lifestyle (World Population Review 2019). In contrast, Birmingham's description highlights the city's industrial past (World Population Review 2019). While in Copenhagen the unemployment rate is 4.1%, Birmingham hosts the highest number of unemployed people in Great Britain with 7% (Office for National Statistics 2017; Birmingham City Council 2019; StatBank Denmark 2019).

Dover is smaller than Birmingham and Copenhagen with a population of only 0.1 million (2017) compared to 1.3 million people in Copenhagen (2019) and 1.1 million in Birmingham (2017) (Office for National Statistics 2019; World Population Review 2019). Moreover, Dover is less multicultural with 2% of international ethnicities, while this share is 27% in Copenhagen and almost 30% in Birmingham (Dover District Council 2017a; World Population Review 2019). As in Birmingham, the unemployment rate in Dover is high (5%) (Brinkhoff 2017; Dover District Council 2017b; 2018). Statistics considering health factors, such as smoking, child obesity and weight challenges, state that more children in the UK are overweight than in Denmark, while the differences in smoking habits and perceived health are small, with slightly fewer smokers and better perceived health in Denmark (Pearson et al. 2010; Lowe 2016; Eurostat 2014; 2017).

These facts indicate the economic and cultural differences of the case locations. While Birmingham and Copenhagen both are multicultural metropolises, their cityscapes and atmospheres are very different from each other. Dover is a small town and thus different from the other two cities. Hence, it can be expected that consumers in those locations are motivated for different reasons to engage or not engage with the case businesses and that the case businesses experience different challenges. However, it could also be true that the consumers and case businesses in those locations experience similar drivers and barriers in buying or selling surplus food despite their different cultural backgrounds. Therefore, investigating businesses selling surplus food in those locations that represent multicultural metropolises but also a small town, a city where sustainability is promoted and cities with high unemployment rates promises to provide rich and valuable insights. The following maps (Figures 4.1, 4.2) indicate the research areas.



Figure 4.1: Map of the UK focussed on England (stars indicating research locations - Birmingham (blue) and Dover (red)) (author, Google 2018)

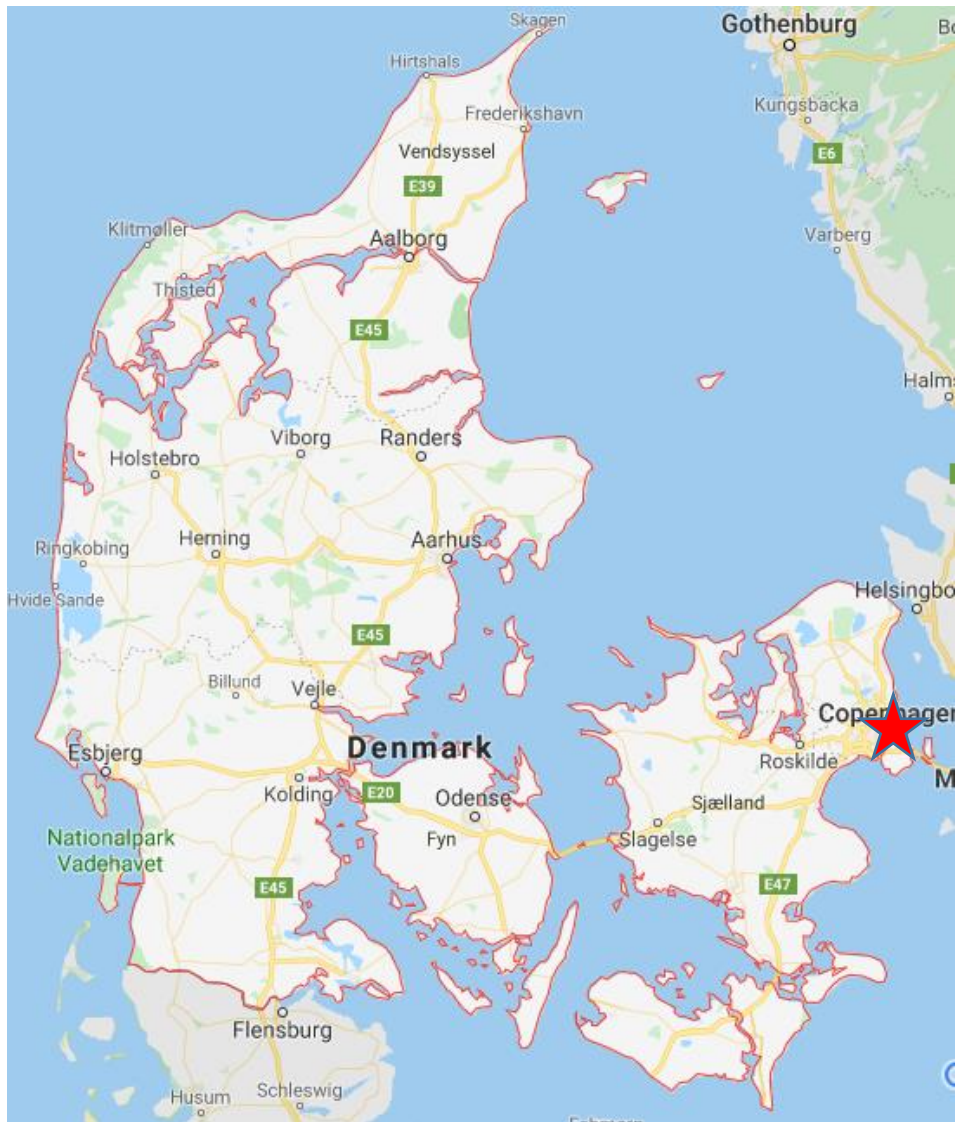


Figure 4.2: Map of Denmark (star indicates research location Copenhagen (red)) (author, Google 2018)

This section justified the selection of the case businesses and provided information about the cases and their locations. The following section explains the methods applied for data collection.

4.3 Methods for data collection

Data were collected from the cases via different methods. First, secondary data were gathered to determine the requirement for the collection of primary data. Sampling had to be conducted to identify research participants. Then, primary data were gathered via semi-structured interviews, group interviews and observations. In the following paragraphs these methods are explained, while the actual collection of primary data is described in the next section (4.4).

Researching secondary data, which are existing data that can be found in books, journals and websites, for example, forms the first step after the research problem has been recognized (Clippinger 2018). The investigation of secondary data helps to refine the research question and to identify information that requires primary data collection (Clippinger 2018). Time, expenses and effort can be saved by using applicable secondary data (Hair et al. 2016). The process of secondary data collection is formed by four steps: the localisation of the data, their evaluation, extraction and recording (Clippinger 2018). For this study, secondary data were researched before, during and after the collection of primary data. Because of the lack of empirical research regarding businesses selling surplus food commercially, sources mainly consisted of newspaper articles, business reports, websites related to the case businesses and business records from the case businesses. Newspaper articles, business reports (only available for TGTG) and notes taken from the investigation of those were saved as documents. Websites were regularly visited, whereas most new information was provided by the Facebook websites of the surplus supermarkets (4.4.5). Notes were taken and videos were transcribed; the documents were saved. Business records (only available from Wefood) were photographed, forwarded to me via email or directly saved on my hard drive. Those were analysed with notes and tables documenting the results. The gathered secondary data formed part of the overall collected data and were included in the analysis.

Primary data were collected from business representatives, customers and consumers, who formed the sample. That said, the terminology 'sample' can be challenged, as case studies follow the replication logic (cases are chosen to provide literal and theoretical replication), not a sampling logic (choosing a representative sample of the unit of interest) (Yin 2014). For this research sampling was still necessary, as consumers and business representatives needed to be selected as participants.

Stakeholders of the case businesses such as employees or volunteers working for a case business or a business partnering with the case business and customers (consumers shopping at the case businesses) as well as people located in the area of the case businesses but not shopping at those (consumers) were identified as participants determining a purposive sampling strategy (Saunders, Lewis, and Thornhill 2016). Also, representatives of other organisations of interest, including supermarkets or restaurants located in the vicinity of the case businesses but not collaborating with those, formed part of the sample. Customers and business representatives were approached within the businesses and consumers outside on the streets, in the surrounding of the case locations, at different times of day to avoid biases (e.g. only selecting people who shop at a certain time of the day). I asked potential participants if they were willing take part in my PhD research on market-based solutions to food waste and explained that this would entail an interview lasting approximately 20 minutes (see 4.4.2, 4.4.3 for more detail). The purpose of this qualitative study, which was to understand the cases and their specific socio-cultural context, justified this sampling method, as the focus was on consumers in the businesses' environment rather than on a representative sample of all nationwide food shoppers, for example. Nevertheless, the aim was to select participants of different genders, ages and employments, to avoid self-selection bias and to gain insight into the perceptions of participants with different demographic backgrounds (Aschemann-Witzel et al. 2017). An important ethical condition regarding sampling was that only non-vulnerable English speaking adults, who had given their written informed consent, could participate in the study.

Sample size was guided by saturation, which generally is reached when no new topics arise anymore, when new data do not reveal further insights (Mason 2010). Funding and time limits can restrict further research if the point of saturation is not reached within the given frame (Mason 2010). According to Morse (1994) six participants per group (business representatives, customer, consumer) per case might be sufficient (54^3 for this study), especially also considering that the application of multiple methods requires fewer participants (Lee, Woo, and Mackenzie 2002; Mason 2010). Guest, Bunce, and Johnson (2006) stated that per homogeneous group 12 interviews are sufficient to achieve saturation, which would require the conduction of 36^4 interviews for this research, if consumers, customers and business representatives are perceived as homogeneous group

³ $6 * 3 * 3 = 54$ (6 participants per group (3 groups: consumers, customers, business representatives) per case (3 cases: TGTG, Wefood, Niftie's))

⁴ $12 * 3 = 36$ (12 interviews per group (3 groups: consumers, customers, business representatives))

each. The review of 15 qualitative food waste studies⁵ (that mention the amount of conducted interviews or the participant number) revealed that the amount of conducted interviews ranged between 7 and 44, while most studies were based on approximately 14 interviews. Despite these suggestions, sufficient data, considering its breadth and depth, have to be collected to answer the research questions appropriately (O'Reilly and Parker 2013) (see 4.4.5 for more information regarding saturation).

In exploratory research, where the aim is to gain better understanding of a certain context, in-depth and semi-structured interviews are useful methods for data collection (Saunders, Lewis, and Thornhill 2016). Moreover, semi-structured interviews are a common method of primary data collection in food waste studies (e.g. Baglioni, de Pieri, and Tallarico, 2016; Lazell, 2016; Vinegar, Parker, and McCourt, 2016). As the research objectives had been determined in advance, the focus of this study was clear; topics that were of interest had been identified. Consequently, the researcher had a set of questions and a list of scenarios that were discussed with the participants. Before the actual data collection, interview questions (see Appendix Chapter 4, A, Tables A1, A2 for interview questions) were piloted and revised to ensure their accuracy and clarity (Bryman and Bell 2011) (4.4.1). The interview guide was applied flexibly, which allowed the participant to highlight and elucidate points that were relevant to him or her whilst such (semi-structured) design also enabled the researcher to ask open and probing questions (Bryman and Bell 2011; Saunders, Lewis, and Thornhill 2016) (see 4.4.2, 4.4.3 and 4.4.4 for more information). Furthermore, letting the participant lead the interview and provide in-depth answers enabled the understanding of his or her perspective, according to phenomenology. This structure facilitated the comparability of the cases without limiting the depth and detail of the answers (Bryman and Bell 2011).

Regarding the interviews several potential biases had to be considered and counteracted. The anticipated time for interviews ranged from 20 minutes to one hour, while some flexibility was included to respect the time that each participant was able and willing to offer. Hence, participation bias, the fact that primarily people who were willing to give at least 20 minutes of their time could be recruited as participants, had to be considered in the analysis (Saunders, Lewis, and Thornhill 2016). A further potential threat to the validity of the results was interviewer bias, where the behaviour, beliefs or credibility of the interviewer affect the

⁵ (Watson and Meah 2013; Farr-Wharton, Choi, and Foth 2014; Graham-Rowe, Jessop, and Sparks 2014; Midgley 2014; Papargyropoulou 2014; Göbel et al. 2015; Porpino, Parente, and Wansink 2015; Baglioni, de Pieri, and Tallarico, 2016; Evans, Welch and Swaffield 2017; Sirieix, Lála, and Kocmanová, 2017; Filimonau and Gherbin 2017; Welch, Swaffield and Evans 2018; Devin and Richards 2018; Saxena and Tornaghi 2018; Swaffield, Evans, and Welch 2018; Hebrok and Heidenstrøm 2019)

participant's responses or the way these responses were interpreted (Saunders, Lewis, and Thornhill 2016). The counterpart is response bias, where the participant adjusts responses according to his or her perception of the interviewer, for example by giving socially desirable answers.

A projective technique was used to overcome response bias by employing techniques that change the context to being imaginary or by relating it to other people; describing somebody's reaction to a certain situation would be an example (Donoghue 2000). Changing the focus to a third party enables the participant to comfortably reveal perceptions that might be regarded as unpleasant or impolite (Donoghue 2000). The techniques applied were construction, where the participant was presented with a picture and had to tell the story around the picture, and projective questioning, where the participant was asked to share his or her opinion about an imaginary scenario (Donoghue 2000) (see 4.4.2 for more detail). Projective techniques are a common tool in consumer research and can deliver valuable insight into personal motivations and beliefs (Donoghue 2000). Further useful insight improving the researcher's understanding and thus reducing the risk of the above-mentioned biases was provided by learning about the participant's past behaviour and reasons leading to it (see Appendix Chapter 4, A, Tables A1, A2 for interview guides).

Interviewer and participant unwittingly influence each other; the researcher's viewpoint colours the participant's responses, which in turn affect the questions posed and therefore distorts the interview – an effect called reflexivity (Yin 2014). Cultural differences can create further bias the researcher has to be aware of (Saunders, Lewis, and Thornhill 2016). To minimise these influences, I was sensitive of biases, reflected on my charisma, beliefs and purposes, prepared and discussed the research design and interview guide with senior colleagues, asked clarifying questions during the interview and also counterchecked some interpretations of the responses with my supervisors and colleagues. When interpreting data, I consciously applied various viewpoints. Furthermore, the interview guide served as a neutral foundation, as it is based on a thorough literature review, providing background knowledge and highlighting issues and gaps that needed further investigation.

Not only individual but also group interviews were conducted for this study (see 4.4.4). The benefit of group interviews is that data from several participants can be collected within one interview while the interaction among participants reveals further insight into the social constructionist dynamics in meaning making (Merriam 2009; Roller and Lavrakas 2015). The terms focus group interview and group interview often can be used synonymously (Merriam 2009; Roller and Lavrakas 2015), whereas in this research focus group interview

describes an interview where the main focus is on the participants' social interaction, on their reaction towards each other and on the discussion that arises among them exchanging their thoughts (Rabiee 2004). The added value of a focus group is the participant interaction revealing participants' personal reasons for their viewpoints, attitudes towards other opinions and issues that are important to them (Bryman and Bell 2011). The group members challenge each other, provide realistic representations of their perceptions whilst showing their reactions to each other's arguments - insights that could not be gained in one-to-one interviews (Bryman and Bell 2011). Consequently, 'the ways in which individuals collectively make sense of a phenomenon and construct meaning around it' (Bryman and Bell 2011: 504) can be understood via focus group interviews. The focus group interaction in this research showcased how the innovation represented by businesses selling surplus food might diffuse within a society and therefore generated valuable insight (4.4.4).

Also, observations formed part of the data collection process. Information gained through observation offers insights that verbal accounts cannot provide, such as automated everyday behaviours and social interaction within the research context that is practised subconsciously. The dynamics of a social phenomenon can be experienced and further evidence can be gained, which is based on the researcher's observation of behaviour not only the participant's description of behaviour (Bryman and Bell 2011). Observing the phenomenon in its real-world context from inside offers additional information supporting the understanding of the phenomenon and its context (Yin 2014). Passively and unobtrusively observing consumers in a supermarket is a form of participant observation used to study consumer behaviour in public settings, such as supermarkets, with the researcher taking the role of a complete observer (Saunders, Lewis, and Thornhill 2016).

For this study too, consumers were observed passively and unobtrusively inside and outside the case businesses. The focus was on the consumers' reactions towards the business, the products (i.e. the surplus food) and the product marketing (see 4.4.4 and Appendix Chapter 4, B for more detail). Because shopping is a public behaviour, an unobtrusive observation did not create ethical issues, while an overt observation might have influenced and falsified consumer behaviour and hence could have caused the observer effect (Saunders, Lewis, and Thornhill 2016). Not knowing the observed environment well enough or too well, both could have led to misinterpretations, the observer error (Saunders, Lewis, and Thornhill 2016). During the process of observing different situations, the researcher might change his or her interpretations, for example due to increasing familiarity with a certain context (observer drift) (Saunders, Lewis, and Thornhill 2016). Taking notes directly after the observation and constantly reviewing the analysis of these notes and their

interpretations is necessary to create data of high quality (Bryman and Bell 2011). This process was employed in this study.

This section explained the applied methods for data collection, the sampling strategy and potential biases. An overview of the methods applied for data collection is presented below (Table 4.2). The next section (4.4) outlines the conduction of the data collection process and describes how those methods were implemented during this case study research.

Method	Detail
Secondary data collection	<ul style="list-style-type: none"> • Business records • Business reports • Newspaper articles • Content of company websites
Sampling	<ul style="list-style-type: none"> • Purposive
Semi-structured interviews	<ul style="list-style-type: none"> • With: <ul style="list-style-type: none"> - consumers - customers - business representatives
Group interviews	<ul style="list-style-type: none"> • Group interviews and focus group interviews
Observation	<ul style="list-style-type: none"> • Passive and unobtrusive • Within businesses and in the surrounding areas • Of: <ul style="list-style-type: none"> - consumers - customers - business representatives

Table 4.2: Overview of the methods for data collection (author)

4.4 The data collection process

4.4.1 Preparation of data collection

The measures taken to prepare for data collection are outlined in this section. Firstly, a literature review was conducted, which revealed that the majority of literature regarding the redistribution of surplus food focused on the phenomenon of distributing surplus food to people in need (e.g. Alexander and Smaje 2008; Schneider et al. 2015; Bromley, Rogers, and Bajzelj 2016; Caraher and Furey 2017) or on the sale of further processed surplus food (Bhatt et al. 2018) (see Chapter 2). The lack of studies on businesses selling surplus food in its original form commercially as potential solutions to food waste highlighted a key gap in the literature and formed the justification for research investigation through the collection of primary data within an exploratory research design.

Between March and May 2017, the chosen case businesses were invited (via email or phone call) to participate in the research entailing a visit, interviews with business representatives, consumers and customers as well as observations in the businesses and in the surrounding areas (see 4.3 for more details regarding sampling, interviews and observations). Fortunately, the findings of my research were assumed to be beneficial for the case businesses. Therefore, convincing them to participate in this research and to provide access to their business, customers and employees was possible and relatively easy in most cases (see 4.4.2 for more information).

Clear definitions of the participant groups and of the terminology applied had to be determined. I defined that the term 'consumer' describes consumers in general, while 'customers' were consumers that use or used any or all of the case businesses. Participants who entered the surplus supermarkets or downloaded TGTG but never bought anything were defined as consumers, not customers. 'Business representatives' were employees or volunteers working for a case business or, in the case of TGTG, for a restaurant partnering with TGTG. Also, employees (or volunteers) working for restaurants not partnering with TGTG, regular supermarkets or other organisations of interest were considered to be business representatives if they were to be interviewed as such. Business representatives could also act as consumers or customers and in some cases vice versa, as business representatives were consumers or customers when they were not working, whereas consumers or customers might have worked for a case business (see 4.4.4). In this thesis, the term 'shopping' always describes food shopping.

Further preparation included the piloting and revision of semi-structured interview questions (see Appendix Chapter 4, A, Tables A1, A2 for interview questions) with supervisors, friends, family members and acquaintances before the field trip started (Bryman and Bell 2011). By trialling the interview questions with familiar individuals, I could see if the questions were generating the intended information and enhance the questions accordingly. The test with distant acquaintances showed the understanding and reaction of people that do not know me very well and helped me to identify questions that needed clarification.

After the completion of all preparation, data collection started in September 2017. The next section describes how data were collected for the case TGTG.

4.4.2 Too Good To Go

This section outlines how data were collected for the case TGTG. In the beginning of September 2017, data were collected in Birmingham from TGTG partners, non-participating restaurants and consumers as well as customers.

All TGTG partners were identified by using the app, while non-participating restaurants were selected via walking through Birmingham city centre and identifying restaurants or cafés that might benefit from joining TGTG but were not partnering with the app. Restaurants and cafés that offered prepared products, such as sandwiches, yoghurts, soups or meals from a buffet, which would not be sold the next day but wasted at the end of service were considered to benefit from partnering with TGTG. I approached potential participants directly, requested approval and arranged a suitable interview time. In some instances, the interview happened later in the day, but most interviews happened almost immediately after having invited the business to participate in my research. Business representatives of TGTG partners and non-participating restaurants were interviewed within the business, as they were either working or just finished their shift and the business itself was the most convenient location. Whenever possible, interviews were audio-recorded, while two of the non-participating restaurants declined to be recorded. These businesses still answered the questions and notes were taken. A summary of the content was recorded immediately after each of the two rather short interviews and transcribed later (see 4.4.4 for more information about interviews).

TGTG customers were approached directly in the businesses when they were picking up their meal. The interview happened immediately, as this was the most convenient option. Moreover, conducting the interviews at the point of sale was suitable because the aim was to understand customers' shopping behaviour regarding surplus food (Aschemann-Witzel et al. 2017). Being located in the real choice environment, customers did not need to memorise their thoughts and perceptions related to their purchasing decision, as they were experiencing those in the moment. Furthermore, participants were not available at later stages, and interviews either happened directly following my approach or not at all. Consumers were contacted in Birmingham city centre with interviews taking place immediately on the street or in a café, where the participant was invited to a drink as incentive. One consumer was identified and interviewed later, as I only met this British consumer during his holiday in Copenhagen.

A semi-structured interview guide with some interview questions arranged according to relevant topics served to guide all interviews, yet the purpose was to let the conversation flow relatively freely. In addition, pictures of different food items, photographed in advance at Morrisons⁶ (a large chain supermarket in the UK) were brought to the interview and shown to the participant to identify shopping habits and lived values in regards to shopping (see Appendix Chapter 4, B, Figures A1, A2, A3 for some example pictures and more detail) (Donoghue 2000). Moreover, the pictures were used to compare the participants' actual choices with their spoken word, enabling the identification of potential attitude-behaviour gaps (Oates and McDonald 2014). The pictures showed different types of fruit and vegetables (organic, wonky, loose, packaged, high quality brand, cheap brand), reduced and non-reduced bread, dented and perfect tins of tomatoes, opened cereal boxes and immaculate cereal packets as well as three different shopping trolleys all containing the same items but different brands each (organic, cheap home brand and quality brands). Participants chose the pictures according to what they revealed before, in other words the selected pictures always matched their reported behaviour. Going through the pictures was a repetitive task and took several minutes, with participants usually choosing the same type of item, for example the cheapest one throughout all the products. However, by applying this method it could be revealed that participants' behaviour cohered with their reported shopping behaviour and attitudes. On average interviews took about 20 minutes.

Observations happened naturally, meaning that while having been in the case locations and their vicinity I observed the environment, the people and social interactions (see 4.4.4 for

⁶ Morrisons was chosen as it offered a broad variety of different types of the same product.

more information regarding observations). I recorded or noted observations as well as resulting thoughts and transcribed those later.

The process was repeated during a field trip to Copenhagen from mid-September to mid-October 2017 in order to gather data from TGTG in Denmark. There, the participants were not shown pictures of the food items. This process was not considered necessary, as an attitude-behaviour gap was not identified when examining the coherence of behaviour and attitude earlier with participants in the UK. Moreover, this method was time-consuming and repetitive, participants did not seem to enjoy the process after the third or fourth picture. Also in Copenhagen, some (8) interviews with non-participating restaurants were not recorded as it was either impractical in the situation due to the limited time the participant could spend, or because the employees were uncomfortable being recorded. Notes were taken, a summary was recorded directly after the interview and transcribed later.

TGTG was more established in Copenhagen compared to Birmingham, and subsequently more TGTG partners existed and more primary data could be collected in Copenhagen. According to the map function of the app, which shows the number of TGTG partners in a certain area, there were more than 200 restaurants using TGTG in Copenhagen and only 6 in Birmingham in 2017. Figure 4.3 shows screenshots of the TGTG maps for Birmingham and Copenhagen. The numbers in the blue circles indicate the number of TGTG partners in the area of the circle. The numbers of TGTG restaurants in Birmingham and Copenhagen do not cohere with the numbers mentioned earlier, as these screenshots were taken in 2019. This shows that the number of TGTG partners is growing in both locations while the different scope of TGTG in Birmingham and TGTG in Copenhagen is still notable.

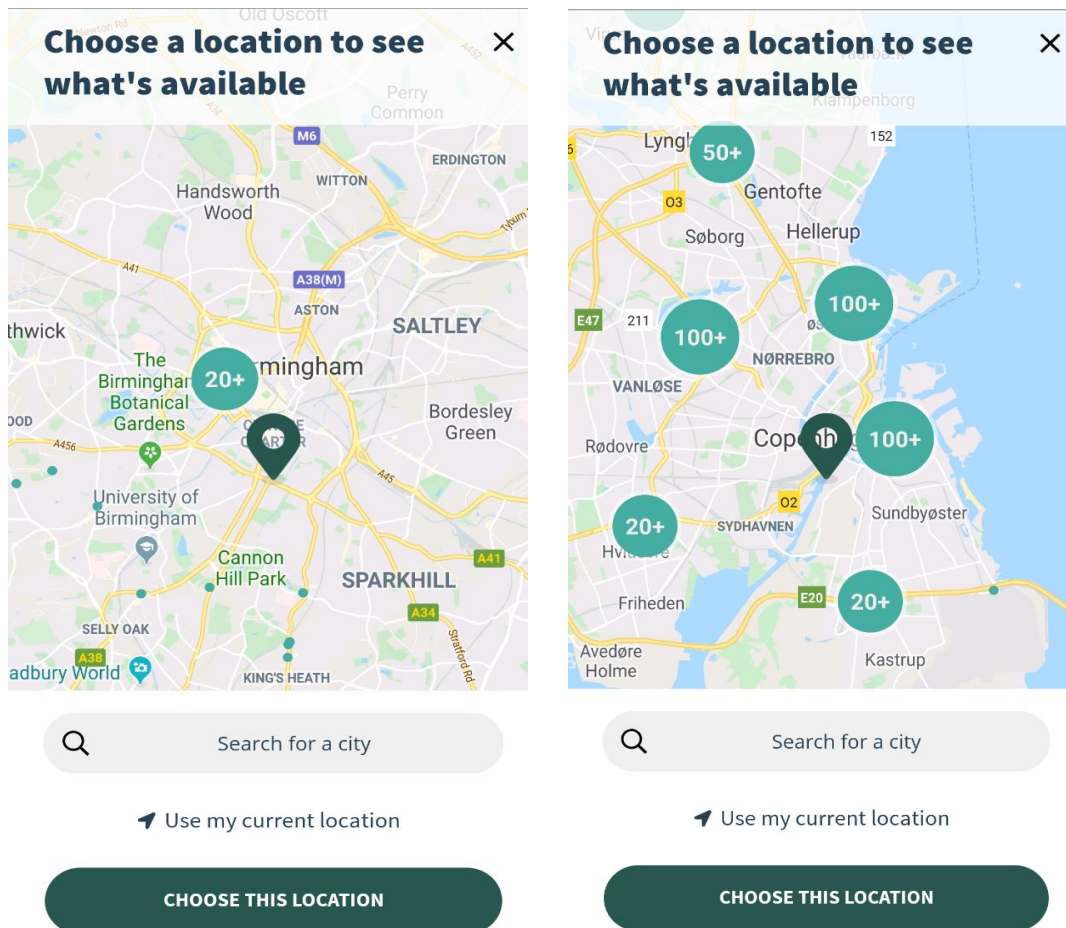


Figure 4.3: TGTG map examples of Birmingham (left) and Copenhagen (right) (author, 04.11.2019)

Before and after the field trip to Birmingham, interviews via Skype took place with a UK TGTG manager. She tried to put me in touch with the founders, and I also tried to contact the CEOs of TGTG UK directly, but unfortunately, I never received a reply. The manager explained that the CEOs were very busy and therefore probably did not have the time to communicate with me. In Copenhagen, I obtained the contact details of another TGTG manager who also was unable to meet me. Lastly, I visited the TGTG head office in Copenhagen, but my request for an interview was unsuccessful as the receptionist informed me that all TGTG employees are too busy to respond to research requests, of which they receive a lot (and they too were unable to answer any questions). Moreover, they did not have any promotional material or brochures I could take. However, the interviews with the TGTG manager were extremely valuable and insightful.

The following table (Table 4.3) provides an overview of the interviews conducted for the case TGTG. Interviews took place in Birmingham, Copenhagen and via Skype. Participants were either TGTG employees ('TGTG manager'), employees of the restaurants partnering

with TGTG ('TGTG partner'), employees of restaurants not partnering with TGTG ('non-participating restaurants'), people who purchased a TGTG meal ('TGTG customers') or people who were not using TGTG, and not working for a restaurant related to TGTG ('consumers'). The table illustrates how many interviews were conducted with the different types of participants in each location. Participants were interviewed individually and interviews were recorded, unless indicated differently. The next section outlines how data collection was realised for the surplus supermarkets, the cases Niftie's and Wefood.

Location	Participant classification	Number of interviews	Number of participants
Coventry (Skype)	TGTG manager	2	1
Birmingham	TGTG partner	3	3
Birmingham	Non-participating restaurants	4 (2 unrecorded)	4
Birmingham	TGTG customers	3	3
Birmingham	Consumers	3	3
Copenhagen	TGTG partner	9 (1 group interview)	10
Copenhagen	Non-participating restaurants	15 (8 unrecorded) (2 group interviews)	17
Copenhagen	TGTG customers	5 (2 group interviews)	8
Copenhagen	Consumers	7 (2 group interviews, 1 focus group interview)	12

Table 4.3: Overview of interviews for the case TGTG (author)

4.4.3 Wefood and Niftie's

This section explains how data were gathered for the cases Wefood and Niftie's. Data collection from the surplus supermarket Wefood in Denmark is outlined first, followed by the description of the data collection process conducted for the case Niftie's, a British surplus supermarket. Pictures of the shop windows of the two surplus supermarkets are presented below (Figure 4.4).



Figure 4.4: Shop windows of Niftie's (top) and Wefood Amager (bottom), 2017 (author)

The field trip to Copenhagen to collect data for the case TGTG also served to collect data from the surplus supermarket Wefood, which had two stores in Copenhagen and was founded by Danish Charity (DC). Business representatives included volunteers who worked in the stores, were part of the supply team or performed the role of project leaders and DC employees, managers of Wefood. The Wefood stores were visited and volunteers as well as customers were directly contacted in the stores. Consumers were approached in the

vicinity of the store but also in other areas of Copenhagen. Because Wefood struggled with a shortage of staff, I had the opportunity to work as a volunteer in the Wefood store in Amager. This facilitated observations as well as the recruitment of customers and business representatives as research participants. Interviews were conducted either in a quiet office room, which was part of the store, in the shopping area directly or in a café next to the shop (this was mostly true for customers and consumers of the store in Nørrebro, as there was a nice café next to the store). Interviews were recorded and transcribed later (see 4.4.4 for more information regarding interviews and observations).

Working for Wefood facilitated access to business records (following the correct ethical and authorisation process) indicating sales information and volunteer working schedules and enabled me to arrange interviews with the management team. Furthermore, I gained full insight into the daily processes of the surplus supermarket. Thus, I could identify the factors influencing business operations and understand barriers and drivers for the sale of surplus food. Despite operating as a volunteer, primarily I acted as an independent PhD student researching market-based solutions to food waste and introduced myself as such to all participants to avoid receiving biased answers. Customers might have provided more positive answers and less criticism if they perceived me as a member of staff. Moreover, I was not wearing the branded Wefood T-shirt or an apron, which most staff were. Therefore, I believe that I was perceived as an external researcher and received honest answers from participants. The fact that participants openly shared their opinions containing positive as well as negative aspects of Wefood supports this assumption (for information regarding positionality see 4.7.1).

DC also operated second-hand clothing shops to generate profit for the charity. The donation and sale of second-hand clothes was more common than the donation and sale of surplus food, while the latter is a perishable product, which adds additional challenges. However, as these businesses followed the same business model as Wefood and were more established and successful, I also visited these stores in Amager and Nørrebro, the same boroughs where the Wefood stores were located. The purpose was to understand the challenges and successes these businesses experience and how they overcome difficulties related to their business model. These insights were useful to better comprehend similar successes and challenges Wefood experienced. I interviewed volunteers from both stores. In Nørrebro two volunteers worked together and both answered my questions. As they were jointly answering my questions with the focus having been on the content of the interview (not the interaction of the participants), this was a group interview (Roller and Lavrakas

2015). Further group interviews were conducted with some customers, mostly couples, and Wefood volunteers (see 4.4.4).

To also gain insight from the potential suppliers, to understand their perception of the surplus supermarket and the reasons for or against redistributing their surplus food to Wefood, I visited several supermarkets in Amager. These included a range of supermarkets from cheap ones like Supermarket 1 or Luper to the expensive brand Orma with none of those actually supplying surplus food to Wefood. Moreover, I interviewed an employee of a new store of the supermarket chain Foodo in Amager, as another Foodo store in Copenhagen donated its surplus food to Wefood. Furthermore, I consulted business representatives of several supermarkets that participated in a joint voluntary sustainability agreement, which did not include the redistribution of surplus food to Wefood. Respondents included store employees and store managers. Two supermarket representatives declined to provide any information and some declined to be recorded (notes were taken). Luper representatives provided very little information and referred me to the customer service line (the phone number was presented on a big banner in the stores) where nobody ever answered my call.

The table below (Table 4.4) provides an overview of the interviews conducted for the case Wefood. Interviews took place in the vicinity of the two Wefood stores in the districts Amager and Nørrebro in Copenhagen and in other parts of Copenhagen ('Copenhagen'). Participants included people working for Wefood as paid employee or volunteer, people who shop at Wefood ('customer'), people who neither work for Wefood nor shop there ('consumer'), volunteers working for the second-hand shops run by the same charity as Wefood (DC), volunteers organising a food sharing initiative in Copenhagen and employees of regular supermarkets. The table indicates the amount and type of interviews conducted in each location per participant type.

Location	Participant classification	Number of interviews	Number of participants
Copenhagen, Amager	Volunteer	5 (1 group interview)	7
Copenhagen, Amager	Employee, manager	1	1
Copenhagen, Amager	Customer	4 (1 group interview)	5
Copenhagen, Nørrebro	Volunteer	1 (group interview)	3
Copenhagen, Nørrebro	Customer	7 (1 group interview)	8
Copenhagen	Consumer	10 (2 group interviews, 1 focus group interview)	15
Copenhagen, Wefood head office	Employee, manager	1	1
Copenhagen, Amager	DC 2 nd Hand Shop Volunteer	1	1
Copenhagen, Nørrebro	DC 2 nd Hand Shop Volunteer	1 (group interview)	2
Copenhagen	Foodsharing Organisers	2	2
Copenhagen, Amager	Supermarkets, employees and store managers	7 (3 recorded full interviews, 4 unrecorded brief chats)	7

Table 4.4: Overview of interviews for the case Wefood (author)

To investigate Niftie's, I arranged a day with the owner in the store in Dover. During the day, the business representative was interviewed whenever he had time in between serving customers, calling potential suppliers or talking to media representatives. I spent most of the day in the shop, interviewing and observing customers, following the same process as for TGTG in Birmingham. Customers were approached directly by either the owner or me, and the interviews took place within the shop in a quiet corner. Consumers were identified in the surroundings of the store, on the street or in the shops around, and the interviews

happened in the same location in which the participant was contacted (e.g. in a shop, on the street, in an office). Three potential consumers, approached outside the shop, actually were customers and interviewed as such. All but one interview were recorded and transcribed later. One consumer, who entered the store for the first time but did not buy anything, was not recorded, as he had very little time and declined to be recorded. Notes were taken, a summary of the interview was recorded directly after and transcribed later. Again, interviews took on average 20 minutes (see 4.4.4 for more information regarding interviews and observations).

An overview of the interviews conducted is presented below (Table 4.5). All interviews took place in Dover, where Niftie's is located. Participants included the founder of Niftie's ('business owner'), people who shop at Niftie's ('customers') and people who do not shop and not work at Niftie's ('consumers'). The table indicates the number of interviews conducted with each of the three participant groups.

Location	Participant classification	Number of interviews	Number of participants
Dover	Business owner	2	1
Dover	Customers	5	5
Dover	Consumers	6 (1 unrecorded)	6

Table 4.5: Overview of interviews for the case Niftie's (author)

While this and the previous section (4.4.2) described how data were collected for the different cases, the following section (4.4.4) provides more detailed information about the application of the data collection methods.

4.4.4 Interviews, observations, reflective notes and ethical guidelines

This section provides an overview of the research participants, the interview questions, the observation guide, the conducted group interviews and the role of reflective notes. Furthermore, the ethical guidelines for this research are outlined concluding this section.

Overall, demographically diverse participants were selected where possible to gain insights from people with different social backgrounds. It also has to be noted that there was no clear separation between Wefood and TGTG consumers, customers and business representatives. Wefood consumers, customers and volunteers sometimes also represented TGTG consumers or customers or worked at businesses that partnered with TGTG and vice versa.

The table below (Table 4.6) summarises how many interviews were conducted for each case, per location and participant type (see 4.4.2 and 4.4.3. for further explanation). It has to be remembered that interviews for one case sometimes contained information regarding another case (e.g. a Wefood volunteer who also talked about using TGTG). Most consumers responded to questions about different cases. Therefore, 36 interviews contained information regarding TGTG, but 7 of those interviews were conducted with Wefood consumers, meaning the overall amount of interviews is lower than the sum of the interviews per case. Of the 90 conducted interviews 78 were transcribed (see 4.5) resulting in 74 participants (some participants were interviewed several times at different stages of the research, one example is provided in 4.4.5). An overview of all participants can be found in the annex (Appendix Chapter 4, C, Table A3).

Case	Location	Participant classification	Number of interviews
TGTG	Birmingham	Business representative TGTG	2
		TGTG partner	3
		Non-participating restaurant	4
		Customer	3
		Consumer	3
		TOTAL	15
Niftie's	Dover	Business representative	2
		Customer	5
		Consumer	6
		TOTAL	13
TGTG	Copenhagen	TGTG partner	9
		Non-participating restaurant	15
		Customer	5
		Consumer	7 (Included in Wefood consumers)
		TOTAL	36
Wefood	Copenhagen	Business representative	8
		Customer	11
		Other organisations related to Wefood	4
		Consumer	10
		TOTAL	33
All cases		<u>TOTAL</u>	<u>90</u>

Table 4.6: Overview of interviews per case (author)

Most interviews were conducted face-to-face and took place in the case businesses and their surroundings, according to the preferences of the participant. If the interview was performed in a café, the participants were offered a hot drink as an incentive. When face-to-face meetings were not possible, interviews were conducted via Skype. Only one interview with a TGTG account manager was not face-to-face. All interviews were in English, recorded and then transcribed.

Interviews were semi-structured, meaning that an interview guide with questions was applied flexibly. The interview questions were based on previously identified gaps in literature and the information I aimed to gain. Questions for business representatives from the surplus supermarket model were different to questions for TGTG partners. The interview guide for customers and consumers included a few case-specific questions and a section that was applied to consumers only. Sometimes business representatives were also TGTG customers, or Wefood customers also used TGTG, as explained in the previous paragraph. In those cases, the appropriate questions were drawn from the applicable interview guides and sections. Themes that were covered in customer and consumer interviews were personal background and shopping habits, consumer experience with the case business, ethical considerations, food waste behaviour and the appreciation of food. Business representatives were asked about their role, the background of the business, the business model, challenges and drivers they are experiencing in selling surplus food, their customers and marketing efforts, the business's food waste, business development and research that could be useful to them. A summary of all questions as well as the observation guide can be found in the appendices (Appendix Chapter 4, A Tables A1, A2, and B).

Observational data included information about the store layouts and atmosphere, promotional material, the products on offer, customers (number, demographics) and their behaviour (their movement within and towards the business, their purchases and non-purchases, verbal and non-verbal communication), business representatives (their behaviour, attitude, communication) and the neighbourhood of the businesses. When collecting these data, it was important to be accurate in recording or noting the observations by stating what or who was observed when and where and by carefully distinguishing comments, quotes and meanings but also personal impressions and feelings (Robson and McCarten 2016). To be as accurate as possible, I wrote a daily observation report, as later memories could be biased. I tried to avoid being selective with my attention via reminding myself to always look for more information.

Impromptu group interviews involved interviewing couples, colleagues or groups of friends who entered the case business together or were together while they were approached. While these group interviews were not planned, I had the intention to conduct a focus group interview to experience how consumers explain to each other their shopping behaviour and their reasons for or against buying surplus food. Thus, a focus group interview was conducted with the Copenhagen based international meditation group that I joined one evening. The members agreed to stay after the meditation and to take part in a focus group interview. The location was suitable and provided a relaxed environment that was familiar to the participants. The participants were very diverse, representing different nationalities, ages, income groups, attitudes and had varying knowledge of and experience with the case businesses. As they had been part of the same meditation group, the participants knew each other a little bit and shared an interest in meditation. The meditation was usually followed by discussing everybody's experience during the session. Hence, the participants were used to openly sharing their thoughts within this group. Participants of natural groups are more likely to share unpopular opinions than participants of pre-formed groups (Miller et al. 1998). However, they only met for meditation and therefore did not know each other's attitudes regarding other aspects of life. This set-up increases the chances of participant engagement while creating a broad spectrum of responses (Rabiee 2004).

Within this focus group interview, participants discussed their shopping habits and reasons for as well as exceptions to those with each other and also shared their experiences of shopping at Wefood and using TGTG. Consequently, the purpose of running a focus group interview was accomplished. Only one focus group interview was conducted as it provided the insights I wanted to gain and as, together with the rich data gained from the numerous interviews, saturation was reached (see next section for more detail). The following table (Table 4.7) provides an overview of the group and focus group interviews. The table indicates the type and amount of participants per conducted group or focus group interview as well as the relation between the participants and the location where the interview was realised. Overall, 11 group interviews and one focus group interview were conducted in Copenhagen, while group interviews consisted of two or three and the focus group interview of four participants. Participants knew each other because of being colleagues, friends or couples.

Interview type	Participant classification	Location	Number of participants	Relation between participants
Group interview	TGTG non-participating restaurant and TGTG customers	Copenhagen, Food Market, at the business	2	Colleagues
Group interview	TGTG non-participating restaurant	Copenhagen, at the business	2	Colleagues
Group interview	TGTG restaurant and TGTG customer	Copenhagen, Food Market, at the business	2	Colleagues
Group interview	Wefood, volunteers	Copenhagen, Wefood Amager store, back office	3	Colleagues
Group interview	Wefood volunteers	Copenhagen, Wefood Nørrebro store, behind the counter	3	Colleagues
Group interview	DCA volunteers	Copenhagen, Nørrebro DCA shop	2	Colleagues
Group interview	Wefood customers	Copenhagen, Wefood Amager store	2	Couple
Group interview	Wefood customers	Copenhagen, Wefood Nørrebro store	2	Couple
Group interview	TGTG customers	Copenhagen, outside TGTG restaurant	3	Friends and colleagues
Group interview	Consumers	Copenhagen, the couple's home	3	Couple and a friend
Group interview	TGTG customers	Copenhagen, hostel (the friends were living there for a couple of months)	2	Friends
Focus group	Mixed group of consumers and customers	Copenhagen, a member's home	4	Meditation group members

Table 4.7: Group interview overview (author)

During the field trips, I took notes in the course of but especially at the end of every day, to reflect on the experiences I made, the interviews I conducted and the situations and behaviours I observed. I would either record and transcribe later or directly write down what was relevant for the study, how I felt in certain situations and further occurrences I noticed. The latter consisted of non-specific general observations I made and ideas from conversations with people, such as my supervisors, participants, friends or people I talked to while I was in the field. These reflections were very useful to remember facts and feelings that affected the research and me as a researcher.

This study was granted ethical approval by Coventry University's Ethics Committee prior to collecting data, undertaken in accordance with the University guidelines for ethical research (Coventry University 2009) (see second page for the ethics certificate). The informed consent by all participants in written form was especially relevant for this research. All participants of the study needed to declare that they agreed to take part and understood the purpose of the study, how they were involved and how evidence related to them would be processed and published. Only English speakers were considered as participants for this study to eschew misunderstandings caused by language barriers. To avoid another risk related to health and safety, individual, direct interviews with strangers were conducted in public spaces. The research did not require travel to high- or medium-risk countries, it neither involved vulnerable people nor the publishing of personalised sensitive data and therefore could be classified as medium-risk (ICO 2016, International SOS 2016, Oxford University Press 2016). Proper risk assessment formed part of the ethics approval. All collected data were safely stored on password-secured hard drives and will be eliminated in September 2022. The next section describes how the end of the data collection process was determined.

4.4.5 Determining the end of the data collection process

This section explains how saturation was reached and the end of the data collection determined. Most primary data were collected in September and October 2017 by conducting interviews and observations as outlined in the previous sections (4.4.2 – 4.4.4). For each case, more participants were added and more interviews conducted until no new topics arose and answers recurred. This point was reached earlier for the cases in the UK than for the cases in Denmark, which can be explained by the different scope of the case businesses in the two countries (see 4.6 for more information). The table below (Table 4.8)

provides one example for each case illustrating recurring answers regarding a certain topic. When this happened for most questions no new topics arose and saturation was reached.

Case	Wefood
Question	Do customers consume food past its 'best before' date?
Answer	Customers tend to eat food past its 'best before' date and use their senses to evaluate it.
Examples	<i>'(...) you can smell and see and taste if food is not well.'</i> (Rita)
	<i>'(...) few months or few days after the date, I think it doesn't matter.'</i> (Hans)
	<i>'(...) if it's something like yoghurt I try to see if it turned sour and if it isn't then I'd have no problem eating it.'</i> (Hector)
	<i>'(...) smell it and if it's not, it smells ok, I eat it.'</i> (Belinda)
	<i>'(...) if you look at it and it looks fine, you know, using the common sense, I eat (...)'</i> (Harry)
Case	Niftie's
Question	What do customers like about Niftie's?
Answer	Customers appreciate the cheap prices.
Examples	<i>'It's cheap (...)'</i> (Stella)
	<i>'(...) good realistic prices'</i> (Martin)
	<i>'Cheapness. (...) Money saving.'</i> (Mia)
	<i>'(...) when I'm here I don't worry too much because I know it's not gonna be full price, so I can allow myself treats I wouldn't actually buy.'</i> (Hella)
Case	TGTG
Question	Why do customers use TGTG?
Answer	Customers use TGTG because it is convenient for them.
Examples	<i>'It's when I'm home late for dinner, I do it there, or when I don't get to make lunch for the day after, I go down and pack a big box to take it with me (...)'</i> (Edgar)
	<i>'(...) most important thing for me definitely it's that it saves time.'</i> (Finn)
	<i>'I was doing an errand, so I ended up on my way back looking through the app (...) and saw that it was open and I live right down here, 500 m this way. (...) I usually just do it as practical as it can be, so it's usually the same ones and it's usually the very closest ones.'</i> (Helge)
	<i>'It's easy (...)'</i> (Carl)
	<i>'I live nearby, so it's very easy for me (...) And it's one of the things when I choose a place to go and buy this food. (...) it has to be convenient, (...)'</i> (Susan)

Table 4.8: Examples of recurring answers indicating saturation

Considering Morse's (1994) suggestions regarding the number of participants required to reach saturation, 54 participants would have been needed for this study (4.3). According to Guest, Bunce, and Johnson (2006), 36 interviews should have been conducted, while the number of interviews conducted for other food waste studies ranges from 7 to 44. The most important criterion, however, is that sufficient data have been collected to answer the research question (O'Reilly and Parker 2013). Therefore, these numbers can be used as benchmark but do not guarantee saturation. Nevertheless, for this research 90 interviews were conducted of which 78 were transcribed (see 4.5), resulting in 74 participants. Hence, saturation was achieved also regarding the benchmark suggested by scholars. Whether the data were rich enough to answer the research question was determined during the analysis stage, which started immediately after the completion of the collection of primary data (4.5). If the data had not been sufficiently deep and broad, the collection of further primary data would have been required, which was not the case.

The case businesses were launched in 2016 (Niftie's and Wefood) and 2015 (TGTG) and thus were in a developing stage. Even though the main data collection process happened in September and October 2017, I continued researching secondary data about the development of the cases until autumn 2018. This endpoint was chosen as Niftie's had ceased, Wefood had achieved profitability and TGTG had reached a stable business development phase. Moreover, the schedule of the PhD required me to terminate data collection at that time.

The secondary data I collected mostly consisted of updates the surplus supermarkets posted on Facebook and promotional emails TGTG sent to its customers. Niftie's regularly posted public updates on Facebook which I followed and included in my study. Via videos the owner of Niftie's, Nico, explained in detail how the business evolved and also shared his feelings regarding this development. I watched the videos and read the Facebook page content, transcribed interesting parts of the videos, took notes and included the documents in my data analysis. TGTG periodically sent promotional emails with updates to their users. I read those emails, followed updates on the website, took notes and included the data in this study as well. The updates from TGTG represented promotions and reports on the number of saved meals. To find out how Wefood developed, I also investigated updates on their Facebook pages, which mostly consisted of the advertisement of new products and did not include detailed reports as in the case of Niftie's.

Moreover, I was able to visit both Wefood stores a second time and to collect more primary data. In June 2018, I presented at the Sustainable Consumption and Research Action Initiative Conference (SCORAI) 2018 and therefore spent a week in Copenhagen. I used the opportunity to visit the Wefood stores and interviewed the volunteers as well as the head of Wefood to find out how the business had evolved since my last visit. This was useful, as I learned how Wefood tackled some of the challenges experienced earlier, which successes were achieved and which challenges remained. I also interviewed four consumers I had interviewed before to learn about their engagement, or non-engagement, with the case businesses. These interviews are not counted in Tables 4.3, 4.4, 4.5 and 4.6 as they happened later. In total I conducted 6 more interviews with four consumers and five business representatives (3 volunteers, 1 manager). In the case of Niftie's a second visit was not necessary because of the detailed Facebook videos. Visiting further restaurants partnering with TGTG also was not expected to provide further useful information, while interviewing TGTG employees was not possible (see 4.4.2).

The chart below (Figure 4.5) provides an overview of the data collection process. The following section explains how thematic analysis was applied to analyse the collected data.

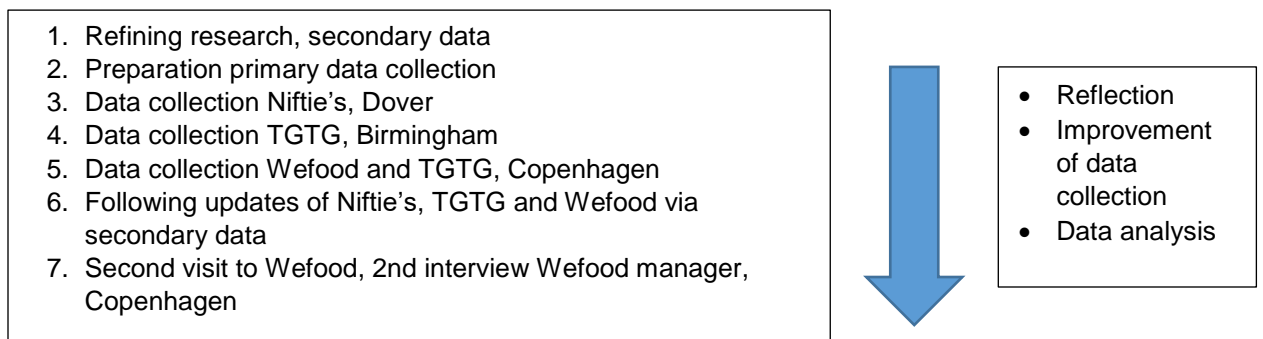


Figure 4.5: Data collection process (author)

4.5 Data analysis via thematic analysis

This section describes the data analysis process. First, thematic analysis was chosen as method; second, the data were transcribed; third, the data were coded to develop themes, which represent the results of this research, and fourth the findings were organised. These steps are considered to be part of the data analysis process as their execution affect the analysis and consequently the results.

To explore the data and to create meaning, thematic analysis was applied. This method enables the researcher to identify patterns in the data and to interpret those to create concepts linking the data to theory and answering the research questions (Braun and Clarke 2006). Thematic analysis is a flexible method used within various sciences to understand different viewpoints while not being bound to a certain theory or epistemology (Boyatzis 1998; Braun and Clarke 2006). This freedom and flexibility offer advantages to the researcher engaged in the exploration of a new phenomenon and support a comprehensive analysis. As the researcher is not restricted in any way, the data can be analysed with an open mind, allowing the data to speak and unexpected themes to emerge. To understand a phenomenon and to interpret meaning, thematic analysis is a useful tool (Boyatzis 1998).

For this study an inductive approach was implemented; hence, the identification of themes was data-driven rather than determined by theories or pre-developed codes (Braun and Clarke 2006). Such approach is especially useful to investigate phenomena about which not much theoretical knowledge exists (Siggelkow 2007), such as businesses selling surplus food commercially to consumers. Examining the data without bias and assumptions in this way allows the researcher to fully acknowledge the information gathered in the field and increases the possibility of discovering something new (Gioia, Corley, and Hamilton 2013). However, as I had acquired knowledge by reading relevant literature and by undertaking the data collection, it was impossible to be completely uninformed. Therefore, I consciously tried to neglect prior knowledge and to code the data with an open mind during the first of two coding stages. Thus, the data obtained some structure and initial interesting observations were made. In the second coding stage, literature and theory were considered in order to link new understanding to existing knowledge while the focus was on creating meaning (Gioia, Corley, and Hamilton 2013; Braun and Clarke 2016).

Coding was completed in two stages, first an open stage and then a more analytical phase, with codes having been defined and applied consistently (Boyatzis 1998; Bazeley and Jackson 2013). However, as outlined in the description of the coding process later in this

section, the coding process was iterative, non-linear, and so the two coding stages were not completely separate with some meaning having been already coded in the first coding phase and some structuring still occurring during the second stage. Codes were discussed regularly with my supervisors to validate the conclusions drawn. Finally, themes were developed by understanding the relation between the codes and by identifying significant patterns of common meaning (Bazeley and Jackson 2013; Braun and Clarke 2016; Connelly and Peltzer 2016). Themes contain the findings to answer the research questions (Connelly and Peltzer 2016).

After the thematic analysis method was chosen, the transcription of collected data formed the second step of data analysis. Transcription forms part of the data analysis process, as during transcription analytic steps are undertaken, such as evaluating which data qualifies for transcription and highlighting significant data. Primary data included recorded semi-structured interviews, reflections, field notes and observations. Interviews that were not considered important were not transcribed, as the resources for this study were limited. Out of approximately 100 interviews, 78 were transcribed. The interviews that provided relevance for the research objectives, depth, good audio quality and clear communication as well as diversity among participants were selected for transcription. To not restrict the following analysis, a rich dataset enabling a transparent and reflective analysis was created by transcribing every clear word and emotion, such as laughter or passion, expressed by the participant or the researcher (Holtan, Strandbu, and Eriksen 2014). When a word was not clear even after having listened to the section several times, question marks were noted in the transcript. Interview content was not edited, meaning that grammar errors occur. Many participants are not native English speakers, thus grammatical flaws were expected and did not harm understanding. Whenever I transcribed something that seemed to be very significant, the section was highlighted in bold letters. I transcribed all data myself, and hence I knew them very well. The transcription process started directly after data collection had been completed to benefit from my vivid recollections. After five months, all data were transcribed, uploaded into the software Nvivo and ready for coding.

The process of coding describes the categorisation of parts of the data, the classification of content as belonging to certain topics. Content can be coded multiple times, meaning that the same data can be allocated to different topics, codes, while the coding unit can be as short as a word and as long as whole paragraph (Babbie 2017). I chose fifty interviews to start with in order to get an overview of the data, to evaluate if they were rich enough and to consider if the first analysis provided useful insight. This strategy allowed me to recognise at an early stage if more data collection was needed. First analysis results were presented

to and discussed with my supervisory team and colleagues who approved my coding structure as well as the codes themselves and found my data to be rich. Further positive and inspiring feedback was gained from academic audiences during a seminar at Keele University (01.05.2018) and the SCORAI conference in Copenhagen (30.06.2018), where I presented this early stage of my work. Moreover, I continuously increased my knowledge of thematic analysis, coding and the features of Nvivo by reading relevant literature (Boyatzis 1998, Bazeley and Jackson 2013; Gioia, Corley, and Hamilton 2013; Braun and Clarke 2006; 2016; Connelly and Peltzer 2016; Saldana 2016) and by talking to other researchers using the same or a very similar method.

During data collection in the field and also while transcribing, I started to sense some important repetitive topics. However, when beginning the coding, I read all data without bias and assumptions and coded content that I perceived as relevant, so-called open coding (Babbie 2017). Still, the first codes identified represented those initial ideas. While reading the transcripts, I created, refined and changed codes. After having finished coding the first selection of interviews, I regrouped the codes to differentiate between data from a consumer perspective ('reason consumers') and data from a business perspective ('business perspective').

To further order the codes according to these two main groups (consumers and businesses), I read coded content that entailed both, data representing consumer and business perspectives, and separated it by recoding some of the data. Additional separate code groups were identified, such as 'External factors' (e.g. culture, upbringing, etc.), 'Communication' (how did people hear about the business, who did they tell about it), 'Type consumer' (which kind of people shop there according to business, customer and consumer perspective), 'TGTG' (a mix of TGTG related data that did not fit anywhere else), 'Food waste at home or business' (separated in household and business food waste via sub-codes to record food waste behaviour) and 'Shopping frequency'. These main codes were structured into further sub-codes. For example, the main code 'reason consumers' had many sub-codes, such as 'price' or 'food quality' among others. Some of these sub-codes could be broken down into further sub-codes. 'Food quality', for example, was divided into 'Appearance of food', 'Not minding older or imperfect stuff' and 'Freshness of food'. The coding structure of this early stage in the data analysis process is presented below (Figure 4.6).

1 Communication	4 Food waste at home	4.1 Food Waste
2 Type consumer	or business	Business
3 TGTG		

4.2 Food Waste Consumer	6.10.5 Personal connection	7.3.3 Expertise
4.3 Food waste bin	6.11 Buying from reduced section	7.3.4 Motivation
5 Shopping Frequency	6.12 Good idea concept	7.4 Charity
5.1 Every day or every second day at least	6.12.1 Good idea but not use it	7.5 Business Success
5.2 More often than weekly	6.13 Experience	7.5.1 Challenge
5.3 Weekly	6.13.1 Doing good	7.5.2 Goes Well
5.4 Less than weekly	6.13.2 Inspiration and surprise	7.6 Getting surplus supply
6 Reasons consumers	6.13.3 Nice staff and social feel, friendly atmosphere	7.7 Reducing food waste
6.1 Price	6.13.4 Empowerment	7.7.1 As Business
6.2 Range of stock	6.13.5 Normal supermarket experience	7.7.2 Have no waste
6.2.1 Having choice	6.13.6 Having time	7.8 Personal connection relation
6.3 Valuation of food	6.13.7 Like normal cheaper supermarket or not different	7.9 Business
6.4 Food Quality	6.13.8 Confusion	7.9.1 Model
6.4.1 Appearance of food	6.14 Dumpster Diving	7.9.2 Marketing
6.4.2 Not minding older or imperfect stuff	6.15 Buys second-hand clothes	7.9.3 Development or Plan
6.4.3 Freshness of food	6.16 Awareness of shop	7.9.4 Start
6.5 Reducing Food Waste as consumer	6.17 Willingness to try or try again or try regular	7.9.5 Location
6.6 Best before date, eating stuff out of date	6.17.1 High	8 External Factors
6.7 Environmentalism, ecology	6.17.2 Is a regular	8.1 Environmental education
6.7.1 Vegan or vegetarian	6.17.3 Medium	8.1.1 Food waste is an issue awareness
6.7.2 Buys organic	6.17.4 Low	8.1.2 Responsibility to tackle environmental issues
6.8 Health	7 Business perspective	8.1.3 Others are responsible
6.9 Food safety	7.1 Cost or profit	8.1.4 No opinion or knowledge
6.10 Convenience	7.2 Supermarkets	8.2 Caring culture
6.10.1 Proximity	7.3 Volunteers	8.3 Upbringing
6.10.2 Opening time	7.3.1 Stock	8.4 Poverty culture
6.10.3 Being busy	7.3.2 Opening time	8.5 Location
6.10.4 Knowing shop and offer		

Figure 4.6: Coding structure early analysis stage (author)

My next step was to ‘weigh’ the codes according to which reasons for consumers to shop or not shop at the businesses were mentioned the most (Table 4.9). This was useful to identify codes containing a larger number of references that perhaps needed to be broken down further. Price and convenience represented the codes with the most references. Therefore, I investigated the relatively broadly coded data among those codes in more detail, trying to identify meaning by interpreting the content as well as the style of the discourse. Table 4.10 provides an example with axial codes developed from the open code ‘Price’. Coding already-coded content is called axial coding and is used in the analysis to discover core concepts (Babbie 2017). Thinking about meaning brought further questions up such as: ‘What does it mean for consumers to use the case business?’ Inspired by those questions, I coded relevant data again and created more open codes, sub-codes, axial codes and further refined existing codes. While coding and thinking about my data analysis, new ideas evolved and led to the generation of new codes and the updating of existing codes. Thus, the coding process evolved by adding new open codes, axial codes and enhancing established codes, with each of the actions inspiring further code development.

Code	Sub-code	Amount of References
Price		156
Convenience		110
	Proximity	37
	Opening time	21
	Being busy	19
Food quality		109
	Food quality general	41
	Appearance of food	29
	Not minding older or imperfect stuff	20
	Freshness of food	19
Experience		80
	Doing good	21
	Inspiration and surprise	18
	Nice staff and social friendly atmosphere	17
Range of stock		64
Environmental ecology		53
Reducing food waste		37

Table 4.9: Weighting of codes (author)

6.1	Price
6.1.1	accepting (acceptance of lower quality related to cheaper price – or not)
6.1.2	empowering enabling upgrading (cheap price enables people to get more / better / more eco-friendly stuff)
6.1.3	good ('good' is often mentioned in relation to cheap)
6.1.4	happiness (feel happy when getting stuff cheap)
6.1.5	irresistible (cannot resist something cheap, has to go for cheapest offer)
6.1.6	not appealing (cheap things are not appealing)

Table 4.10: Axial codes of the open code 'Price' (author)

To be able to see participant details in the data related to a certain code, I created classifications and attributes in Nvivo. All participants were entered into a table and relevant and known attributes, such as their professional role (for case business representatives) or demographics (age, gender, employment, background, if known), were allocated. This information enabled another level of analysis. Hence, I could see, for example, the attributes of participants who did not mind buying older or imperfect food.

The first coding stage of open coding was finished after two months. All data were structured by codes representing relevant topics. While coding, I developed and updated a codebook to note thoughts and the coding development. Also, ideas for the second coding stage were recorded and inspired that stage. Whereas the first coding was more superficial, open and broad, this second coding phase provided a deeper understanding by creating meaning. Questions considered in this coding stage were for example: 'How is surplus food perceived?', 'What is the meaning of the appearance of food for customers and consumers?' or 'How are customers different from consumers?' and 'Where are contradictions in the data?' During this coding stage, I followed numerous coding paths of which some led to further paths and ideas, while others were 'dead-ends'. Whenever I had the feeling of being lost and not making any progress, I distanced myself from the analysis, studied relevant books and articles, re-read literature I had read earlier in the research and then returned to describe, compare and relate my coding categories (Bazeley and Jackson 2013). Thus, new ideas evolved and further coding took place with the majority of the coding during this second stage having been axial coding. Existing codes were refined while also new codes were developed (e.g. 'Sensory Data', 'Contradictions', 'Perception Surplus Food').

I reached a point where further analysis and investigations led to similar results, so I stopped and instead looked back at the theory of diffusion of innovation (TODOI). I studied the literature again and created an overview of the relevant points from the theory and how they align with my research. Trying to see the bigger picture, to understand what is happening and how my codes relate to each other, I created a model of all my codes (Figure 4.7). During the process, some codes were re-arranged, and the coding structure was improved. I then identified relationships between the codes and added them onto the model via notes and arrows. Furthermore, I re-read the literature about thematic analysis, the method I was using, and created a summary with the requirements for a theme and the recommendations of how to identify a theme. With those in mind I created six themes relatively easily. Examining those themes with the model, I refined the themes, made sure all requirements were met and created a thematic map on paper first (Figure 4.8) and with software later. One theme was eliminated during that process, as it was not a theme but a consequence of another theme. Hence, five themes were developed, demonstrating the relationships between the codes and showing the complexity of the phenomenon of buying and selling surplus food.



Figure 4.7: Model of all codes (author)

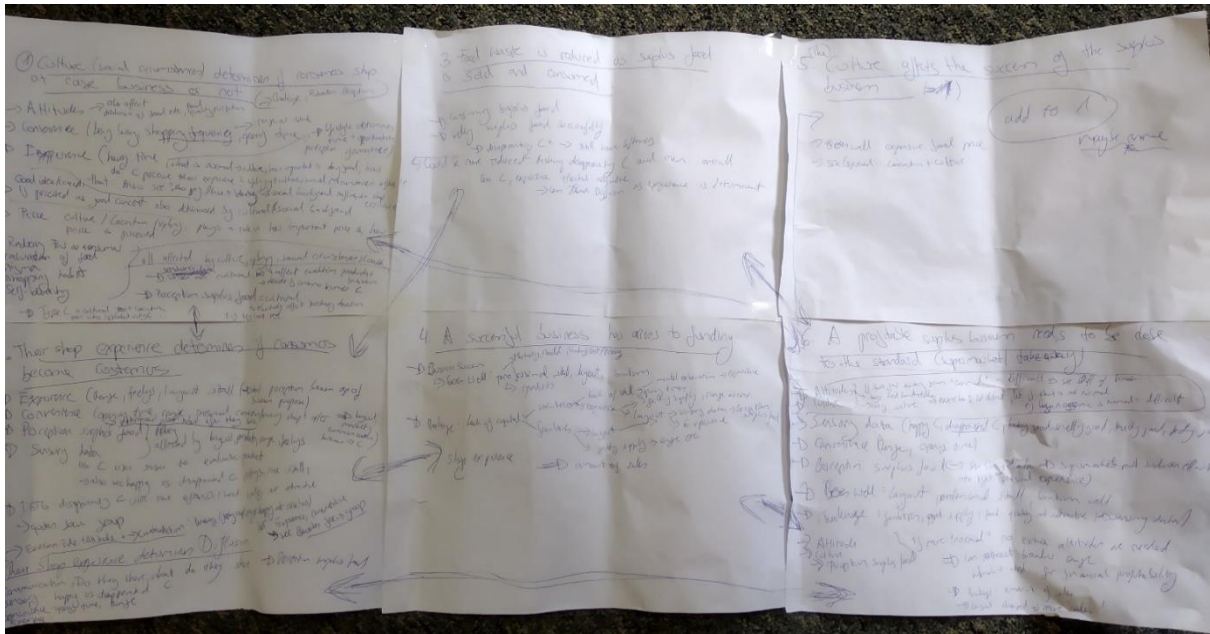


Figure 4.8: Thematic map (author)

After having discussed and agreed the results with my supervisory team, I started to write the findings chapter (Chapter 5). The process of organising the findings was another step of analysis, consisting of identifying the narrative, my contributions, strongest arguments, how I fill the research gaps and answer my research question. During that process, I realised that the fifth theme is a sub-theme of the second theme rather than being a theme on its own. The following table (Table 4.11) presents the final themes and the codes contained within each theme (sub-codes are included but not mentioned in the table). The final code structure can be found in the annex (Appendix Chapter 4, D, Table A4). Moreover, I applied the technique of pattern-matching to identify and understand similarities and differences among the case businesses with regard to each theme (Almutairi, Gardner, and McCarthy 2014). The results are presented in Chapter Five, while the following section outlines the limitations of the data collection and analysis.

No.	Theme	Codes	Explanation
1	Social circumstances determine if consumers are likely to engage with the case businesses or not.	<ul style="list-style-type: none"> • Attitudes • Convenience • Shopping frequency • Experience • Good idea / concept • Price • Reducing food waste as consumer • Valuation of food • Stigma • Shopping habit • Self-identity • Sensory data • Perception of surplus food • Type consumer • Size / spread 	All these codes are affected by social circumstances (upbringing, social environment etc.) and determine attitudes, lifestyles, values and perceptions. Thus, those determine if a consumer is willing to engage with the case businesses or not.

No.	Theme	Codes	Explanation
2	Consumers become customers if the product range satisfies them and they experience positive emotions using the case business.	<ul style="list-style-type: none"> • Experience • Convenience • Perception surplus food • Sensory data • TGTG • Quotes focus group • Environmental education and attitude • Contradictions • Business Success • Attitudes • Culture • Communication 	<p>The shop layout, location, range of products, staff attitude, all affect the experience consumers have in the shop, how they perceive and evaluate the products as well as the business. Those factors determine if consumers will buy something, come again or not. Consumers evaluate their shopping experience based on their expectations, which are affected by the status quo. Their perception of the food as well as the businesses themselves is framed by their 'normal' supermarket or takeaway experience. Environmental education and attitudes alone are not sufficient to motivate shopping at the case businesses.</p> <p>The experience consumers have at the shop as well as their social circumstances determine if and what they share about the case business within their social network.</p>
3	Surplus food is sold and consumed.	<ul style="list-style-type: none"> • Consuming surplus food • Selling surplus food successfully • Disappointing consumers • Still have leftovers 	<p>The businesses manage to sell most surplus food, while consumers report consuming the purchased surplus food. However, not all surplus food is offered for sale to avoid disappointing consumers.</p>

No.	Theme	Codes	Explanation
4	To become long-term solutions to food waste, the case businesses need access to funding.	<ul style="list-style-type: none"> • Business Success • Business • Cost / Profit / Funding • Experience • Convenience • Sensory data • Perception surplus food 	A positive consumer experience is necessary to acquire customers and to thus, create sales and profits, which can be reinvested into business development. To provide a positive consumer experience, staff and facilities are needed to create an attractive product range and layout. Funding is required to pay for those investments, which are necessary to achieve profitability and hence sustainability.

Table 4.11: Overview of themes (author)

4.6 Limitations

The limitations of the data collection and data analysis processes and the exceptions to those are explained in this section. This research is based on case studies; the collected data only refer to certain businesses in specific locations. The data represent perceptions of individuals and therefore is not representative of the whole of Denmark, the UK or the retail sector. Furthermore, the businesses were investigated at an early stage in their business development and launched at a time when the awareness of food waste as a global issue was rising. If this research was to be replicated, any changed variable, such as the time, the researcher or even the participants, could generate different data. In a few years, consumers might have different perceptions about surplus food or the case businesses while the case businesses themselves will be at a different development stage and might face different challenges, for example.

An imbalance exists when comparing the amount of data collected in Copenhagen with the data collected in the UK (57 interviews in Denmark, 21 in the UK). This difference reflects the different scale of the case businesses in Denmark and the UK. While Wefood had two stores in Copenhagen with four employees and several volunteers, Niftie's was a one-man business. TGTG had more than 200 participating restaurants in Copenhagen and only six in Birmingham. Consequently, fewer business representatives, customers and consumers were interviewed in the UK compared to Denmark. Therefore, looking at the number of interviews conducted in proportion to the size of the case businesses in the different locations, the difference in interview numbers is justifiable. In addition, this is not considered to be a limitation as saturation was reached (4.4.5). No new topics seemed to arise from customers, consumers or business representatives while responses contained recurring content. Furthermore, the data were sufficiently broad and deep to answer the research questions appropriately.

Moreover, it has to be considered that the majority of interviewed customers were students (59%, 16 customers) with all students having been interviewed in Denmark. 19% (5) of all interviewed customers were either unemployed, retired, on a zero-hour-contract or employed but with a big household depending on their income. All these customers were interviewed in the UK. Customers with regular employment represented 22% of all interviewed customers. Of those 17% were interviewed in the UK (1 customer) and 83% (5 customers) in Denmark.

Even though I tried to select participants with demographically diverse backgrounds and gathered data at different times during the day and on different days of the week, my selection depended on the availability of participants. Copenhagen hosts 11 universities and 160,000 students (The City of Copenhagen 2019), whereas Dover has no university and Birmingham eight universities with 80,000 students (West Midlands Growth Company 2019). Moreover, Birmingham and Dover have high unemployment rates (Office for National Statistics 2017; Dover District Council 2018). Another factor creating this imbalance could be that students as well as unemployed or retired people and employees on zero-hour-contracts might be more flexible and therefore might be more willing to be interviewed. However, the fact that of all interviewed consumers students only represented 25%, while 70% of all interviewed consumers were employed, supports the findings which suggest that flexible lifestyles and cheap prices are factors increasing the chances for engagement with the case businesses (see 5.2.3, 5.2.4). Hence, students and other people with a lower income and more free time seem to be more likely to shop at the case businesses. Consequently, the circumstance that of all interviewed customers students formed the majority and that those were all interviewed in Denmark, whereas all customers with no regular employment were interviewed in the UK and formed the majority of customers in the UK, does not represent a limitation.

A limitation is presented by the fact that I could not conduct an interview with a business representative from TGTG in Copenhagen. Taking into account that I tried to arrange an interview using several approaches, such as my contact person from TGTG UK, direct emails to the chief executive officers (CEOs), contacting a TGTG sales manager working in the head office in Copenhagen as well as visiting the office directly, it had to be accepted that it was impossible for me to conduct that interview. Therefore, this research is lacking business records or insights from the TGTG founders. However, a sufficient overview was provided by the TGTG Manager in the UK and the secondary data available online. Hence, despite this limitation, the data collected were sufficient to meet the aims and objectives of this research.

This study is qualitative meaning that the data analysis was determined by my interpretations of the data whilst the data on hand were created by the questions I asked and the observations I made. By cross-checking interpretations and thoughts with colleagues and supervisors and by always trying to interpret the data in as neutral a manner as possible, I tried to reduce the influence of my personality. However, this research was influenced by my personality, my decisions and my thoughts. This study might have been conducted differently by another person and the analysis might have yielded slightly

different results. Nevertheless, the rigor of the data collection and data analysis processes is presented in this chapter and guarantees the high quality of this research. Consequently, the concepts presented in this research are transferable to very similar situations. The following section describes my positionality and the experience I gained from conducting the data collection and analysis.

4.7 Reflection on my experience

4.7.1 Reflections on positionality

Reflections on my positionality, which is important as it influences the research to some extent, are presented in this section. The epistemology for this study is perceptual phenomenology (3.2); thus, my aim was to comprehend how the participants understand the phenomenon of businesses selling surplus food as accurately as possible (Hasselgren and Beach 1997). In order to be able to understand the participants' views better, I gained experience of the same phenomena covered in the interviews by working or shopping at the case businesses (Hill O'Connor and Baker 2017). First, I knew about the case businesses but did not use them, while being in the case locations. Hence, I perceived the businesses selling surplus food as consumer. Then, I shopped at both Wefood stores, at Niftie's and used TGTG in Birmingham as well as in Copenhagen and acted as customer. Moreover, I worked as volunteer in one of the Wefood stores for several weeks, operating as business representative. Consequently, I turned from a consumer into a customer and also was a business representative, meaning that I experienced all perspectives this research investigated. Sharing the experience of not using, shopping or working at the case business helped me to empathise with the participants and to understand their perspective better (Hill O'Connor and Baker 2017).

However, while performing as a researcher, observing and interviewing participants, I tried to stay as neutral as possible. According to phenomenology, human understanding is formed by one's own background and experiences, meaning that everybody perceives the world differently and there is no impartial absolute perception of a phenomenon. Hence, while trying to be as neutral as possible, it is impossible for me and for any human being to interpret something completely impartially (Rabiee 2004). Because of this issue, I reflected on my interpretations critically and purposefully applied different viewpoints to minimise the impact of my personal, subjective perception. Being aware of my own attitudes and personality helped me to control it carefully to avoid influencing participants' responses and biasing my interpretation of those (Chrzanowska 2002). Table 4.12 summarises my personality and attitudes.

The researcher's personality	
Attitudes	Experience
<ul style="list-style-type: none"> • 32 years old • Female • German • Vegetarian / vegan • Sporty • Environmentalist • Loves nature, food, animals and the outdoors • Highly motivated to support sustainability • Open, direct, positive and driven 	<ul style="list-style-type: none"> • Has lived and worked in several developed and developing countries • Worked as project and marketing manager in social enterprises

Table 4.12: The researcher's personality (author)

On the one hand, my personality helped me to gather data and to be able to recruit a significant number of participants. I, as well as my friends, perceive myself as a very direct, open, positive and genuine person, with intercultural experience, as I am German but have also lived in Namibia, Mexico, Israel, Uganda, the UK and travelled a lot. These character traits and experiences helped me to approach and convince participants in a positive way. On the other hand, my authenticity provided a challenge. Some of my first interviews in the UK and Copenhagen were conducted with friends, old and new. I asked for their honest feedback on my interview skills and their feelings while being interviewed. Knowing that I struggle to hide emotions and that I have strong unintended facial reactions, I was aware of the necessity of this practice. My friends' feedback was that I smiled slightly when they said something I liked, while I looked concerned when the opposite was the case with also my voice being warmer or colder. I am an environmentalist and favour ideas that foster sustainability. Consequently, I am happy when participants share pro-environmental thoughts and do not appreciate attitudes and behaviours that harm the environment and threaten sustainability. However, being a professional researcher, I want to be perceived as neutral to avoid leading participants into giving favourable answers (Oates and McDonald 2014). Being aware of my tendency to react in this way, I tried to ensure that I controlled my facial expressions and voice as much as possible. I avoided taking sides and revealing my personal attitude while remaining genuine.

Reflecting back on the interviews and looking at the collected data, I believe that my authenticity motivated the participants to be honest and open as well. By being me I won their trust and credibility, so that they also shared uncomfortable truths with me. Furthermore, my character and motivations, such as my curiosity and passion for sustainability, even enforced my ambition to collect valid data and to create valuable findings. Conducting research professionally is essential to developing valid findings that can be used to understand and enhance the investigated phenomenon. Whether those outcomes are perceived as 'positive' or 'negative' is not important, but they have to be valid, derived from high quality research. The next section outlines how my skills as researcher developed during the data collection and data analysis processes.

4.7.2 Development as a researcher

During the process of conducting interviews, I improved my skills considerably. As stated in the previous section, I first learned to be aware of my reaction to participants' answers and to control my body language better. This section describes further how I developed as researcher during data collection and analysis. Insights gained from data collection are described first, followed by the learnings made from conducting data analysis.

Listening to the recorded interviews at the end of the day as well as when transcribing later, I realised that I tended to talk too soon. I misinterpreted breaks the participant might have used to think or to find the right words as the end of their reply and came in with a comment or a question. Hence, I unintentionally interrupted the participant's answer and flow of speech. Fortunately, I realised this mistake relatively early in the data collection process and changed my behaviour accordingly by being more patient and calm, by letting moments of silence happen. During my first interviews, I seemed to have been insecure about silence. When I realised that I was interrupting answers, I learned to be more comfortable with keeping quiet. Only then I discovered the full benefit of remaining silent, which was that it allowed the participant to take time to think and reflect, and thus the moments of silence often prompted more information than another question.

Another important discovery was that the interviews providing the richest data were the ones that took place in a very relaxed atmosphere, for example at the participant's home or a similar familiar environment. Interviews in such a setting usually only happened with

participants I got to know a little bit before. An example is the focus group interview with the meditation group which took place in the home of one of the members after we shared a social meditation session together. A free-flowing discussion among the members took place, and I had the impression that participants were sharing their perceptions and experiences honestly and comfortably. One of the members did not have the time to stay for the interview but invited me to interview him at a later stage. Hence, one evening we met in his flat and first got to know each other a little bit better by sharing life experiences. When I then interviewed him, the atmosphere was very relaxed and the interview resembled a conversation among friends. I barely had to ask any questions, the participant would just freely talk about the topic, his attitudes and values. I gained very rich data from this interview, which lasted 75 minutes and was very enjoyable for both of us as well.

Also, interviews at the hostel lounge with long-term guests⁷ who stayed at the same hostel as I did were very relaxed and provided rich data without much input from my side. The participants and I were familiar with each other and with the interview location, as we would see each other regularly using the kitchen or lounge together. Another example of the benefits of familiarity is the interview I had with the owner of the bar where I conducted some of the interviews with Wefood customers and consumers. Because I visited the bar several times with participants, undertaking my research, we knew each other by sight and had exchanged a few words before. When I interviewed him in his bar, he was very relaxed and shared his attitude openly. He even honestly admitted that he did not care about food waste, as illustrated by this quote: *'It doesn't bother me that I throw away food.'* It was a great experience to receive such direct and honest answers.

Of course, it was not always possible to create familiarity and a relaxed atmosphere, and I also gained very good data from interviews where the situation was completely opposed to this ideal situation. The best example I encountered during my research was a Wefood customer who was willing to be interviewed but had no time, so I had to ask my questions while she was doing her shopping at Wefood. Unexpectedly, and although the interview was only seven minutes long, it provided valuable data. However, my learning was that, whenever possible, I would generate a relaxed atmosphere in a familiar environment, trying to create a comfort zone for the participant. A further important observation I made, which is essential to creating that comfort zone, is the impact of my aura and non-verbal communication as an interviewer on the participant (Chrzanowska 2002). When, for

⁷ In Copenhagen it is very difficult to find a flat and so many students or employees, who have recently moved to Copenhagen, stay for the first few months in a hostel while searching for a place to rent.

example, I assumed that the participant had limited time, I was a little bit stressed and felt rushed even though the participant did not send any signals of discomfort or the need to hurry. But by feeling stressed, I transferred this feeling to the participant, whereas when I was relaxed, my interviewee also unwound.

Moreover, I learned which environments are suitable for interviews, and which not. A café with open doors next to a busy street, for example, receives road noise, which seemed to be louder on the recording than I perceived it in the real situation. Small cafés in general were not a good choice as I discovered in hindsight, as the coffee machine was very loud and disturbed the conversation. Quiet places like the back office at Wefood provided the best acoustic quality which is important in order to not lose data in the process of transcribing. I lost some content due to noise but only very small amounts, which was not severe, especially considering that I conducted a good number of interviews (90).

Overall, I improved my interview skills during the data collection process while I also had a great time. Interviewing participants and understanding their perspectives was fun, exciting and insightful. As stated earlier, I piloted the interview questions and practised my skills in advance. However, the learnings mentioned here could only have happened in the field, as they came with increasing experience in conducting and transcribing many interviews. As a PhD student, I faced time and resource constraints, meaning that the pilot period was shorter and more constrained than the actual data collection process. Therefore, also the learning that could be gained by prior practice was limited.

The data analysis process was exciting, fun and challenging, on the one hand. I enjoyed exploring the data freely and being able to follow insights and new ideas. Furthermore, it was exciting to increase my understanding, to develop results regarding the research objectives and to make some unexpected findings as well (e.g. the role of upbringing).

On the other hand, data analysis is not a straight forward process; it requires deep immersion in the data, a free mind and the time to 'play' with the data, to try out several coding ideas. Getting lost and stuck, not making progress is part of the process. I am a very driven person and always aim to work as efficiently as possible, whereas the data analysis process cannot be described as efficient. It can even feel chaotic, in that steps are taken forwards, backwards and to the side without noticing direct progress. Therefore, I experienced times where I questioned my research and my skills. Advice and support from my experienced supervisory team was very helpful in recognising this mismatch of my preferred method of operating and the nature of qualitative data analysis. This realisation

helped me to regain my confidence and to be able to make a plan. I realised that I needed an unoccupied mind and time to fully immerse myself in the data to be able to enjoy the analysis. Whenever I had to submit a chapter or paper, my mind was too occupied and I had to complete the outstanding task first. Therefore, I interrupted the data analysis for a few busy months in summer 2018 to write several chapters and a conference paper, to go to a conference and to undertake further data collection. Thereafter, I continued the data analysis process with a free mind and successfully completed it by the end of 2018, on schedule.

Another learning experience was to manage the software Nvivo and to be able to benefit from its analytical options. Using the software bears a risk as well as a benefit, which I was evaluating in advance by talking to different users and by testing it. I minimised the risk, but sometimes daily progress still was lost when the software failed. Moreover, I was dependent on the software to be able to work on my data analysis. On the positive side, the data could be structured more clearly in the software versus on paper, and the analysis process was less messy than doing it manually without technology. Furthermore, the software offers analytical tools, including queries, visualisations and word counts. I found visualisations very helpful, as a different presentation enabled me to get a new perspective of the data. Nvivo entails the feature of creating models, but the size is limited to the size of the screen considerably reducing clarity. Therefore, I used cardboard, paper and pen to create a model showing all codes (see 4.5, Figure 4.7). The model was essential to recognising relationships between the codes and to thus developing the themes.

Thinking critically about the data and their meaning also made me reflect even further on my data collection technique. I discovered other flaws such as the use of certain words in my questions (e.g. 'old' or 'imperfect' or 'ugly' food) that might have created bias. On the other hand, I needed to use those words to explain myself clearly, to make sure the participant understood my question in the way I meant it. Being aware of potential bias, I analysed the relevant data very carefully. Consequently, this realisation enhanced the quality of my research and also improved my data collection skills.

Conducting data collection and analysis was a great experience that helped me to improve my skills and to develop as researcher. The next section provides a summary of the chapter.

4.8 Summary

The chapter provided an overview of the data collection and data analysis process conducted for this research. Data collection started with the identification of the cases, businesses selling surplus food in its original form to all consumers. Two surplus supermarkets, one in Denmark (Wefood) and one in the UK (Niftie's), were selected as well as the app TGTG, which operates in both countries. Information about the case locations was provided, focussing on culture and economy.

The methods applied for data collection were explained. To collect primary data, I first visited Niftie's in Dover, then TGTG in Birmingham and finally TGTG as well as Wefood in Copenhagen. Interviews with and observations of consumers, customers and business representatives were conducted. Detailed information regarding the data collection process for each case was outlined. In addition, general information regarding participants, interviews, observations, reflective notes and ethical guidelines was provided. Section 4.4.5 described how the end of data collection was determined and saturation reached.

The collected data were analysed by applying the method of thematic analysis. After transcription all data were coded to develop themes and answer the research question. Limitations of the data collection and data analysis processes were explained. Finally, reflections on the experience gained from conducting data collection and analysis were presented. Section 4.7.1 focused on positionality, while Section 4.7.2 outlined how I improved my skills and developed as researcher. The following chapter provides the findings that were derived from the data analysis.

Chapter 5: Factors driving the commercial sale of surplus food and food waste reduction

5.1 Introduction

This chapter outlines the results of this research. The findings are structured according to the research questions (RQs) derived from the main purpose of this research, which is to find out how businesses selling surplus food commercially can be adopted and reduce food waste. This chapter consists of seven sections with Section 5.1 providing an introduction and Section 5.7 a summary. Sections 5.2, 5.3, 5.4 and 5.5 provide the findings answering the four RQs while each section starts and ends with an overview and a summary. Because this chapter is structured according to the RQs, findings are not presented by case. Findings from the three case studies are presented together in relation to each RQ. Differences and similarities between the cases are discussed in the summary part of each section. Section 5.5 is an exception, as the results for each case are different and hence are presented by case. Section 5.6 presents a framework addressing the overall RQ (1.4).

The RQs are:

1. Why do consumers choose to engage with the case businesses or not?
2. What challenges are the case businesses facing in selling surplus food?
3. What successes are the case businesses achieving?
4. How can the case businesses become long-term solutions to food waste?

First, the findings explain that social circumstances influence consumers' engagement with the case businesses. Secondly, the challenges for the case businesses to acquire and retain customers are discussed. Thirdly, the findings regarding the case businesses' successes in reducing food waste are presented. Fourthly, the importance of funding for positive long-term business development is described. The chapter ends with a framework illustrating the different factors that influence the sale of surplus food and a summary.

In line with the data collection and analysis chapter (Chapter 4), this chapter is also written in the first person and names of participants are fictional for reasons of confidentiality. Interview excerpts are shortened for efficiency and readability. Nevertheless, it was ensured that the original meaning of the quote was preserved and not changed. Whenever words have been eliminated from a quote, this is indicated via three dots (an ellipsis) in parentheses, while explanations that are added to facilitate understanding are inserted in square brackets. Even though the discussion of the findings in relation to literature is presented in Chapter Six, some literature is mentioned in this chapter to provide the knowledge that influenced the development of some findings.

5.2 Why do consumers choose to engage with the case businesses or not?

5.2.1 Overview: How social circumstances affect consumer engagement with the case businesses

The first research question aims at understanding why consumers choose to engage with the case businesses or not. The data analysis indicates that social circumstances, such as one's personal attitudes, lifestyle, self-identity and social network, influence the perception of surplus food and the businesses selling surplus food. Thus, consumers' social circumstances determine if they engage with those businesses or not.

This chapter first presents the impact of personal attitudes, which often are informed by one's upbringing or social environment, on consumers' perception of surplus food and their shopping behaviour. Secondly, the results explain how social circumstances shape personal lifestyles and hence, consumption practices. In the following section, it is shown that price is a factor motivating consumers to use the case businesses and that the role price plays in purchasing decisions is influenced by consumers' social circumstances. Consumption is identified as a means to express self-identity, while the results argue that consumers use the case businesses if they can identify with the businesses and the idea of buying surplus food. Subsequently, the impact of social networks on consumer behaviour is explained. Thereafter, results show that consumers in both countries, Denmark and the UK, are influenced by their individual social circumstances; no dominant national differences were identified. Finally, a summary of the subchapter is provided.

5.2.2 Attitudes and perceptions of surplus food

The findings indicate that shopping behaviour is formed by personal attitudes, such as the willingness to eat food past its 'best before' date, the preference for organic, fresh or healthy food or the motivation to help reduce food waste. Those attitudes are informed by social circumstances, as for instance the social norms, the upbringing and the culture one relates to. For Rita, a Wefood customer, buying organic food was '*a habit*' because her '*parents buy organic*', so for her '*it would be a bit unnatural to buy eggs that weren't organic*'. She

stated: *'Because I'm just used to that (...) I think it makes good sense.'* Furthermore, it was normal for her to rescue food from bins, as she *'went to this very left-wing school, so people did that a lot'*. Moreover, she was not worried about food safety when eating food past its 'best before' date, since her *'parents were really loose about that'*. Rita reported: *'Sometimes, I buy it on the day it expires and then I eat it 5 days after.'* Sina, another Wefood customer, learned to value and not waste food from her mum, who was brought up by her mother who had experienced the Second World War and hence had the habit of reusing instead of wasting products. Because of her upbringing, Sina appreciated Wefood.

I like that it [Wefood] reduces the amount of waste that we have, (...) all these products are not, there is nothing wrong with them. So why throw them out? (...) My mum is also quite into it. I think it's something that my mum has learned from my grandmother throughout during the Second World War, where everything had to be re-used and stuff. My mum growing up with her parents didn't have that much money, so it's, it is a vital thing, we don't (...) throw out stuff that's completely...(...) fine. (Sina, Wefood customer)

Attitudes like eating food past its 'best before' date or eating only healthy, organic or fresh food affect consumers' shopping habits. Bart worked at a bar next to Wefood and he chose *'the closest shop as possible'* for food shopping. However, he did not shop at Wefood, as *'they have food that is about to get expired'* and Bart *'almost never'* eats food after it has reached its 'best before' date. Also, Martin and his wife chose not to shop at Wefood, despite their environmental concerns, because of their desire to only eat food they perceive to be fresh and healthy. The couple tried to reduce their negative impact on the environment by using heating and light only when needed and by being *'really good about not wasting any food'* (Martin). They also focused on *'eating quite healthily, eating fresh stuff'*. Martin remembered the first time they passed by Wefood: *'We looked inside and we saw there was mostly "not food", it was processed food, so we don't consider that food.'* In contrast, almost all interviewed customers of the case businesses ate out of date food. Most of them believed that the date *'doesn't really matter'* (Susi) and trusted their senses instead.

Also, the social environment, formed by the participant's job or education, for example, informs individual attitudes. Patrick and his wife both worked on *'projects with third world countries'*, they supported *'a lot of things like (...) a sponsor child, children around the world and all kind of things'*. Because Wefood's profits supported projects in least developed

countries, the couple decided to shop at Wefood '(...) *to get some of the groceries that I usually get on the other side of the street*', as Patrick said. Sara, who came with her partner Hans to Wefood, became more aware of the issues of malnutrition and food waste due to her studies. Therefore, she appreciated *'the general idea that the food is not as wasted'* and felt that by shopping at Wefood she was *'in a way contributing to a better idea'*.

Consumers' social experiences also affect how they define food quality and food safety, how they value food and perceive surplus food. Clara and Wanda, for example, were both mothers caring for young children, but because of their different upbringing and attitudes, they perceived surplus food differently. Clara, the mother of three children, remembered that her *'dad used to peel a big mould off [her] jam'* and that she *'survived'*. Thus, she thought dates on food were *'a lot of rubbish really'*. Clara evaluated food safety and quality with her senses, eating food *'as long as [it] smells alright and looks alright'*. Because of her upbringing, Clara valued surplus food and was attracted by the products she saw in Niftie's's shop window and on its Facebook page. She thought: *'Oh wow, I'll go in there and have a look because they've got some really good brands'*. About Niftie's, she said: *'Things like this make sense because, obviously, things in jars don't go off as easy as they say they do and there is too much waste. And the food is perfectly fine.'*

As opposed to Clara, Wanda, the mother of a young child, considered out-of-date food completely unsafe. She bought organic food *'because it's more sustainable and it's more healthy'*, especially since having become a parent, which for her was *'an eye-opener'*. Breastfeeding her baby, Wanda was very concerned about her diet, as that determined if it was *'good stuff or bad stuff that's coming out'*. Hence, her consumption of organic food increased from *'30%' to '90%'*, according to her estimates. Wanda did not buy or consume food that had reached its *'best before'* date. Her husband, in contrast, *'is not so keen about ecological [organic]. He comes from a family (...) that don't believe in that kind of stuff'*. As a result of his upbringing, Wanda's husband had different values and attitudes and therefore bought non-organic products. Their different perceptions of purchasable food already caused conflict. Wanda explained: *'When he shops, or did (laughing), he bought the non-ecological [non-organic] food and I bought the ecological [organic] food, so we had a bit of a beef about that.'* Because he did not perceive food past its *'best before'* date as unsafe, Wanda's husband ate expired products and also fed them to their child. Wanda remembered a recent discussion about their opposing food consumption practices:

*If I don't clean the fridge, he just eats it, he doesn't look at the expiry date.
(...) I think it's his responsibility, but I wouldn't. The reason why I got a little*

bit mad is because he gives it to our child. I don't care what he eats, he has to look at the date himself, but just be aware that maybe it's not good for the child. (Wanda, consumer)

Because they grew up in families who ate food past its 'best before' date, surplus food was perceived as edible by Wanda's husband and even as desirable food (*'really good brands'*) by Clara. Wanda, in contrast, believed that expired food is unhealthy and organic food healthier. To be a caring mother for Wanda meant feeding her child organic, non-expired food. Clara expressed care for her kids by buying *'good brands'*; that the date had expired did not matter to her, as from her perception, food safety was not affected. As a consequence of their different perceptions of surplus food, Clara happily shopped at Niftie's, while Wanda chose not to shop at Wefood.

Consumers who perceive surplus food negatively and doubt that it meets their requirements do not engage with the case businesses. Hadar, the manager of a buffet restaurant that cooperated with Too Good To Go (TGTG), explained how consumers' perceptions of surplus food affected his sale of TGTG meals: *'A lot of people are still reluctant to have that food. They are thinking "oh whether the food will be good?" But the food is absolutely fine.'*

Summarising these findings, it can be stated that perceptions and the resulting attitudes are formed by one's social circumstances, such as upbringing or social environment. Moreover, the data indicate that personal attitudes influence shopping practices. Hence, social circumstances shape consumers' perception of surplus food and thus affect their interaction with the case businesses.

5.2.3 Lifestyle and convenience

The results show that social circumstances are influential in determining lifestyles and thus shopping habits of consumers. Consumers are likely to adopt shopping practices that are convenient for them and suit their lifestyles.

Some consumers perceived shopping at Niftie's or Wefood as inconvenient, as they could not get everything they needed and had to visit a second store. The surplus supermarkets investigated as part of this thesis had limited and varying stock, as supply depended on the surplus food that could have been acquired. Compared to standard retail stores, the product range in the surplus supermarkets was narrower. Esther used to shop at Wefood during her lunch break when she still went *'to school just next to it'*. At the time of the interview, she studied at a university a bit further away (1.6 miles) and did not use Wefood anymore. To visit the store was too time-consuming and did not fit her lifestyle at that time. Esther remembered shopping at Wefood:

Well, it was quite nice but it was really annoying that you couldn't, well, when you have to like go to different shops to get everything you need, so you can get in there and maybe get like a bit what you needed for the day, but then you have to go to another store afterwards and if you are like have a tight schedule, you don't have time for that. But it was nice when it worked out. (Esther, Wefood and TGTG customer)

Consumers who prefer to only shop once a week at a store where they can get all the items needed are less likely to shop at the surplus supermarkets, like Hanna, for example.

I've just been too lazy to go [to Wefood]. I mean, if I knew that they had everything, I could plan it and say 'ok I gonna do my weekly shopping there', but as they only have some things, it's not something I find very practical. (Hanna, consumer)

Consumers who do not live close to the surplus businesses, and do not pass them in their daily activities as well as consumers who go to a shop that is closer to their home, perceive the journey time as inconvenient. Shopping at the case business does not fit into their daily

life. Theo, for example, intended to use TGTG and considered shopping at Wefood. However, the distance to these businesses made him reject this idea.

(...) [Theo] said he went to the [TGTG] website or the map and saw that the restaurants that had something (he liked) were too far away. And for Wefood, he said he thinks it's also convenience and maybe habit because he usually goes to Supermarket 1 and Supermarket 2 (160m from his home, it's ~1.3 km to Wefood). He said he walks to the supermarket and it has to be really convenient. (Author's notes, 02.07.2018)

Customers reported using TGTG, Wefood or Niftie's when it was convenient for them and suited their lifestyle. Hella shopped at Niftie's *'once every 3 weeks, once a month something like that. When it's convenient.'* Hector, who did not live far away from Wefood, reported that he visited the store in his free time: *'I usually come if I have an afternoon where I don't have anything else to do.'* Peter lived in the area and usually went to Wefood on *'Sundays because it's (...) [his] day off'*. Harriet only shopped at Wefood when she had time:

Because it's (...) not really on the road from my [place of] study to home, so it's, I have to do like a longer trip, so if I'm busy I don't go here. But if I have the time I really like doing it. (Harriet, Wefood customer)

Customers admitted that they would come more often if it was more convenient, if a broader product range and longer, more regular opening times were available. To save overhead costs, Wefood was operated by volunteers, and the store was only open if enough volunteers were available to run it. Because Wefood experienced a shortage of volunteers, store opening times were limited and irregular. Harriet would have shopped at Wefood more often if it had stocked her basic shopping items, *'like milk and stuff'*. Peter, who came on Sundays *'would be there every Sunday'* if he *'was certain they were open every Sunday'*.

For some consumers, purchasing a meal via TGTG was not considered an option as collection times often were later than usual dinner time or because the location of TGTG restaurants was inconvenient. While Sina appreciated the concept, for her *'just the timings aren't quite right'*. Her partner Harry remembered that also the distance to the restaurants discouraged them from using TGTG: *'(...) there have been a couple of times where we*

talked about doing it, but, (...) where we live, it's not like you walk past town normally, it would require a trip out to do it.'

Most of the TGTG customers interviewed bought surplus food for convenience. They ate late anyway, chose restaurants with earlier pick-up times or collected a TGTG meal to use for lunch the next day. Henry was a music student and liked *'to take food in the evening, then just go back to school (...) and (...) eat there'*. He and his classmates studied late at night, and TGTG was a convenient option for them to get dinner. Henry told me: *'I'm saving a lot of time because I don't have to cook. Actually, I don't care much about food waste, I know it's a very bad thing but...'* Giselle and Ginnie used TGTG *'mostly for bakery and stuff like that'*, as they *'get good cakes'* and the collection times were earlier. Pick-up times for normal restaurants for them were *'too late to go out'*. Some participants, such as Susan for instance, collected a TGTG meal in the late evening for the next day's lunch because for them it was handy and suited their routine.

I'm 49, I live in the centre of Copenhagen, I live nearby, so it's very easy for me you know to go by bike and it takes 5 minutes. (...) when I choose a place to go and buy this food. (...) it has to be convenient, I don't want to go 40 minutes on bike late evening. Something nearby easy. (...) Some of it I put in the fridge, some of it I use for lunch. It's not dinner, I had dinner already, it's quite late now, so. (Susan, TGTG customer)

Also, Edgar used TGTG for convenience when he was *'home late for dinner'* or didn't *'get to make lunch for the day after'*.

Customers use TGTG when it suits their lifestyle. Helge, for instance, picked up a meal via TGTG when his fridge was empty or when a TGTG restaurant was on his way. When I met him collecting his TGTG meal, he told me: *'I was doing an errand, so I ended up on my way back looking through the app (...) and saw that it was open and I live right down here, 500 m this way.'* However, when he had a guest, Helge did not use TGTG but normal takeaways, because *'then the constraints of TGTG are too great'*, as they *'would end up eating at 10 o'clock at night'*. The owner of a canteen that partnered with TGTG, Carina, commented on a regular customer, who incorporated the surplus food of that canteen into his everyday life to the extent that he was devastated when they did not offer him a meal one day because there was no meat left: *'He said "I'm a single dad, and I have 2 kids and (...) I need the food (...) I don't care if you don't have meat, I just want some food.'"*

In summary, these results show that consumers buy surplus food when it suits their lifestyle, fits into their routine and is convenient for them. Consumers who perceive buying surplus food as inconvenient because the case business is located outside their daily area of movement, does not provide all the products they usually buy or has opening times that do not suit their daily routine will not engage with those businesses. The role of convenience as factor motivating engagement with the case businesses is also supported by the fact that 78% of all interviewed customers had more flexible lifestyles, as they were either students or people with no regular employment. Using the case businesses might be more convenient for people with more flexible lifestyles. In contrast, 70% of all consumers were employed regularly and thus less flexible. For them, buying surplus food from the case businesses might be less convenient than for people with more flexible lifestyles.

5.2.4 Price

Price was a motivator for many customers to shop at the case businesses and influenced participants mentioned in the previous section as well. Out of the 29 customers interviewed, 27 commented that cost was a factor in using the case business. Social circumstances affect the role price plays in a purchasing decision. For Hella, a regular customer at Niftie's, price was the most important purchasing factor, overruling taste and desire for certain foods, due to her upbringing, but also due to her low income (she worked on a zero-hours contract). Because of the low prices, Hella shopped at Niftie's.

I was brought up to find the absolute cheapest thing, so I guess I conditioned myself to when I go somewhere and there is a big range, like might be baked beans (...) I don't necessary go to what I like, I just go for the cheapest. And I'm trying to break that habit but when I come somewhere like this and everything is cheap I can just not really pay attention to the prices and just get some things I like. So it's really good, really useful, but yeah generally I rush for really the cheapest supermarket, (...) around the reduced aisles, sections you know where they knock the prices down.
(Hella, Niftie's customer)

Stella, who was previously homeless, was introduced to Niftie's by Porchlight, a homeless organisation. While Stella was not homeless anymore, price still mattered to her, as she

had no income besides government support funds. She told me: *'Coming from being homeless (...) you've got no money (...) only a small amount (...) and it [Niftie's] is cheap so it's all easier for us.'* Sonya had three children and a price-conscious husband, and price was the criterion that drew the family into Wefood when they passed by. Sonya cared about the planet and had an environmental shopping attitude. She did *'prefer to buy ecological [organic] (...) even though it's a little bit more expensive'* and wanted to help reduce food waste. Her husband, in contrast, was more money-conscious and bought products that were on offer. When the family passed Wefood, they decided: *'Ah let's go in, see what it is, if there is anything cheap, might be a good bargain.'* Price, instead of environmental concerns, was the most convincing factor to shop at Wefood due to the husband's frugal attitude and the need to care for a big family. The low price also motivated the family to use TGTG. Usually, Sonya only bought what the family needed, and about pastries she thought: *'I can live without it, so normally I won't buy it.'* However, via TGTG she allowed herself to *'go and get some [pastries]'* because *'it's cheap'*.

A low price for food carried different meanings for different consumers. Some consumers felt empowered and enabled to buy more or higher quality food or to have a takeaway more often. Magda told me about her flatmate who used TGTG to buy French food: *'He is hunting for lower prices'*, as *'French restaurants and cafés are really expensive, so with TGTG he can get it cheaper'*. Rita knew *'a lot of people who get some bread and cakes from the bakery [via TGTG]'* because thus they could *'get some, a little better bread than what you buy in the supermarket and then still it's affordable'*. The low cost of a TGTG meal enabled Helge to get a restaurant meal several times per week. He *'would prefer to go out two times during a week for less money than going out once a week for double the price'*. A Niftie's customer pointed out that because of the cheaper prices, she could afford expensive brands, which made her *'feel posh'*.

Politics and economy shape the local culture, for example by influencing average income and thus shopping practices. Harry, a Wefood customer, who is British but had moved to Copenhagen, reflected about this difference and how it can affect shopping habits.

I think in the UK, people maybe have less disposable income, (...) they are slightly more pressed at the low end of the economic scale. I think (...) in Denmark the minimum wage is higher; therefore, people have more money to make good environmental choices (...), I think in England that's not always the case. (Harry, Wefood customer)

Cost of living and average income affect the importance of food prices. If eating at restaurants is usually quite expensive, price might be a bigger influence on the decision to buy a TGTG meal than in a location where restaurant meals are cheap. The same is true for food prices at supermarkets. Also, the average income of the local population influences the role price plays. Students, in particular, appreciated the lower food prices of the surplus businesses. Harriet shopped at Wefood and discount supermarkets because as *'a student you don't have that much money'*. Henry, a student and regular TGTG user, described his reasons for using TGTG:

(...) I'm really happy that I'm helping the environment protection and reducing CO2 emissions, I'm really happy, but mainly I just, I'm a poor guy and I need food, so it's... (Laughing). It's really good food. (Henry, TGTG customer)

Henry's low-income status meant that he benefitted from the cheap cost of *'good food'* available via TGTG. His Portuguese classmate and regular TGTG user Felipe pointed out that price was especially important to him, as the food prices at restaurants in Denmark were expensive compared to Portugal. Also, Susi and Herbert, two young students in their first year, appreciated the opportunity to *'get food for cheap in a city that's notorious for its sort of restaurant pricing'*. Most interviewed Niftie's customers were on a low income, which seemed to be prevalent in Dover, and price was important to all of them. Clara, mother of three children, especially valued the *'cheapness'* of Niftie's, as for her it meant *'money saving'*. She explained that *'you get 2 jars for the price of one, so it just makes sense (laughing), especially when you have a family.'* Martin was retired, and shopping at Niftie's helped him and his friend to afford a living. He explained: *'We watch the pennies (...) and they go a long way then and this [shopping at Niftie's] is what we do.'*

In conclusion, social circumstances, such as attitudes, cost of living, income and family status influence how important price is in a purchasing decision. Furthermore, the data suggest that cheap food prices are a major factor driving consumers to use the case businesses. This finding is supported by the fact that 78% of all interviewed customers were students or people with no regular employment for whom cheap prices might be more important, while the majority of all interviewed consumers (70%) were employed, and thus cheap prices might be less relevant to them.

5.2.5 Self-identity

The data also suggest that the degree to which consumers can identify with shopping at the case businesses determines if they are attracted to the case businesses or not. Participants generally appreciated the concept of selling surplus food. However, to shop at any of the case businesses consumers needed to be able to identify with the idea of buying surplus food. Their beliefs, attitudes and lifestyles had to suit the idea of shopping at TGTG, Niftie's or Wefood. Thus, environmentally conscious consumers who were very concerned about eating healthy and fresh food appreciated the concept but did not use the case businesses themselves, as demonstrated by Theo. He cared about the environment, was very concerned about eating organic and shopped at a supermarket (Supermarket 1) very close to his house. He favoured the idea of reducing food waste and would be motivated to shop at Wefood because *'it's a good cause'*, as food is not wasted. He stated: *'It's such a shame that we throw out so much food and that we starve the planet to create that food.'* Nonetheless, his habit of walking to the closest supermarket (see 5.2.3) as well as his attitude to only buying organic food to maintain his healthy lifestyle prevented Theo from shopping at Wefood.

So, I asked him if Wefood were next to Supermarket 1, whether he would then go, and he said yeah he might have a look, check it out. And then we discussed it further and he asked if the food Wefood sells is organic. Because that it is organic is really, really important to him (...) because he wants to be healthy. (...) Therefore, he thought, he would not go to Wefood.
(Author's notes, 02.07.2018)

Theo identified with eating healthy, organic food more than with helping to reduce food waste. Hence, he would not shop at Wefood even if it was more convenient and suited his routines better.

For some consumers, shopping at the surplus supermarkets or using TGTG was tainted with a stigma. They associated buying surplus food from those sources with people on low incomes, as the prices were cheaper than at regular shops or restaurants. Those consumers could not identify with buying surplus food. Patrick, the owner of a company that handles projects benefitting developing countries, clarified that he and his wife did not shop at Wefood *'because of the pricing'*, as *'that's not how (...) [they] shop'*, but *'because of the initiative'*, the fact that profits were invested to fight food poverty in developing

countries. His wife would not use TGTG as she could afford to purchase food differently. She supposed that TGTG was for *'the students and other people like that [who] are in need of money'*, as Patrick explained. Also, Wanda believed that Wefood *'is a great concept that can help the people who (...) [are] in need'*. She thought that *'the people (...) who walk in there are people who need to buy cheap things'*. *'For them, it's a good opportunity also to get some goods (...) [which have] value'*, but Wanda did not identify with that group of people and thus did not shop at Wefood. Others regarded surplus food as low-quality, which they did not buy as they could afford to buy fresh high-quality food. Peter, *'a fairly senior civil servant in the Danish National Police'* regularly shopped at Wefood. He believed that *'most'* of his *'old friends from university'*, who *'are pretty well off as well (...) probably find it a bit off-putting with old vegetables'* and thus would not have shopped at Wefood.

In contrast, customers identified with shopping at the case businesses; they felt good about shopping there. Hella, for example, was raised to buy only the cheapest offers, and therefore she identified with being a thrifty shopper, which aligned with Niftie's's cheap prices.

When I'm here I don't worry too much because I know it's not gonna be full price, so I can allow myself treats I wouldn't actually buy. (...) I really feel like I get a bargain, I guess I get some sort of pleasure (...) because I (...) get a basket, it's probably half the price of what it would be from the supermarket, so I get that, that buzz of being a consumer. (Hella, Niftie's customer)

Helmut bought organic food because he did not believe *'that we should have chemicals in any of our food'*. He did *'not like plastic packaging on food'* and tried to purchase products from *'local independent shops'*. Helmut was vegan and to him, regarding food, *'the quality (...), so nutrition'* mattered. *'Frequently'* he used a certain TGTG restaurant that also was a wholefood shop and served meals made of healthy, sustainable, natural and vegan ingredients (Naturally Birmingham Limited 2018). Helmut did *'not have a fixed job'* and lived with his parents. He tried to *'balance (...) not just coming (...) and having the food at the cheap price because then that's no good for (...) [the restaurant]'*, as he liked *'to come and eat (...) [there] anyway'*. When Helmut ate at that restaurant, he communicated and enforced his identity as a healthy vegan who supports local, sustainable shops. TGTG enabled him to eat at that restaurant more often.

The data indicate that shopping practices are affected by consumers' self-identity. Consumers tend to shop at places and buy products that align with their values and the way they perceive themselves and want to be perceived by others. Thus, to customers, shopping at the surplus businesses has a meaning they can identify with. Consumers whose self-identity does not align with buying surplus food from the case businesses are very unlikely to do so.

5.2.6 Social network

Customers with different social circumstances shop at the case businesses because it suits their lifestyle, attitudes and self-identities. When customers were described by business representatives, they were referred to as members of different social groups including: '*students*' (Edgar, Inga, Basil, Christian), '*older people*' (Edgar, Carina), '*younger people*' (Else, Christian), '*young parents*' (Cedric), '*families*' (Betty), '*people from the neighbourhood*' (Pan) and '*young, old, Danes or foreigners*' (Valentina). Hence, the attitudes, lifestyles and self-identities required to shop at the case businesses need to be compatible with the social networks that exist in the area of the case businesses.

How successfully the innovation of buying surplus food spreads depends on the social network. So far, the results have shown that social circumstances hold influence over whether consumers shop at the case businesses or not. Moreover, the social network determines if, with whom and how customers share their experience. The case businesses all received quite a lot of mass media attention when they were launched, which informed and attracted consumers. Consumers also reported having learned about the case business via Facebook, via passing by the actual store and through word of mouth with the latter being the most referenced channel.

When participants communicated their experience of using TGTG, Wefood or Niftie's, they mostly shared their stories with like-minded people in their social network, such as family, friends and colleagues. Consumers might be more likely to share their experience of buying surplus food in a social network that embraces environmental protection or bargain-hunting than they would if there was a social stigma related to being poor or eating low-quality food. In Denmark, for example, environmentalism is the social norm. Rosa, a young Danish student and mother coming from the Falkland Islands, believed that '*Danish people are*

very proud of recycling, (...) very proud of being green'. Her partner Finn agreed and thought that *'it's maybe more of a status symbol to recycle, to be green and to be vegan and stuff like that where you (...) have a minimal effect on the world'*. However, Danish TGTG user Helge felt that his social network would disapprove of him buying surplus food, which is why he did not communicate this habit.

It's not something I usually share because it sounds like (...) it's garbage food that you are buying. So, I guess there is a certain type of social stigma (...) At least for me, I see some sort of (...) cost by saying that I do this.
(Helge, TGTG customer)

Peter, a regular Wefood customer, also believed that his friends would not shop at Wefood, as they perceived the food to be low in quality. Nevertheless, Peter still talked to them about Wefood, as he did *'not care'* about their opinions and probably also because *'they have a lot of respect for the way (...) [he lives his] life.'*

In summary, it can be stated that social networks determine if buying surplus food is a suitable practice or not. One's own close social network such as friends and family and their perceptions of buying surplus food affect if the practice of buying surplus food is communicated or not. Hence, consumers are more likely to know about and shop at the case businesses if their social network embraces attitudes, lifestyles and self-identities motivating the purchase of surplus food.

5.2.7 National comparison

Considering the differences in regard to sustainability and food consumption practices in Denmark and the UK, it could be assumed that the motivations to use the case businesses are likely to differ between British and Danish consumers. As explained in Section 4.2, international metrics of country-based sustainability have placed Denmark higher than the UK (RobecoSAM 2019) with Danish consumers focusing on natural purity, quality and health regarding food consumption, while for British consumers convenience, price and familiarity matter most (Brunsø, Grunert, and Bredahl 1996; Brown, Dury, and Holdsworth 2009). Hence, it could be expected that environmental concerns are a bigger driver for Danish than for British consumers, that convenience is more important in British than in

Danish purchasing decisions or that price is more important for British than for Danish customers. However, for participants in both, Denmark and the UK, price and convenience were the most mentioned purchasing factors. Moreover, people with lower incomes, for whom cheap prices might be more relevant, such as students or people with no regular employment, formed the majority of all interviewed customers (78%) in both countries (83% in the UK 76% in Denmark). Furthermore, most participants in both countries were aware that they created positive environmental impact by using the case businesses, whereas environmental concerns were not a major purchasing factor for participants in either Denmark or the UK.

A difference was revealed in the ways in which consumers elaborated on their environmental concerns. Participants who were interviewed in Denmark seemed to be more educated about sustainability and related issues, such as food waste, as they talked about those topics in greater depth than participants in the UK. This could be related to the curriculum, as a conversation between Arnas and Finn suggested. Arnas went to college in the UK and was taught *'basic geographical skills like topography'* in geography classes, whereas Finn who went to college in Denmark *'had geography and maybe 90% of it was about sustainable farming'*. Moreover, Finn believed that the consumption of organic food also influenced consumers' education. He argued that *'when you start, like, coming into this sort of environment where you are aware of the effects on nature, you get introduced to other things as well'*. Participants in Denmark mentioned purchasing organic food more often than participants in the UK, which coheres with the higher retail sales share of organic food in Denmark (4.2). Finn told me that *'it's very, very common for people to buy organic'* in Denmark, as *'organic products are really, really cheap'*, while these products were considered expensive in the UK (according to Clara for example). Furthermore, caring about the environment was perceived as a *'status symbol'* for Danish people, as pointed out by Finn. Therefore, consumers in Denmark might be more experienced in talking about environmentalism.

Overall, no considerable differences were found among consumers in Denmark and the UK despite the different cultural and economic background of these two nations (see 4.2). Customers and consumers in both countries were motivated for similar reasons to engage or not engage with the case businesses.

5.2.8 Summary of Findings Section 5.2

Social circumstances, including one's social environment and upbringing, form personal attitudes, lifestyles, the importance of cheap prices, self-identities and social networks and thus influence consumers' shopping practices on a rather sub-conscious than rational level. As a result, these social factors also determine whether or not consumers choose to shop at the case businesses selling surplus food. Consumers consider buying surplus food if this practice aligns with their individual attitudes, their lifestyle, the role price plays in their purchasing decisions, their self-identity and social network. Therefore, consumers' demographic backgrounds affect their engagement with the case businesses. Students, for instance, bought surplus food from those businesses, which was related to their more flexible lifestyles, their low incomes, their attitudes about food waste or their environment-conscious self-identities. National differences were not found to affect consumer motivation to engage or not engage with the case businesses to any great extent.

Comparing the case businesses with each other, personal attitudes were less influential for buying surplus food from TGTG than from the surplus supermarkets, as less TGTG customers talked about attitudes. This could be related to consumers' perception of surplus food from a restaurant, which was prepared on the same day, and surplus food from a supermarket with or without a label such as 'best before' or 'organic'. Consumers who only shop for organic groceries or do not eat outdated food can still eat leftovers from a restaurant as long as the restaurant food meets their taste. However, the importance of consumers' lifestyles, self-identities, social networks and price for consumer engagement with the case businesses was similar for TGTG, Niftie's and Wefood.

5.3 What challenges are the case businesses facing in selling surplus food?

5.3.1 Overview: Challenges in selling surplus food

A major challenge the case businesses were facing was the acquisition of sufficient customers to achieve profitability. For a business to be economically viable, revenues have to cover the cost of doing business (CODB). To be successful and grow, revenues need to exceed the CODB so that profits are created, which enable investments into business development (Churchill and Lewis 1983). To generate revenue, the case businesses need to acquire and retain customers. For customer acquisition, a positive consumer experience is of utmost importance. Their experience with the case businesses determines what consumers communicate about it and whether they become regular customers. The businesses selling surplus food were an innovation that consumers either adopted or rejected, depending on their experience with the businesses.

The findings show that a positive consumer experience is based on the product range the case businesses offer and on the atmosphere consumers absorb when they use the service the businesses provide. If the offer and the atmosphere appeal to consumers, they are likely to buy something and to return in the future. In contrast, if they perceive the products as not appealing or the ambience as unpleasant, consumers are disappointed and not likely to buy or come again. Moreover, consumers were found to expect the case businesses to be similar to the supermarkets and restaurants they know.

In the following sections, findings with regard to consumer experience are presented. First, the impact of the product range on consumer experience is described. Subsequently, the importance of the atmosphere consumers perceive when using the case businesses for customer acquisition is outlined. Thereafter, it is explained that consumers expect the case businesses to not deviate too much from the regular retail environment. The subchapter ends with a summary.

5.3.2 Product range and consumer experience

The product range available is essential for the case businesses, as consumers do not buy food they do not like. Consumers expect the surplus supermarkets to stock the products they usually buy. When Hanna entered Wefood for the first time, she appreciated the 'nice' atmosphere, as *'it was less flashy than other supermarkets (...) less "buy, buy, buy, buy" and all that'*. However, Hanna *'did not buy anything'* because she perceived the products in the store as *'very strange, not like first need products [e.g. milk, toilet paper - products she usually buys]* and *'things that (...) [she] wouldn't buy normally'*. Stuart and Giselle both visited Wefood and perceived the store as empty because they did not find the products they were used to seeing and buying in a regular supermarket. Giselle remembered that *'there was like nothing in there'*, while Stuart tells me that *'they didn't have a lot of things honestly'*. Before visiting Wefood for the first time, Stuart thought he might shop there regularly as he *'often (...) [goes] to more stores'* to *'look for offers'*. However, the limited product range Stuart experienced on his first visit to the store made him change his mind.

I guess, even living close by, I'm maybe not as likely to go there again as I thought I would be the first time I went there. (...) a lot of the products I wouldn't even consider, actually. (Stuart, Wefood and TGTG customer)

Because of their negative shopping experience based on the product range, these consumers did not become customers despite their price-consciousness or positive perception of the atmosphere in the shop. Tim, the head of Wefood, was aware of the impact product range has on consumers.

We had customers from day one but we also, our problem was that we had customers who had a bad experience because they didn't find anything, or they only found very special products that they couldn't use. (Tim, head of Wefood)

Other consumers experienced the same product range in a different way. They knew that they might not find the usual products and not get everything they need, but they were happy to just buy a few items, as demonstrated by an elderly lady who left the Wefood cashier saying: *'We always find something'* (author's observation 20.09.2017). Customers were confident that the case business would offer some products they liked. Peter was a

regular Wefood customer, as he could *'always find something'*. When he visited the store for the first time he thought that *'this is never gonna survive, cause it's too erratic and it's (...) too weird'* as *'they got some pretty weird stuff in there'*. One of those *'weird'* items were football shirts for bottles, which Peter bought *'even if it doesn't make any sense'* but because *'this is fun'*. He told me that because *'you never find what you need anyways, (...) you have to go there with an open mind.'*

In contrast to consumers who were disappointed by the limited selection, customers appreciated the varied product range. They got inspired, felt like exploring instead of shopping, and for them the unknown offer was fun and exciting. Peter knew that *'you can't go there with a specific purpose, because you never know what's in stock'*, which motivated him to go to Wefood *'very often'* to *'get inspired'*. For him, *'the notion that you never know what's in there (...) is quite fun, inspiring'*. Clara thought about Niftie's's product range that *'the variety, [that] you never know what you gonna get (...) is nice'* as it made shopping *'a bit more exciting'*. For her, *'it is worth coming and having a little look'*. When she shopped at a normal discount supermarket, which *'has all the basic things'*, Gemma did *'not really get inspired'*. Shopping at Wefood, she got *'inspired because there are things that [she] cannot really find normally'*. Also, Harry liked to *'get something you would then build a meal around'*. Harriet enjoyed the element of *'surprise'* when she used Wefood, as *'you will always buy something that you don't expect you want'*, which for her was *'some kind of treats'*. The table below (Table 5.1) provides examples of regular and irregular products stocked by the surplus supermarkets. Regular products were either acquired from regular suppliers (e.g. Wefood's bread, fruit and vegetables) or had been supplied in big quantities but were sold slowly (e.g. Wefood's jams or salmon oil pills). A large part of the stock was irregular as it was sourced from varying suppliers.

Case business	Regular products	Irregular products
Wefood	<ul style="list-style-type: none"> • Bread • Fruit and vegetables (varying items) • Sauces • Jams • Cereals • Salmon oil pills • Drinks 	<ul style="list-style-type: none"> • Nut mix • Handmade chocolate bars • Vegan frozen meals • Craft beer • Lactose-free milk • Special fruit or vegetable (e.g. Jerusalem Artichoke) • Pasta
Niftie's	<ul style="list-style-type: none"> • Tinned fruit and vegetables • Sauces • Cereal • Flour • Tea • Yoghurts • Drinks 	<ul style="list-style-type: none"> • Naan bread • San Pellegrino Water • Christmas pudding • Branded sweets and chocolates

Table 5.1: Products at Wefood and Niftie's (Author's notes)

Customers enjoyed shopping at Wefood or Niftie's; for them it was *'leisure time'* (Peter), it was a fun activity rather than just the *'boring'* (Clara) shopping at regular supermarkets. Consumers who preferred to get everything they needed in one shop perceived shopping at the case business as not *'practical'* (Hanna). They felt that their leisure time would be reduced as they would overall spend more time shopping. Because of the distinct framing, the product range was perceived differently. Where some consumers had a positive experience, others had a negative experience, due to their different perceptions of the same setting. Perception again is influenced by social norms, lifestyle and personal attitudes, thus by one's social circumstances (see 5.2).

However, most customers reported that a bigger product range would motivate them to shop more often at the case business. Peter enjoyed shopping at Wefood but also thought that the product range *'has a certain Eastern European feel to it from the 1980s'*, so *'a*

broader range, more variation would be fun. Stella entered Niftie's *'if something catches (...) [her] eye, (...) but at the moment nothing has caught (...) [her] eye'*. She *'would always (...) love to go in there, it's just the options that they've got (...) [are] poor'*, such as *'bulk stuff like massive bags of flour'*. Also, Clara would *'prefer it to be bigger'* with *'a lot more stock'*, which would have motivated her to shop at Niftie's *'regularly, like every week, every couple of days'*. While on the one hand customers enjoy that the offer is different from the standard supermarket, on the other hand this difference limits their purchases.

Stocking popular products is essential for customer acquisition. *'It just seems when we get the right products, (...) we will get customers'*, summarised Tim, the manager of Wefood. When Wefood received very popular organic meal boxes, the business sold *'5 times as much as (...) normally, by just publishing on Facebook and people started sharing it, because they know the brand'*. Tim compared the scenario in the surplus supermarket at that time with *'these warehouse sales where women can buy their clothes for half price'*. The head of Wefood acknowledged that the store's product range was an effective marketing tool: *'This was just one product, but still people know us and they are willing to tell other people about us if we just get the right products.'* Miriam, volunteer at the Wefood store in Nørrebro, also has realised that *'there is a flow of customers when (...) [they] have a lot of greens'*. Wefood's sales records confirmed that the most popular products were beverages, sauces, fruit and vegetables and bread (see Appendix Chapter 5, A, Table A5).

For TGTG customers as well, having a choice and a varied selection was important while also the opportunity to explore new food motivated them. When Helge used TGTG he *'always (...) [tried] to find something new'* and hence appreciated a broad selection of TGTG partners. Henry was a regular TGTG user and would have preferred it if more restaurants participated so that the offer was bigger. Not living *'in the really inner city of Copenhagen'* anymore but *'a bit outside'* caused Giselle to use TGTG less often because *'there is not so many businesses doing it'*. Giselle's new residence had few TGTG restaurants nearby, and thus the selection of meals, TGTG's product range, was smaller and less attractive. Gemma had downloaded the app but had *'not ordered anything'*. She wanted to use the app when she *'was working late hours'*, but when Gemma *'got home and (...) was looking at it, then there was nothing left (...) [she] was interested in'*. If TGTG could have offered a broader product range, a bigger network of participating restaurants, Gemma might have found something that suited her taste. Stuart wanted to use TGTG several times, but whenever he checked the app there were no meals left *'because there is more demand than they have leftovers'*. Stuart had been disappointed by several unsuccessful attempts to order a TGTG meal, which caused him to *'almost never check*

anymore'. Gemma, Giselle and Stuart wanted to purchase surplus food via TGTG but were discouraged by the limited product range. These participants did not become TGTG customers because they did not have a positive experience. A wider selection of TGTG restaurants could have improved their experience as well as that of other customers.

In summary, it can be stated that consumers' experience with the case businesses is influenced by the product range. While customers feel inspired by the different product range, other consumers are discouraged from using the case business. A broader product range would motivate customers to buy surplus food from those businesses more often and could improve consumer experience, thus attracting more customers.

5.3.3 Atmosphere

Agreeing with Pink (2015), the data suggest that consumers perceive and evaluate their environment and experiences with their senses while sensory perception is shaped by personal experiences and the social environment (see 5.2). Food, for example, is judged by its look, feel, taste and smell. To evaluate fruit and vegetables, such as price-reduced mangoes, Amir suggested that *'you can smell it, you can feel it with your hand, you can see that still, it's good'*. Harriet explained that *'you can always taste if it's (...) not good'*. Also, Stuart used his senses to determine food safety and ate *'anything as long as it looks and smells fine'*. When consumers used the case businesses and consumed the products they had bought, they experienced certain feelings towards the products, the layout and marketing communication, the staff and the other consumers in the shop. These factors created a range of different responses, positive and negative, in consumers. To turn consumers into customers, and even regular customers, their sensory experiences need to be positive.

Customers described shopping at the surplus supermarkets as a happy experience that involved more than just buying food. They enjoyed creating a positive impact, talking to the volunteers, tasting the food and not being flooded by promotions and prompts to buy. The more social and personal, friendly, *'cheerful'* (Stella) atmosphere as well as the low prices were appreciated by customers. Sonya appreciated the fact that at Wefood *'they are not convincing you to buy something that you don't need; it's more like "it's there and you can get it if you want to, and you can let it go if you don't"'*. Rita experienced shopping at Wefood

as *'different'* because *'people are volunteering so they are a bit more talkative sometimes'* but mainly because *'there is a bigger idea of, it's not only about selling things'*. Gemma also enjoyed short conversations with the *'really nice'* volunteers and elderly customers and sought their advice when she bought a fruit or vegetable she did not recognise. Martin experienced shopping at Niftie's as *'more personal'* because he could ask questions and received answers, which made him feel *'very pleased, (...) very happy'*. Peter recognised that Wefood was not always open when he came on a Sunday and that the product range was *'weird'*. However, due to the *'nice ambience'* and because *'the staff there are always happy and (...) usually hand snacks out so you can taste'*, he was *'always happy going there'*.

Niftie's's customers associated the shop with the owner, which demonstrates that shopping at Niftie's is a social experience rather than just a shop visit. Instead of talking about Niftie's, they mentioned Nico. Nico, in turn, knew most of his customers, had private conversations with them while they were doing their shopping and ordered stock according to their needs. When I reflected on my day at Niftie's, I concluded that *'it felt like spending time with him [Nico], hanging out at Nico's, rather than going to a shop'*. Customers enjoyed the atmosphere in the surplus supermarkets.

TGTG restaurants also reported that customers were happy when collecting their meal; the atmosphere was perceived to be positive. As Niftie's and Wefood customers, TGTG customers also enjoyed getting good food cheaply while supporting a good cause. Edgar and Elias, employees of a Danish TGTG restaurant, reported that customers *'look happy'* because they got *'this good food'* so easily. *'They are chuffed, they are really happy'*, tells Jordon, who works for a TGTG restaurant in Birmingham. He used TGTG himself, he thought *'the concept is brilliant; you can just stop food going into the bin'*, which was *'a big thing'* for him. Basil, the owner of a salad bar, believed that his TGTG customers were *'very happy'* because he gave *'too much'*. Customers felt happy when they bought food from TGTG partners and were likely to come back.

Sometimes, TGTG customers had been disappointed by the service, as it did not live up to their expectations because the restaurant had run out of leftovers and did not inform the customer in advance or because the food received was not as plentiful, as prepared or as presentable as expected. Christian, manager of a TGTG café, remembered that *'sometimes people get a bit disappointed'* because they *'only get the buns or the hummus'* and had to prepare the sandwich themselves. TGTG customers expected to get a prepared meal and were misled by the café's TGTG meal description promising *'avocado and*

hummus sandwich and stuff like that' (Christian). Giselle remembered that she was disappointed when she bought Sushi via TGTG, as it was *'not very tasty (...) all broken and you can't eat it like sushi'*. Hannes owned a street food restaurant and reported that TGTG customers had *'been a bit unhappy'* when they arrived after the restaurant had *'sold out of everything'*. Because Hannes worked non-stop, he did not have the time to cancel orders in advance, which sometimes led to disappointed customers who left empty-handed. When their expectations are not met, consumers experience negative feelings and are unlikely to use the case business again.

Their experience with the case business also determines if and what consumers communicate about the business. Disappointed customers will not communicate a positive story if they share their experience, while happy customers are likely to spread a positive message about the case business, like Gemma.

I tell them I like the store, it's nice, you can buy many nice things and ... I just tell them that it's good things like what's, of course on offer it can be good things or bad things but I tell them that they also find good things, because I think a lot of people who have said, who have asked me then 'Isn't it then things you don't really want?' And I say 'Well, it's actually also a lot of good things, it's kind of mixed'. (Gemma, Wefood customer)

In conclusion, it was found that consumers evaluate their environment using their senses. When using the case businesses, consumers sense a certain atmosphere, which is a combination of their perception of the products, the app or store layout, the business mission and the interaction with staff. Most customers experience the ambience as pleasant. They enjoy interacting with friendly staff, creating positive environmental impact and easily getting good food at a low price. Some customers were dissatisfied with the products they received and therefore had a negative experience. A positive consumer experience is essential for customer acquisition.

5.3.4 Familiarity and differences

Summarising the results up to now, Section 5.2 demonstrated that their attitudes, lifestyles and self-identities determine if consumers engage with the case businesses or not. If the attitudes needed to shop at Wefood, Niftie's or TGTG deviate too much from the norm, it will be difficult for the case businesses to attract consumers. Section 5.3 has shown so far that the experience consumers have with the case business affects if they will become customers or not. Consumer experience is influenced by the consumers' perception of the products available in the shop, the layout and staff. Consumers' perceptions are shaped by their social circumstances and are influenced by the norm. New experiences are compared to the normative experience, meaning that the current status quo colours consumers' attitudes, their sensual perception, their expectations and thus their evaluation of experiences. Consumers' purchasing decisions are affected by their past shopping experiences and the knowledge they have accumulated during those (Burke et al. 1992). When evaluating a tomato, for example, the product's extrinsic cues, such as its look, are used (Bhatt et al. 2018). To decide if the tomato is attractive or not, it is compared with other tomatoes the consumer has seen. Silvia, for instance, usually bought organic food, *'but if the non-organic tomatoes look much better than the organic tomatoes, (...) of course [she] will take the non-organic'*.

Unfortunately, the retail standard is defined by perfection; only immaculate products, nicely packaged in full shelves are acceptable. Supermarket store manager Ralf confirmed that fruit and vegetables are not sold if they do not look nice. This standard is creating surplus food in the first place but also shapes the perceptions of consumers and staff. Wefood and Niftie's customers compare the surplus supermarkets with regular supermarkets and have certain expectations. Melvin worked as a volunteer at Wefood and experienced that full shelves of pretty products, as in the *'green sections'* of regular supermarkets, attracted customers and made *'people (...) more willing to buy'*. Therefore, to him it mattered that Wefood *'looks attractive and [that] there is a lot of products to sell'*. Niftie's customer Clara admitted that she would *'use it [Niftie's] a lot more (...) if it was bigger and (...) went into the fresh produce, (...) and it was a proper supermarket type of thing'*. Also, TGTG customers compared their meals with regular takeaway food they had consumed. When they ordered leftover sushi, they expected the sushi to look like sushi they had eaten in the past and if that was not the case customer expectations were not met and disappointment was created.

Not only the products but also the layout of the surplus supermarkets is compared to the layout of regular supermarkets. Esther, for instance, felt that Wefood *'doesn't have that luxury feeling [as high-end supermarkets] but it has a feeling as mostly Supermarket 1 and the other like lower-priced supermarkets'*. After Wefood hired retail experts, the Wefood stores in Copenhagen purposefully received a layout reminiscent of discount supermarkets, while the new shop in Aarhus was decorated like a high-end supermarket. With the new layouts having included a broader product range, sales in all stores increased considerably, whereas the shop in Aarhus was the most profitable one. Consumers might evaluate products differently in a store that looks like a high-end supermarket than they would in a store that looks cheap, and consumers feel more comfortable in one or the other layout depending on their self-identity (Miller et al. 1998)(see 5.2.5). However, consumers can relate to both layouts as they are known, they fit with accepted standards. The positive effect of Wefood's new store layouts demonstrates that a surplus supermarket layout that is close to the standard supermarket model is more successful, as more sales were generated.

Also, the collection of a meal from a TGTG partner is compared with consuming food from a regular restaurant. The most popular TGTG restaurant I experienced was Eat, where circa 30 people lined up to fill their TGTG box on the large buffet. Customers appreciated that they could fill their box themselves like in a normal buffet restaurant. Helge, for example, disliked getting a TGTG meal from a buffet restaurant where he could not choose his *'favourite things'* and instead got a prepared *'magic box'*. This made him *'feel like a secondary customer to the people who just go to the buffet'*. Being able to choose items from a buffet versus receiving a prepared selection can be compared to a big versus a limited product range, as the customer can choose among all dishes or receives the selection of a few.

The following pictures (Figures 5.1, 5.2, 5.3, 5.4, 5.5, 5.6) show the old and new layout of the Wefood stores in Copenhagen, Niftie's and the TGTG partner Eat. Comparing the old Wefood store layouts with the new ones, some differences can be noted (see Figures 5.1, 5.3 for the old, Figures 5.2, 5.4 for the new layout). Products are arranged and presented in different ways while a bigger product range is available in the newer versions of the Wefood stores. The updated shops do not look empty anymore, as more products are offered and because items are not stacked in their delivery boxes but are presented loosely on counters. The newer version coheres more to the layout of regular supermarkets with unpacked goods and full shelves. In the case of Niftie's (Figure 5.5), unpacked boxes can be recognised on the shelves on the left hand but also on the shelf in the middle of the

picture, next to some goods that are unpacked and arranged nicely. As in the old Wefood layouts, several products are presented in their delivery boxes (e.g. the box on the ground and the boxes in the shop window on the left in the picture). Further information regarding the impact of these store layouts on the development of the surplus supermarkets is provided in Section 5.5.2. Figure 5.6 shows the buffet of the popular TGTG restaurant Eat with many customers filling their TGTG boxes from a wide choice of dishes. The only difference to the regular service of the restaurant is that customers fill takeaway boxes instead of plates.



Figure 5.1: Wefood Nørrebro, old layout (author)



Figure 5.2: Wefood Nørrebro, new layout (author)



Figure 5.3: Wefood Amager, old layout (author)



Figure 5.4: Wefood Amager, new layout (author)



Figure 5.5: Niftie's store (author)

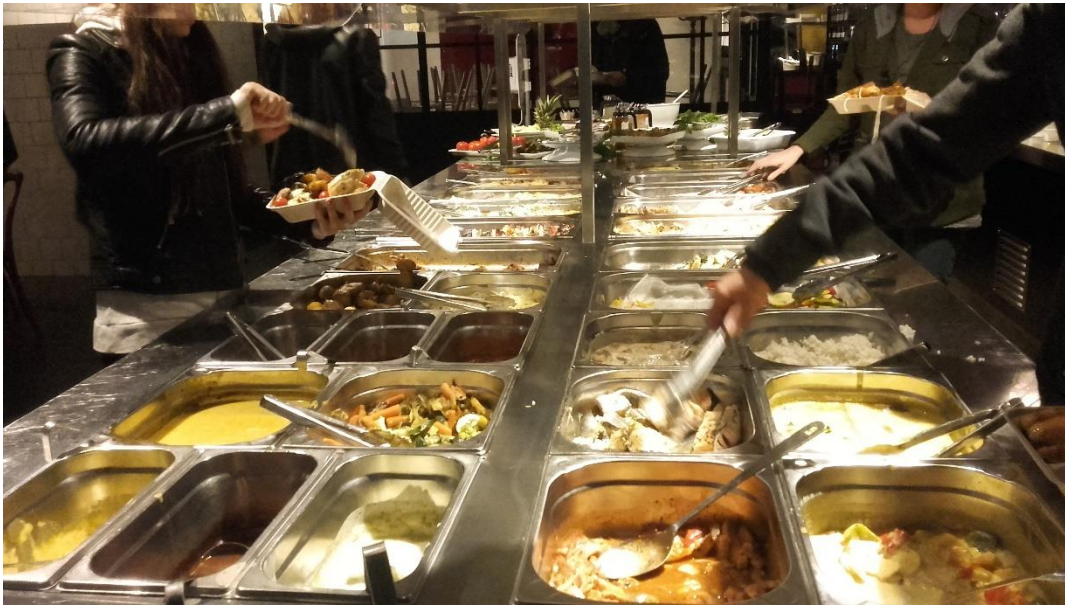


Figure 5.6: TGTG restaurant Eat, customers filling their boxes (author)

Consumers also expect staff to act and react in a certain way, and any deviation from the norm can cause a positive or negative experience. Nico, for example, remembered that his customers expected him to be smiling and happy even when he was stressed by Niftie's negative situation. On the other hand, several Niftie's and Wefood customers appreciated the fact that members of staff were friendlier than regular supermarket employees (e.g. Martin, Gemma) (see 5.3.3).

While some customers appreciated the deviation from the status quo as exciting, inspiring and social, a lot of consumers chose not to use the case businesses because shopping there was too different and thus difficult (e.g. the limited product range). The examples in this section show that consumers are attracted by a big product range and an attractive presentation of the goods as they know it from regular supermarkets and restaurants. Hence, providing a bigger product range and attractive product presentation can help the case businesses to acquire more customers, increase sales and thus the consumption of surplus food. However, it should also be clear that the case businesses are not just another food distributor but offer a bit more: the chance to create positive social and environmental impact and a friendlier and inspiring atmosphere. Tim, a Wefood manager, pointed out that Wefood *'would like to be inspired by how they [regular supermarkets] are running their business'*, but that Wefood had *'another way'* and would not succeed by just copying the regular supermarkets.

5.3.5 Summary of Findings Section 5.3

This section provided insight into the challenges the case businesses are facing. The businesses are innovations and need to acquire customers. The findings show that consumers are attracted by a product range that either inspires them or provides what they need. Furthermore, the atmosphere that consumers absorb when using the case business shapes customer experience and thus affects customer acquisition. The emotions consumers experience when using the case businesses are more intense than one would expect in relation to food shopping. Customers enjoy interacting with happy and social staff while feeling that they are doing something that benefits them and the environment. Some customers felt positive emotions to the extent that they considered shopping at the case business as leisure time.

However, consumers evaluate their experience by comparing it to the status quo. While customers enjoy a happier and more social business interaction, they also appreciate a big product range and attractive product presentation. Many consumers are attracted by a varied selection of immaculate products, as offered by regular supermarkets and restaurants. Hence, to acquire more customers and to be profitable, the case businesses should find the right balance of aligning with regular retailers and restaurants while keeping the special atmosphere.

For all case businesses, product range and atmosphere are essential for customer acquisition. However, it seems that consumers have more fixed expectations regarding the products when shopping at a supermarket than when buying a takeaway meal. Having a choice is important in both cases, but the habit of buying certain products might be stronger in grocery shopping. Consumers' perceptions are influenced by their social circumstances, thus their demographic background (see 5.2). Product range and atmosphere were crucial for all consumers and no significant demographic differences could be detected.

5.4 What successes are the case businesses achieving?

5.4.1 Overview: Surplus food is sold and consumed

The aim of the case businesses is to generate profits via the sale of surplus food. The previous sections explained the requirements to acquire customers and hence to generate sales and profits. This section focusses on the redistribution and consumption of surplus food. The motivation of this research was to find out how businesses selling surplus food can be adopted and reduce food waste. Therefore, it was necessary to investigate whether the case businesses reduced food waste, if surplus food was sold by the businesses and consumed by the customers. The findings reveal that food waste is reduced to some extent as surplus food is sold, donated and consumed. Moreover, degrowth is supported as customers reported to substitute some of their regular purchases with surplus food.

In the following sections, first, findings are presented indicating that most of the surplus food the case businesses stock is distributed. Hereby, results regarding the sale of surplus food by TGTG precede findings from the surplus supermarkets. Thereafter, insights from consumers suggest that surplus food is consumed and not wasted while replacing some regular purchases. A summary concludes this subchapter.

5.4.2 Surplus food is sold via Too Good To Go

Overall, at the time of the study, TGTG sales were rising with the number of surplus meals saved from waste being four times higher in 2017 than in the year before (Deloitte 2018a). The restaurants partnering with TGTG all reported that the amount of food they dispose of has reduced since they have collaborated with TGTG. The buffet restaurant Eat had '24 people' (Eat store manager, Darius) per day who purchased TGTG meals. The evening I interviewed the store manager, Eat had '25-30' (Darius) TGTG customers. Else worked at a bakery and told me that since they have collaborated with TGTG she does not 'throw out so much food'. The amount of surplus food sold varied; Else summarised: 'sometimes I have leftovers, but sometimes I don't have any.' The store manager of a popular café reported that they sell '8 out of 8 every evening', meaning that the café usually sold all offered TGTG meals. Hadar managed a buffet restaurant in Birmingham and since he

partnered with TGTG they *'save about 4-5 kilos [of food] on an average every day'* from being wasted. Another buffet restaurant reported that they reduced the amount of wasted surplus food by 100%, *'80%'* were sold via TGTG *'and the remaining 20% either (...) [staff] take home (...) or (...) it goes to homeless people'* (Jordon).

The reason cafés, bakeries and restaurants have surplus food is because they want to please and attract consumers (Pirani and Arafat 2014; Stenmarck et al. 2011). More food than required according to forecasting is prepared to be able to cater for unexpected customers and to provide plentiful buffet bars and full shelves until almost the end of service. The owner of a canteen that collaborated with TGTG (Carina) told me that *'because people pay by weight (...) [they] have to make it look beautiful'*. For the managers of buffet restaurants in Copenhagen (Darius) and Birmingham (Hadar), that meant they kept the buffet *'always'* full (Darius). Darius refilled his buffet until *'21:00'* or if they were *'busy, after 21:00 (...) [they] are filling up till 22:00'*, while the restaurant closes at 22:15. Hadar replaced the complete buffet *'every 2 hours'*, which meant that Hadar and his team *'have to throw'* the leftovers every two hours because of this *'quality standard'*.

Betty managed a bakery belonging to a Danish high-end bakery chain and showed that it can be done differently. To reduce food waste, she avoided having *'fully packed [shelves] at 3 o'clock'*. She said: *'All pastries have to be gone and then actually we only want to have bread and a little bit of cake left.'* Customers' first reactions were *'a little bit angry'*, but when she explained why the offer was limited, that the bakery preferred that certain products are not available because they sold out to throwing surplus food away at the end of the day, they favoured the idea, thought *'that's good'* and *'like (...) [the bakery] even more'*. However, the progressive store manager had not seen any other bakery (also not other branches of the chain) letting their shelves go empty towards the end of service.

Inevitably, most restaurants have a food surplus at the end of the day, which TGTG partners can sell via TGTG instead of disposing of it. However, as in their standard operations, most restaurants wanted to avoid disappointing customers, which could harm their reputation and customer acquisition, and therefore were not offering all their leftovers for sale. The amount of TGTG boxes advertised in the app was based on very careful calculations which included a buffer and thus surplus food was created that was wasted. At the same time, this strategy ensured that there were enough leftovers to serve all TGTG customers. To keep the number of available TGTG boxes as accurate as possible, the restaurants could update the numbers on the app during the day. Already purchased TGTG boxes could be retracted with the customer being informed via a message and not charged. Even so,

updating the number of available TGTG boxes was too time-consuming for most restaurants, while the process of annulling a TGTG box bore the risk of disappointing customers.

To avoid disappointing customers, most TGTG boxes available were based on conservative estimates. Carina, the owner of a canteen, told me that they *'only sell like 5 boxes'* even though they *'can sell more every day (...); sometimes (...) [they] maybe have enough for 10, 20 boxes'*. The manager was *'worried'* that they *'don't have enough boxes'* and did *'not want to disappoint people'*, as *'they'd be angry'* and *'won't come back'*. To avoid disappointed customers, which were a risk for her canteen's reputation, Carina offered fewer leftover meals than available. Sometimes she updated the number of available TGTG meals on the app, but that happened *'last minute, (...) [was] too late'*. Betty, the progressive store manager who was highly engaged in reducing food waste in her bakery, also advertised a lower number of TGTG meals, was *'careful about the amount so (...) [they] don't disappoint people'*. Betty wanted to avoid annulling purchased TGTG bags in the late afternoon, which was when she realised that not enough bread was left to satisfy all orders, because *'some people are already on their way (...) and then they are pissed off or angry'*. She said: *'If I can see we have a lot, I put extra boxes on'*. Betty also clarified that the other staff members were not updating the app by up- or downsizing the number of available TGTG bags. Hence, the bakery offered less surplus food than available to avoid making customers *'angry'* about TGTG and the bakery chain. Fortunately, the bakery had an *'agreement with a small shelter for homeless people'* who might *'take the rest'*.

Hannes owned a street food restaurant in Birmingham and partnered with TGTG. As opposed to most TGTG partners, Hannes did not advertise a carefully calculated number of available TGTG meals. He kept the default setting of 5 available meals, as he did not have the time to update the number of available TGTG meals and also thought that *'the worst thing (...) in a food business is (...) having to throw food in the bin'*. Several times TGTG customers had been disappointed because there was no food left when they came to pick up their ordered meal. Consequently, TGTG contacted Hannes and requested that he keeps *'5 portions available'*. In Hannes' opinion, *'that's not fighting food waste, that's creating waste'* as they *'normally have less than that anyway'*. The restaurant owner decided that he was *'not gonna keep food for that scheme'* and thus was *'kind of in the middle of pulling out of TGTG'*. When it was not raining, the restaurant had little surplus food anyways and this usually was eaten by the staff and homeless with Hannes preferring *'to give it to the homeless than (...) to some angry people at TGTG'*.

It is questionable if more surplus food could be sold if employees were advertising more realistic numbers of available TGTG meals. On the one hand, the amount of consumed surplus food could be increased and the amount of food waste could be reduced even further. On the other hand, consumers are likely to be disappointed from time to time and might be demotivated from using TGTG again in the future. Vera worked as volunteer for Wefood and *'used TGTG quite often but (...) had a bad experience'*. She *'picked up a bag and there was only 2 breads in there, half the bag wasn't even full'*. Vera's expectation of a fuller bag might have been influenced by the big portion size of most TGTG meals. She *'complained with TGTG and they said: "we are sorry and of course this is disappointing, but we can't guarantee that the bag is completely full"'*. The disappointed customer requested *'some kind of reimbursement'*, which TGTG declined. Vera reacted by not using TGTG again even though *'it's a good thing'*. Disappointed TGTG customers might even share a negative instead of a positive experience, as Vera did, harming the diffusion of TGTG.

Considering that even customers who understand the food waste issue very well and are highly motivated to support businesses selling surplus food, such as Vera, react so negatively to a bad experience, more surplus food might be sold if fewer TGTG meals are offered than available. Maybe, making the sacrifice of not selling as much surplus food as possible causes more surplus food sold and food waste reduced overall. Ideally, the 'surplus' surplus food would be donated and not wasted. Nevertheless, it can be stated that restaurants collaborating with TGTG managed to sell considerable amounts of their surplus food via TGTG.

Figure 5.7 illustrates TGTG's supply chain. TGTG provides the app and packaging that is used by TGTG partners to sell their surplus food. Most surplus food from TGTG partners is sold to TGTG customers, while the rest is either donated (to individuals or charities) or wasted or both.

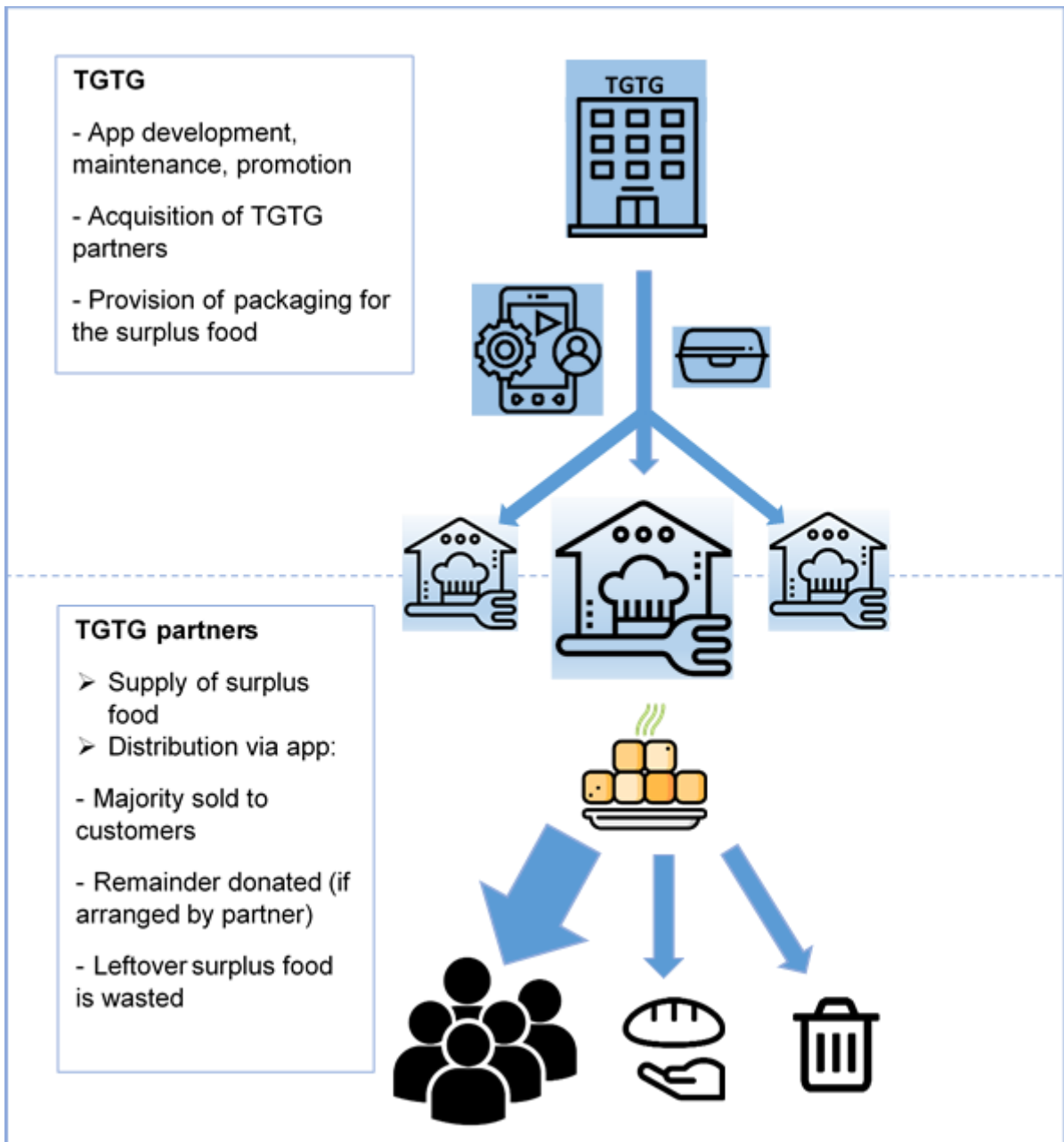


Figure 5.7: Supply chain TGTG (author⁸)

⁸ Icons made by Pixel perfect, Freepik, Dave Gandy, Smalllikeart, Eucalyp, Smashicons, pongsakornRed from www.flaticon.com

5.4.3 Surplus food is sold by Wefood and Niftie's

Wefood and Niftie's both reported that they sell most of the surplus food they stock. As regular retail businesses, Wefood and Niftie's aim to attract consumers with their products. Thus, food that was too old or damaged (e.g. squashed) was discarded. The principle was the same for the surplus as for the standard supermarkets. However, the definition of acceptable food was different and less wasteful in the case of the surplus supermarkets. The food Wefood and Niftie's separated out was not just imperfect but might not have been fit for consumption, such as squashed or mouldy fruit and vegetables. Vanessa, a Wefood volunteer, explained that they did *'not (...) have to waste a lot'* but that some of the donated vegetables were *'already like bad or totally old and then (...) [they] have to throw some of it out so the rest will look nice'*. Valentina, who also volunteered at Wefood, and Vanessa, both reported that most of the surplus food the supermarket offers is sold. Niftie's owner Nico estimated that the business, *'out of 1,000 tonnes, (...) probably wasted about 200 kg max'*.

Edible food that could not be sold was offered cheaper, free, was donated or used in other ways. Wefood offered bread, fruit and vegetables free when a new delivery of those products arrived so that the older items got used as well. If the store stocked large amounts of a perishable product, it was sold *'a bit cheaper than (...) normally'* and was given *'away for free'* after the last day of sale, indicated by a date. Surplus food Niftie's could not sell was donated *'to charities, soup kitchen, [and] people'*. As *'there is no excuse for waste'* Nico made sure that *'someone else'* could *'benefit from it'*. Niftie's also tried to use food that was not edible anymore as a resource. On one occasion, Niftie's received many fresh strawberries, and Nico did not manage to sell or donate them in time. Thus, *'instead of binning it [he] planted them'*. The entrepreneur remembered that he only once had to dispose of *'supplied (...) stock, which was not fit for purpose'*. Hence, it can be stated that most surplus food offered by the surplus supermarkets is sold.

Figure 5.8 illustrates Wefood's and Niftie's's supply chain. The surplus supermarkets acquire surplus food from suppliers, such as retailers, manufacturers or producers. Most surplus food is sold to customers, while surplus food that cannot be sold in time is donated to either consumers or other recipients, such as restaurants or charities. Heavily damaged products and those with questionable food safety are wasted with this category being rather small.

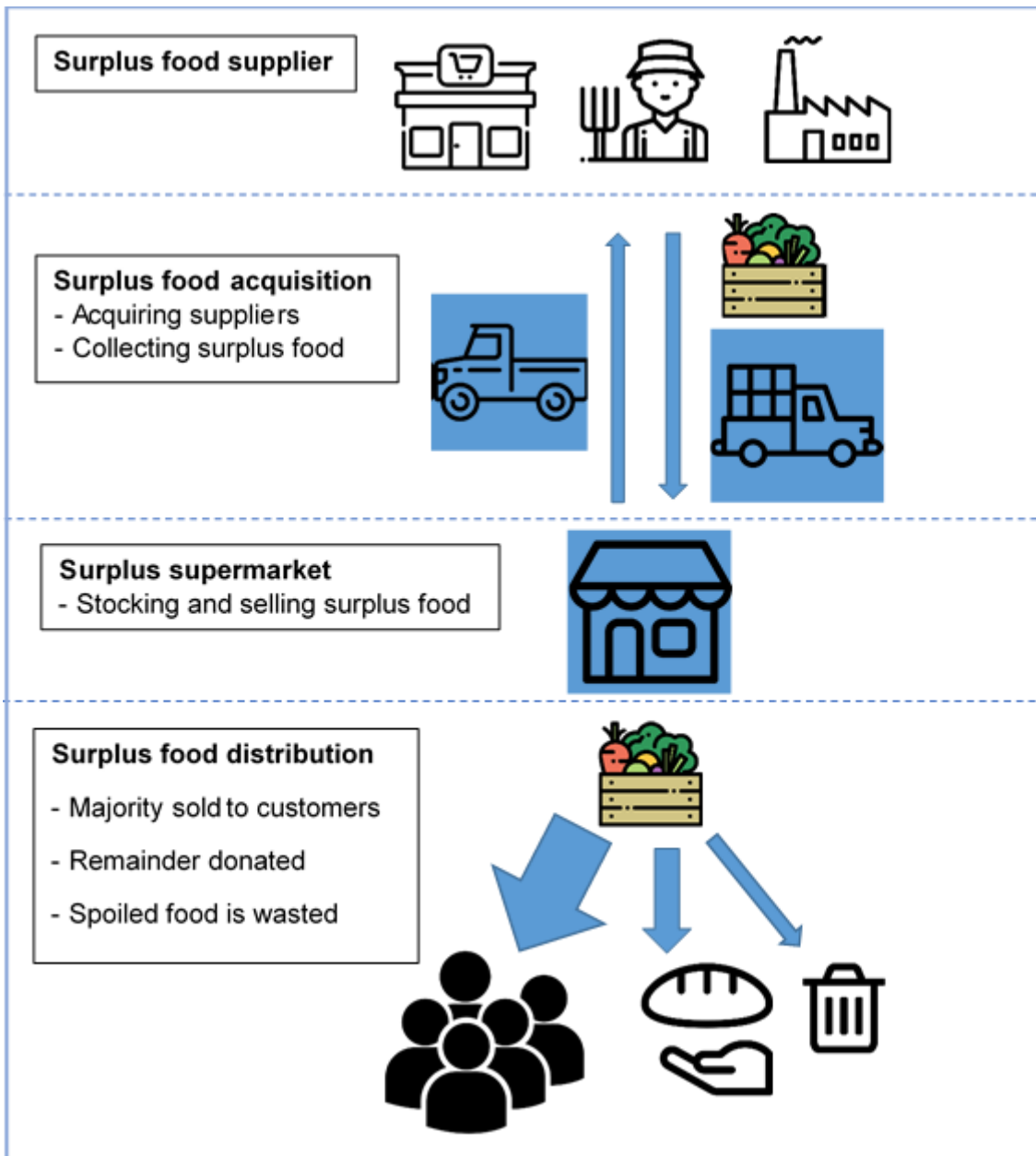


Figure 5.8: Supply chain Niftie's and Wefood (author⁹)

⁹ Icons made by Pixel perfect, Freepik, Gregor Cresnar, Srip, Dave Gandy, pongsakornRed from www.flaticon.com

5.4.4 The consumption of surplus food reduces food waste and supports degrowth

Whether the case businesses reduce food waste depends on two factors. First, surplus food needs to be sold and second, it needs to be consumed while its consumption should not cause other products in the household to be wasted. The purchased surplus food or other food in the household might not be consumed and wasted instead if the customer buys more than he or she consumes (e.g. because of the cheap price of surplus food, bad planning, etc. – see 2.3). Regarding TGTG this can be the case if a bought TGTG meal prevents leftovers at home from being eaten in time, for example. In the case of the surplus supermarkets, customers might buy more surplus food than they consume, causing food that cannot be consumed in time to be wasted at home.

However, customers reported that they consumed the surplus food bought at the case businesses. Hella ate most products she bought at Niftie's, such as *'snacky things'* and *'yoghurt'*, *'straight away'*. She also bought six boxes of teabags of which she kept some and gave some to friends. Moreover, Hella purchased a Christmas pudding and aimed to *'keep that till Christmas'*. Clara, as well, consumed the products she bought at Niftie's. She bought, stored and used them without having been *'religious in checking'* the dates, as she *'of course'* eats food past its 'best before' date. Henry and Felipe were regular TGTG users and usually finished the TGTG meals they collected in the late evening, using them *'for two meals basically, dinner and (...) lunch'* (Felipe). Also, Helge *'always'* managed to eat his TGTG meal. Peter and Harriet, both Wefood customers, only bought items they planned to consume and resisted buying further products that they might not have been able to eat in time. When I met Peter, he shopped at Wefood and *'was thinking of buying cauliflower, making cauliflower soup, which is very nice'*. However, he did not buy the cauliflower as he knew that his wife was cooking at that moment, *'trying to get rid of food'*. Hence, Peter just *'bought some spaghetti (...) and then a drink, because (...) [he] was thirsty'*. Harriet only bought pasta and no bread, as she had just baked bread herself. Overall, the interview data suggest that customers consume the surplus food they buy and only purchase food they know they will consume.

Customers value surplus food despite its cheap price and the fact that it was destined for waste. They are aware of the shorter shelf life of surplus food and therefore either consume it in time or freeze it to extend its keepability. The TGTG meal Susan collected at Eat at 22:00 served her and her daughter for lunch the next day, and so she put *'it in the fridge'*,

while she froze some of the fish, knowing that they *'won't eat it all tomorrow'*. Sonya used TGTG for bakeries and froze all the food she bought, as it was too much to eat in time.

I picked up the app and we tried it a couple of times, always in bakeries actually (laughing) and then we froze (...) all the things we got. We had a lot of things, we couldn't eat it all, so we froze it (...) and then just use it in the weekends if we, ja, wanted some extra.

The consumption of surplus food even reduced the purchase of fresh products to some extent. Customers reported having used TGTG when they did not have other food available, while the surplus supermarket customers substituted some of their regular shopping with surplus food. Helge either decided spontaneously to get a TGTG meal after having had a *'look in (...) [his] fridge'*, or planned his purchase if he wanted to get food from a particular restaurant. In both cases, it can be assumed that the purchase of the TGTG meal substituted the buying of other food. Also, Sarah replaced the consumption of 'fresh' food for lunch with having bought a TGTG meal. Before Sarah used TGTG, she reported that she used to *'either go to the restaurant and eat there or (...) just bring food'* to work. Maya's housemate *'lived on TGTG'*, meaning that in their common fridge *'his shelves were just full of the TGTG boxes, no other food'*. This customer only purchased surplus food, no regular food. Hans realised that he could not get all the products he needed from Wefood but still aimed to get as much of his shopping from Wefood as he could and to only buy the rest at a regular supermarket.

I'm not thinking that will be my, the only shop I buy in, but I can come first here and then check what I can buy here and then go to another shop, a regular one to buy things that I didn't find. (Hans, Wefood customer)

Very few customers reported that they did not consume all the purchased surplus food and had to throw away leftovers from their TGTG meal. While the majority of the meal was consumed and thus food waste reduced, customers still felt very bad for disposing of the rest of the surplus meal. Herbert and Susi *'tend to have a lot of food leftover from the leftovers [TGTG meals], so (...) [they] tend to have to throw it out sometimes'*, despite already having ordered fewer meals than there were people (3 meals for 4 people). When they threw away the rest of the meal they felt *'bad, very bad'* (Susi), even though they *'have eaten a big deal of it'* (Herbert). Herbert felt *'bad'* because if he *'wouldn't have taken as*

much food, someone else could have gotten a box to take it and eaten it'. Also, Maya's housemate who solely consumed TGTG meals 'sometimes (...) had to throw away the food', as 'he had like 4 boxes per week, and he didn't manage to eat it all'. Sometimes even Maya disposed of some of his TGTG leftovers 'because it was contaminating the other food because it's only in those paper boxes'. While these customers did waste some of their TGTG meals, they still consumed most of it and purchased surplus food instead of regular food.

Overall, customers declared that they consumed the purchased surplus food. Participants reported either having consumed the surplus food immediately, having shared it, having frozen it or still having eaten it after the 'best before' date had passed. Furthermore, customers substituted some of their regular purchases with surplus food, meaning that the consumption of re-used resources replaced the consumption of new resources supporting degrowth, albeit on a small scale. Only a few customers reported having wasted some parts of their TGTG meal as they did not finish it in time. Moreover, all participants seemed to only buy surplus food they planned to consume.

5.4.5 Summary of Findings Section 5.4

In summary, it can be argued that surplus food is mostly sold and consumed and hence food waste reduced. The case businesses manage to sell most of their surplus food and donate most of the food that cannot be sold. Comparing the app TGTG with the surplus supermarkets Niftie's and Wefood, it seems that donating the food that cannot be sold is more integrated into the surplus supermarkets' operations, as not all TGTG restaurants donate the leftovers. Customers reported consuming the surplus food they buy and using the surplus food they purchase as a substitute for fresh food. Consequently, degrowth is supported to some extent. Customers' demographic background did not seem to make a difference regarding their consumption behaviour.

An interesting point is that the attempts of the case businesses to please and attract customers create surplus food and thus food waste as in the case of regular supermarkets and restaurants. TGTG restaurants do not offer all their surplus food to avoid disappointing customers and tend to provide too big rather than too small TGTG portions in order to please customers. Also, the surplus supermarkets waste some of their stock because the surplus food is not fit for consumption or not sufficiently attractive or because there is just too much of it. However, customer satisfaction is important to the sale of surplus food (see 5.3). Hence, it can be argued that while the case businesses seem to reduce food waste successfully, wasting a little surplus food is part of these business models.

5.5 How can the case businesses become long-term solutions to food waste?

5.5.1 Overview: Funding is the essence of sustainable business development

To become long-term solutions to food waste (as long as there is surplus food), the case businesses need to be economically viable, thus they must generate sufficient sales and profits to cover costs and to invest in business development. As described in Section 5.3, only consumers having a positive experience with the case businesses will become regular customers. To create such a positive consumer experience requires skilled staff and facilities. Businesses selling surplus food commercially are subject to additional tensions (explained in the next paragraphs), and therefore their need for funding is altered. The case businesses need seed capital, funding to start the business, to do the necessary investments so that customers can be acquired and profits generated. Profits can be invested in further business development. Hence, to become a profitable business that sells surplus food successfully, the case businesses need access to funding. Even though this finding might not be very surprising, it still is valuable as the barriers and drivers for sustainable business development of businesses selling surplus food commercially to consumers have not been researched before.

While funding is essential for most social enterprises (Doherty, Haugh, and Lyon 2014), the case businesses experience additional tensions regarding supply and demand, as they sell surplus food and thus have different business models. Regular supermarkets and restaurants can purchase their supply from a wide selection of suppliers with the power dynamics often being in favour of the retailer (Devin and Richards 2018). The case businesses, in contrast, depend on the goodwill of suppliers, as donating or selling their surplus food is not part of their standard operations. Providing surplus food to the case businesses creates additional effort while generating little or no revenue. Hence, the power relation is in favour of the suppliers, not the case businesses. Amount, type and quality of supplies depend on the supplier and vary with each delivery. The unpredictability of the amount, quality and type of the surplus food available represents a challenge for business operations and requires flexibility, in particular regarding the surplus supermarkets. In contrast to regular retailers and restaurants, businesses selling surplus food cannot order or prepare the products they would like to sell; they cannot plan, with any certainty, for

particular supplies that will definitely be available at a certain time. Instead they sell the products they get - the available surplus food. Selling products that are available, not the products that are demanded, complicates customer acquisition.

Another challenge regarding the sale of surplus food, which mostly affects the surplus supermarkets, is its short shelf life. Time to collect, store and sell the products is shorter, complicating logistics. Moreover, surplus food is considered to be of lower value than fresh food, and thus its retail price is relatively low with a small margin generating low profits. As a consequence, the case businesses have to manage their operations more cost-efficiently than other retailers and restaurants while profit generation is slower. In addition, selling a product that is considered waste by regular retailers constitutes a challenge regarding customer acquisition, as some consumers associate negative attributes with surplus food.

The case businesses are operating innovative business models which create positive social and environmental impact, but they also face challenges regarding the acquisition of supply and customers and the generation of profit. To master these challenges, skilled staff and facilities are required. Because of their slow profit generation, the case businesses need seed capital to afford the necessary investments.

In this section the funding needs of the case businesses are elaborated. First, the funding needs of the surplus supermarkets are presented. The case of Niftie's shows that the lack of funding can be detrimental, while Wefood is exemplary for successful business development based on the access to funding. In the following, findings with respect to TGTG describe how funding enabled business growth. A summary concludes this subchapter.

5.5.2 Surplus supermarket funding needs

The results show that the experience consumers have at the case businesses, formed by their perception of the product range, layout, staff and overall atmosphere, is of utmost importance. In the case of the surplus supermarkets, this means a store should be in a good location (see 5.2.3), arranged in an attractive way (5.3.3), offer popular goods at low prices (5.3.2, 5.2.4), be run by friendly vendors (5.3.3) and have convenient opening times (5.2.3). To provide these factors funding is required.

To create an attractive shop layout, space for storage is needed, as otherwise products have to be stored in the shop area, which compromises the layout. Furthermore, a lack of storage space means fewer goods can be acquired, limiting the product range. The pictures below (Figure 5.9) show the consequences of having to store products in the shop. Shelves are blocked and boxes are on view to the customer instead of products.



Figure 5.9: Lack of storage (left Niftie's, right Wefood) (author)

To be able to offer a broad product range, suppliers have to be acquired, which requires expertise. Convincing suppliers to invest time to sort through their surplus and to put the edible food aside so that a potential competitor can pick it up and sell it is not an easy task. Sometimes suppliers contact the surplus supermarkets and offer surplus food. This happens sporadically and can create a logistical challenge if the surplus food needs to move fast, as these offers cannot be anticipated and planned for. However, most surplus food is acquired by the case businesses, who contact retailers or food producers and ask for surplus food. Some suppliers are regular and therefore provide surplus food the surplus supermarkets can anticipate and plan for.

For the transport of the surplus food, a vehicle is needed. The bigger the vehicle and the more vehicles can be afforded the more products can be transported and thus offered in the shop. However, the precondition is that staff are available to acquire, pick up and store the products, that acquisition of supply has been successful and that there is space to store the items.

To run the shop, staff are required. A shortage of staff means that fewer supplies can be acquired and transported, and the opening times of the shop are reduced. Moreover, expertise is needed to stock the right products and to create an attractive store layout. The store needs to be equipped accordingly, and marketing material has to be created. To generate a nice atmosphere in the shop, staff needs to be welcoming and positive. In addition, expertise is needed to develop a successful pricing strategy, where products are priced to generate as much return as possible whilst still being as cheap as necessary so that profit, which finances the business, can be generated. Proficient staff is also required to develop a successful business model and marketing strategy while hiring experienced personnel creates salary costs.

Funding is needed to cover the cost of the facilities and staff that are required to set up a store attracting and pleasing consumers so that sales rise and further investments can be made. Wefood and Niftie's can serve as examples for business development with (Wefood) and without (Niftie's) funding. The model below (Figure 5.10) illustrates the impact of funding on the surplus supermarket business model. Seed capital is necessary to invest in staff and facilities so that supplies can be acquired, transported, stored and offered in an attractive store. Thus, customers can be acquired, sales generated and profits reinvested into business development.

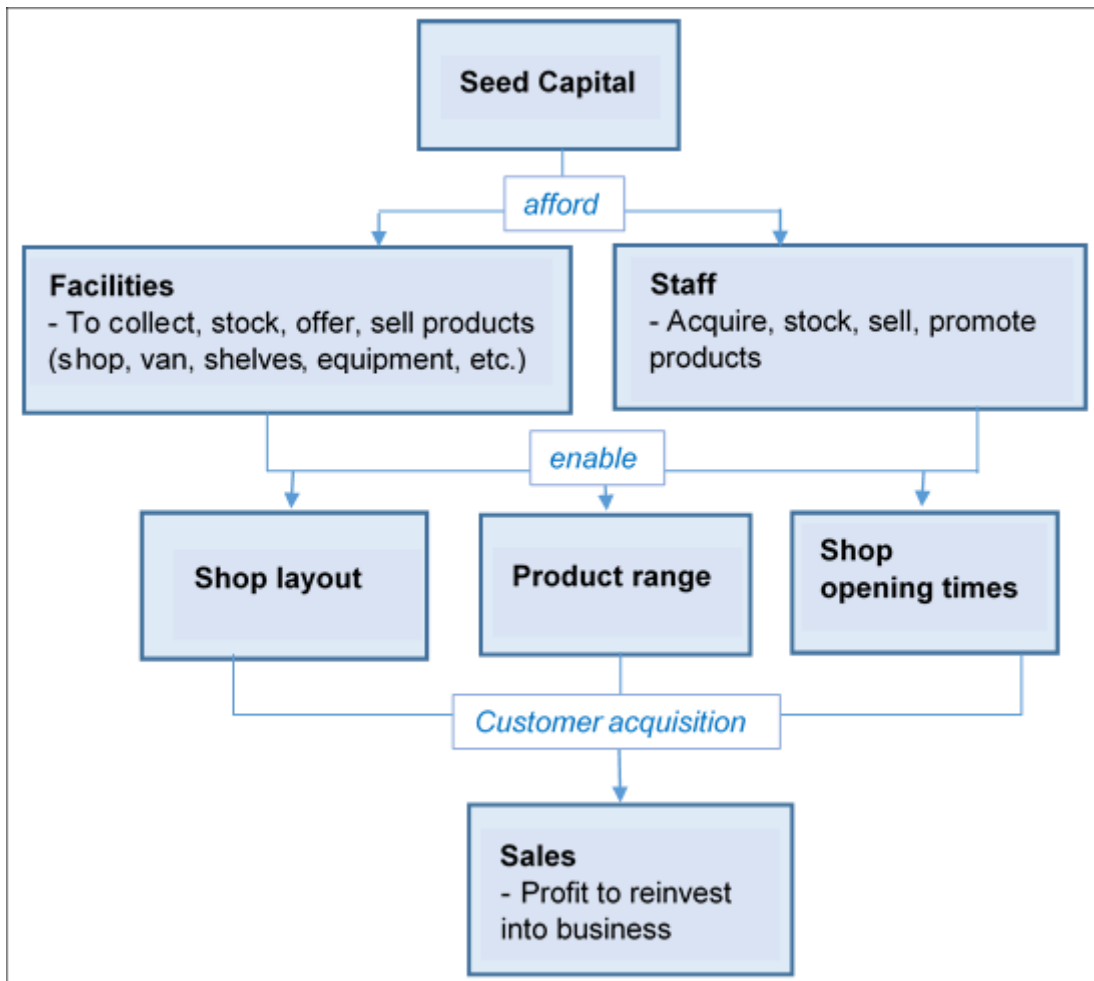


Figure 5.10: The impact of funding on the surplus supermarket business model (author)

This model (Figure 5.10) could be applied to most businesses. The difference between supermarkets selling surplus food and regular retailers is the context which creates additional challenges and enhances the need for funding (see 5.5.1). Comparing the business models of surplus supermarkets and social supermarkets with each other, several differences can be noted. First of all, social supermarkets are funded by organisations and do not need to be profitable in order to access capital (see 2.2.3). Second, charitable organisations are not perceived as competitors by other retailers, meaning that the acquisition of supply might be easier for social supermarkets. Ralf, for instance, store manager of a Danish discount supermarket, explained to me that they were donating surplus food to a charity that sells it but not to Wefood. Also, customer acquisition is facilitated by the fact that the customers of social supermarkets are in need, as shopping at a regular retailer is not an alternative they can easily choose. Moreover, customers of social supermarkets are related to those via memberships and often receive other social benefits there as well, which might enhance customer acquisition further. Hence,

businesses selling surplus food commercially differ considerably from regular retailers and social supermarkets.

The following two sections outline how funding influenced the development of the surplus supermarkets Niftie's and Wefood. Niftie's had no funding and ceased operations, while Wefood had access to funding and developed successfully.

5.5.2.1 Niftie's development - lack of funding

Nico founded Niftie's to fight food poverty in his community in Dover by selling surplus food at a low price instead of letting it be wasted. First, Nico started the business from his living room, selling surplus food very successfully. Second, he won a grant of £500 to scale the idea of selling surplus food while the local shopping centre manager invited him to trial a shop in an empty store in his shopping centre. As Niftie's was a novelty, the newspaper Daily Mail reported about Niftie's (Cockroft 2016; Glanfield 2016; Gordon 2017; Duell 2017), and this publicity attracted many consumers. From there, Niftie's grew, Nico left his job and ran the surplus supermarket as a full-time job. Niftie's moved into a bigger shop twice, with both stores having been located on the high street in Dover.

Nico worked *'70 hours a week'* doing *'everything, from the paperwork (...) to running of the shop, sourcing suppliers, through to dealing with the website maintenance and social media as well'*. The founder of Niftie's paid himself *'£4 an hour'*, which equalled 5% of the revenue and was *'just enough to pay (...) [his] bills'* and *'to feed (...) [his] kids'*. Nico put *'95% of the money back into it [the business]'*, to pay his overhead cost and the stock. He tried *'to increase the amount of free stock'*, but still needed to pay some suppliers. Moreover, Nico had to pay full council rates and could not get a concession *'despite the fact (...) [he was] doing this for society'*. Running the shop as efficiently as possible with such a limited budget was exhausting, as Nico told me: *'It drains the life out of me, (...) but it is rewarding at the same time'*.

To get further funding was very difficult for the one-man business, as applying for grants or finding investors require time and expertise. However, Nico needed a van and more storage space to be able to get more products and to attract more customers by this means. Moreover, the more goods he purchases from a supplier, the lower the unit price. Hence,

if Nico could have transported and stored more products, he could have got better rates and increased profits. If he was able to take more stock, he could also have received surplus food from bigger suppliers, which might have been products that meet customer expectations better. Having the right products to satisfy customers is of utmost importance to be successful.

If a customer comes in with expectations, we don't hit them then they don't come back in again, because they think we are too small time. That's one of the main concerns for me. (Nico, owner of Niftie's)

The business owner was aware of the need for 'some form of funding' and therefore participated in the Virgin Media Business Award 'VOOM' providing the winner with prize money (a share of £1,000,000 for all category winners) and a mentor (Virgin Media Business Ltd 2018). Niftie's was voted third in the start-up category out of 3,500 businesses participating in total. While this was a good achievement, no 'life-changing grant' nor mentorship was obtained, leaving Nico demotivated.

I'm not sure where it stands now. I'm fed up (...) I just don't know if I can do this anymore. (...) I've tried doing this [for] 2 years, it's not going anywhere (...) I don't want it to come to an end, but I just feel deflated, I am feeling like the fire in my belly is going out (...) I'm concerned about my wellbeing. (...) I'm very disheartened right now. (Nico, owner of Niftie's)

Several factors worsened the situation. Niftie's experienced a decline in consumers passing by and entering the store, as many consumers prefer to shop online and do not visit the high street as much anymore. Nico described the location of his store as in 'a council [city] where there is no shops anymore (...) where there is no customers'. Moreover, the shop layout was compromised due to a lack of shelving units and water damage in the cellar, limiting Niftie's storage space. As there was no funding available, Nico asked for donations to get the shelving units he needed, but he was not successful. Additionally, the landlord was not willing to repair the water damage caused by a flood.

Nico could not offer more popular products, as he was lacking the facilities to transport and store them. Moreover, the shop layout was not attractive as he could not afford basic appliances such as sufficient shelving units. Furthermore, running all business operations himself caused Nico to be physically and mentally exhausted. Niftie's could not provide a

positive shopping experience, which is based on the product range, store layout and atmosphere in the shop. Consequently, sales declined. Profits from sales were just enough to cover the cost to operate the store and to pay Nico's bills via the surplus of £100 per week. Hence, no professional employees could be hired to enhance the business model, improve the store layout or acquire better suppliers or funding.

In the following four months, the situation got even worse. Council rates rose, the landlord urged Nico to vacate the property and the store got damaged by builders working on the flat above Niftie's, owned by the same landlord who was converting the building into flats. The builders had problems with the plumbing causing severe water damage to the shop to the extent that stock got ruined, the ceiling became unstable and lights got detached from the ceiling creating a hazard to consumers who visited the store. Thus, the shop had to be closed temporarily. Nico got severely depressed; he stated that sometimes he *'couldn't even get out of the car to come into work for fear of what's happening'*. Because he aimed to evict Niftie's, the landlord refused to repair the damage and Nico decided to close the business permanently, as he could neither afford to repair the store nor to realise any of the other necessary investments.

I've had enough. (...) this is out of my control. (...) This is why [Niftie's] has come to an end, I can't take this anymore. I am that stressed for the first time in 3 years, I am looking for full-time work. (...) he [the landlord] pushed me on the verge to depression, he's pushed me down the track on anti-depressants, he pushed me into counselling, he's pushed me into trying to protect my health. I really didn't know how much more I could take. (Nico, owner of Niftie's)

The lack of funding caused Niftie's to cease operations. The necessary repairs as well as the deposit needed to rent a new store could not be paid and Nico finally gave up, wishing *'it could go on'*. For Tim, a Wefood manager, Niftie's development was predictable if not inevitable under the given circumstances. Running a surplus supermarket is challenging *'and if he [Nico] is doing it by himself he just can't build and grow'*. To *'free some time'*, Tim suggested that Nico *'should find a friend or business partner that has the possibility to step into this project for a couple of years without getting a guaranteed income'*.

If Nico had found access to funding, necessary investments regarding staff and facilities could have been made. With an improved product range, store layout and business plan, Niftie's might have grown successfully instead of ceasing operations.

5.5.2.2 Wefood's development – funding available

Wefood was founded by a Danish charity (DC) to generate profits to fund the charity's projects fighting food poverty in least developed countries. Therefore, the main goal for Wefood, as for Niftie's, was to be profitable, to create a financial surplus. While the means by which profits were generated benefit the society and the planet, making sure food waste is reduced was not the main purpose. Furthermore, a profitable business can invest in business development and evolve to further increase sales. Hence, more profits are created while more surplus food is sold. For Wefood, the generation of profits to support the charity projects represented its right to exist, the reason DC invested funding into the business. That meant Wefood needed to be profitable enough to cover its own costs including re-investments into the business for business development while creating a financial surplus for the charity projects.

DC provided a certain amount of funding, human resources and expertise, which enhanced business development and the acquisition of further funding. To open its stores, Wefood received funding from DC, private investors and the sale of private shares. Moreover, Wefood's business development benefitted from the experience gained from the 125 second-hand stores also run by DC to fund the charity projects. Wefood's business model was very similar to the business model of the second-hand shops. Very few full-time employees (1-3) managed the business development while volunteers run the business. Each store had a team leader who was a volunteer as well and coordinated the other volunteers and the work schedule. Volunteers contacted suppliers, picked up products, stocked products in the store, managed the store layout, sold the products, cleaned the store and calculated the turnover at the end of the day.

While on the one hand costs are reduced if volunteers run the stores, on the other hand the lack of expertise compromised business operations, such as the acquisition of suppliers, the design of the shop layout and the creation of a profitable pricing strategy. In the past, those processes were facilitated by an employee of the paid management team

who was responsible for managing the volunteers and everyday decisions in the stores. However, this employee left the job because of stress and had not been replaced for several months. Thus, in the meantime, the volunteers were on their own, made decisions regarding the store management (such as supply, layout and pricing) themselves, according to their common sense. The volunteers' backgrounds were diverse, but they were not specialists in retail and lacked expertise, which had negative effects on the product range, shop layout and pricing strategy. Karsten, a Wefood volunteer, thought that Wefood needed *'more professional people'* as he and his colleagues *'are not professionals'*.

If we really want to develop it, then you need investment, money (...) you should still have the volunteers, of course, but you must have an organisation where you have competent people, who know, who have knowledge in dealing with daily goods. (Karsten, Wefood volunteer)

Valentina, a Wefood volunteer in the store in Amager, also lacked expertise and therefore did not feel very confident when she had *'to decide a price'* while *'there is nobody to coordinate'*. She wondered, for instance, if the price should be the same as in the store in Nørrebro or whether they *'have two kinds of customers'* and therefore needed a different price. Marcus worked as a volunteer in the Wefood shop in Nørrebro and also reported difficulties regarding the pricing. For example, *'some customers'* questioned product prices, saying: *'10 kroner? I only want to give 5'*. To sell the product and not lose a customer, Marcus relented, which *'is not an official policy'* as his colleague Melvin clarified. Melvin thought that *'the main interest is to move the product, since (...) [they] got it for free it's better to sell it for 1 kroner than to throw it out'*. Tim, a Wefood manager, saw that differently, as *'the most important (...) is surplus [profit], because if it doesn't generate surplus (...) [Wefood] can't develop'*. In order to be a profitable business, it was important *'to get the volunteers to really buy into that purpose'* when they were wondering: *'how should we price the product, how should we approach the customers, should we try to get the best possible price or should we try to get something sold?'* (Tim). Pan, a volunteer at the store in Amager, pointed out that most volunteers were motivated by social reasons and had yet to understand the business perspective.

We have to learn on the volunteers to think on another way, because most of us are starting up because we think it was a good thing and we like to be social and so on, but (...) we have to look at it as a normal shop and looking for how we sell the stuff best, (...) how to set the products in the shop and so on, it has to be better. (Pan, Wefood volunteer, Amager store)

Furthermore, Wefood suffered from a lack of volunteers, which meant that the opening times and the acquisition of supply were limited, as described by Valentina:

We are not enough, we can't keep the shop open as many hours as we would like to. And then again you have to have the goods, you have to have something to sell. (...) you need the people to make contact, to go and collect it and you have to have people here to keep the shop open.
(Valentina, Wefood volunteer)

Tom, a Wefood manager, confirmed that *'the logistics team are understaffed and under-connected'*, and hence, the *'supply chain is too limited'*. To attract customers, Wefood's supply chain *'has to be much more reliable, (...) much bigger with regards to the range of products and in order to not have too many empty shelves and too many repetitions among the goods.'*

As in Niftie's's case, consumer experience needed to be enhanced to generate more sales and to create a profitable business. While the store in the trendier area Nørrebro was just breaking even but not generating a financial surplus, the store in Amager was not even covering its costs. Thanks to the availability of funding through DC, necessary investments to improve the situation could have been made. Two former retail experts were hired and enhanced business operations. They improved the store layouts, upgraded the supply chain, set a reasonable pricing strategy and amended volunteer recruiting and management. As a result, the volunteers' expertise was enhanced as well, as they learned how the pricing should be done in order to be profitable, which layout is attractive and how to create convincing promotions. Tim explained that having invested *'extra resources (...) has currently paid off'*. As he had *'a background within retail'*, the new expert who was responsible for the supply chain *'knows who to contact, how to contact them, the link and the way how they [suppliers / supermarkets] work together'*. Because of having *'set a better team'*, Wefood was *'receiving quite a lot of products'* and was also *'looking into actually building or renting [a] warehouse facility'*. Thus, the increased *'fresh fruit and vegetable donations'* could be stored *'properly'*. Tim reported that *'over 50% growth in revenue'* caused both stores to be profitable. Even the wages of the new full-time employees could be covered while still generating profits, *'if the shops continue to do as well as they are now'*.

The volunteers confirmed the positive change the new experts had created. Miriam realised that the new managers *'know a lot of things'* that they, being *'only volunteers'*, did not know while *'they also explain how their job works'* and hence taught the volunteers. Miriam did not like the new store layout, *'because it looks like really cheap'*, but learned from the retail experts that this special product setting affects customers positively. Valentina believed that due to the new layout *'people spend more time'* in the shop *'because (...) you don't see everything at once, you go around, looking'*. Moreover, Wefood offered *'a lot of drinking stuff (...) because it sells fast'*, which was *'needed to make money in a quick way'*. The new managers also reported sales numbers to the suppliers so that those could use it for their CSR and marketing. Valentina appreciated the influence of the new managers and told me that *'they've gotten (...) a lot of stuff, new stuff and more delivery, (...) suppliers, (...) something every day'*, which caused the Amager store to *'earn a lot more money'* and to finally *'have a surplus'*. Having had *'better staff'* who *'know what they are doing, (...) know how to run a'* supermarket, *'is the most important drive'* for Wefood's positive development according to Tim. The new experienced employees managed to acquire more suppliers, to teach staff and to improve the product range and shop layout.

Because of the availability of funding, Wefood could enhance the supply chain even further and react to the shortage of volunteers by paying for the transport of the products instead of having to rely on volunteers for the supply team. Hence, the volunteers available could be deployed to keep the shop open while products could still be collected frequently. Volunteers were *'a scarce resource'*, as Tim acknowledged, and it seemed to be difficult *'especially on the logistics team (...) to keep people'*. The use of *'professional transportation firms'* was *'faster'* and more efficient, *'especially on the larger donations'*.

Product range, layout and staff influenced consumers' perception of the atmosphere. Therefore, having popular products and motivated volunteers is essential for customer acquisition (see 5.3.2, 5.3.3). The earlier lack of products, sales and staff combined with no clear direction for business development caused a slightly negative atmosphere, particularly in the Amager store. Tim remembered that the lack of structure in the stores affected volunteer perception and thus business success: *'We didn't have any procedures, we didn't have any manuals, we didn't have a clear goal, what's the purpose, why are we doing it, how are we doing it, what's important'*. The new managers *'are much more clear'* and made the volunteers understand *'that this is not only about bringing down food waste'* but that *'food waste is actually a mean for the goal, which is to generate a surplus for the projects'*.

The new structure included a more fixed pricing strategy, set by the new managers, which was not questioned by the volunteers who had been used to reducing prices to sell more. Since the change, the volunteers had started to *'come back and say "that's too cheap" whereas before they would have always said "that's too expensive"'*, explained Tim. Volunteers also informed the managers if a product did not sell well so that they could then adjust the price to be *'customer-focused'*. The volunteers in the Amager store incorporated the business focus and even shared the daily turnover in their Facebook group. Tim explained: *'They are very focused on generating a surplus because they know we have to shut down the store if they don't'*. This clear purpose motivated staff to *'always pull extra weight'*, which meant that if necessary *'someone will swing by (...) on their day off'*. Their involvement in a clear plan for business development motivated the volunteers and, combined with a better product range and layout, improved business operations and the atmosphere in the shop.

The availability of funding furthermore enabled Wefood to open another store and to realise the learnings made with the first stores, for example, regarding the location and the design. Pan explained that the store in Amager, *'is on the wrong side of the road'* as *'many other supermarkets'* are on the other side. Moreover, the store was only open in the afternoon when people were returning from work and travelled on the opposite side of the road towards the residential areas. *'Amager is not as good a location (...) and we can see that in the turnover'*, said Tim. Nørrebro, in contrast, is a trendy multi-cultural area and the store, which was located next to other shops and cafés, generated more sales than the Amager store. The location of the new store in Aarhus is in an area that is similar to Nørrebro and *'very close to university which is north of the city, so they [consumers] go by bike through the square [the new location] (...) on their way back (...) and there is 2 supermarkets'*. Tim's reasoning for the new location was based on his experience with the two stores in Copenhagen.

The design of the new store benefitted from the experience with the stores in Amager and Nørrebro. While those stores *'look like discount supermarkets'*, the shop in Aarhus had the layout of a high-end supermarket, *'is much more modern, (...) much nicer, (...) like the high-end supermarkets in Denmark'* (Tim). Tim expected the Aarhus shop *'to be the best store on the earning side'*, which is why also the design of the stores in Amager and Nørrebro was considered to be updated to resemble high-end supermarkets. Even a fourth store was to be opened in Copenhagen, and it was planned to have a café area so that people can gather, artists be invited and surplus food be tasted.

Wefood's development was positive because of the availability of funding that enabled the business to do the necessary investments. In contrast, Niftie's ceased because of the lack of funding.

5.5.3 Too Good To Go – funding enables growth

The business model of TGTG is different from that of the surplus supermarkets, as it is not a store but an app that connects consumers with restaurants, cafés, bakeries or supermarkets selling their leftovers. To sell surplus food, the facilities and the staff of the TGTG partners are deployed. Consequently, no additional cost is created, as staff and facilities costs are covered by the usual operations of the restaurant, café, bakery or supermarket. However, to run the business, an office and staff are still needed. TGTG has 21-30 professional full-time employees who work on creating a positive customer experience (PitchBook 2019).

Having a choice of restaurants in the proximity is important for consumers and similar to the broad product range in the surplus supermarkets (see 5.3.2). For the app to be successful, a number of restaurants in several areas have to be TGTG partners so that consumers can choose among various restaurants and have a positive experience. If there are no or very few restaurants in the consumer's area, the consumer will be disappointed and is not likely to use the app again or to promote it. Madleine, a former TGTG manager, explained the situation.

(...) if you don't have a lot of restaurants in the region, then you kind of missed your chance to (...) really get to people. (...) people (...) [who] downloaded the app and see that there is nothing around them (...) deleted it. (Madleine, former TGTG manager)

Hence, acquiring a number of restaurants in the right locations is essential for TGTG's success. Sales and account managers are required to acquire and retain business partners.

Furthermore, the app has to be easy and function properly in order to please customers and business partners, the restaurants selling the surplus food. Christian managed a café

and had partnered with TGTG. He especially liked that *'the app itself works nice on the phone'*. The advertised number of leftover portions could be adjusted and orders cancelled easily while no additional work was created for restaurant staff. *'It works pretty good'*, was also Hector's feedback, a Wefood customer who worked at a café that collaborated with TGTG. He reported that customers *'are surprised how easy it is, actually'*. However, some customers struggled to install the app. Hans said that *'it's not working on (...) [his] phone'*, while Maya *'couldn't get it on her phone, because it's an Argentinian card'*. That the app works well is essential for acquisition and retention of customers and business partners. Therefore, IT personnel are needed to develop and maintain the app.

To develop a successful business model, to determine promising locations and to acquire business partners requires competent staff. Also, to promote and maintain the app and to do the back-office work requires a team skilled in IT, marketing, sales and management. Consequently, funding is essential for TGTG's business development. The executive team of TGTG was very successful in acquiring funding and could secure funding from several investors from the start of operations (Nordic 2016; Crunchbase Inc. 2019; PitchBook 2019). The funding was invested in business development, which is why TGTG reported a loss at the end of the financial year 2017 of £2,500,000 (Deloitte 2018a; 2018b). In early 2019, TGTG succeeded in acquiring further funding of £5,000,000 that enabled further growth and development (Crunchbase Inc. 2019; PitchBook 2019).

Because TGTG was able to obtain funding, professional staff could be hired to grow and develop the business. Without that funding, business development would have progressed much slower, as the revenue per sold meal is just £1. Volunteers would have needed to be recruited and trained to acquire restaurants, create a marketing strategy and maintain the app. It is questionable whether this alternative would have succeeded. Furthermore, word of mouth promotion of the app could have suffered from potential negative consumer experiences due to limited participating restaurants. Hence, also TGTG is developing successfully because of its access to funding. The model below (Figure 5.11) illustrates the impact of funding on TGTG's business model. Capital is needed to invest in staff and facilities so that, on the one hand, business partners offering surplus food (TGTG partners) can be acquired, and on the other hand the app to acquire customers can be designed, maintained and promoted. Thus, sales can be generated and profits can be reinvested into further business development. Also this model (like Figure 5.10) applies to many (technology-enabled) businesses, while the difference lies in the context of surplus food. Acquiring suppliers and customers is more challenging than in the case of regular products while profit margins are low (see 5.1).

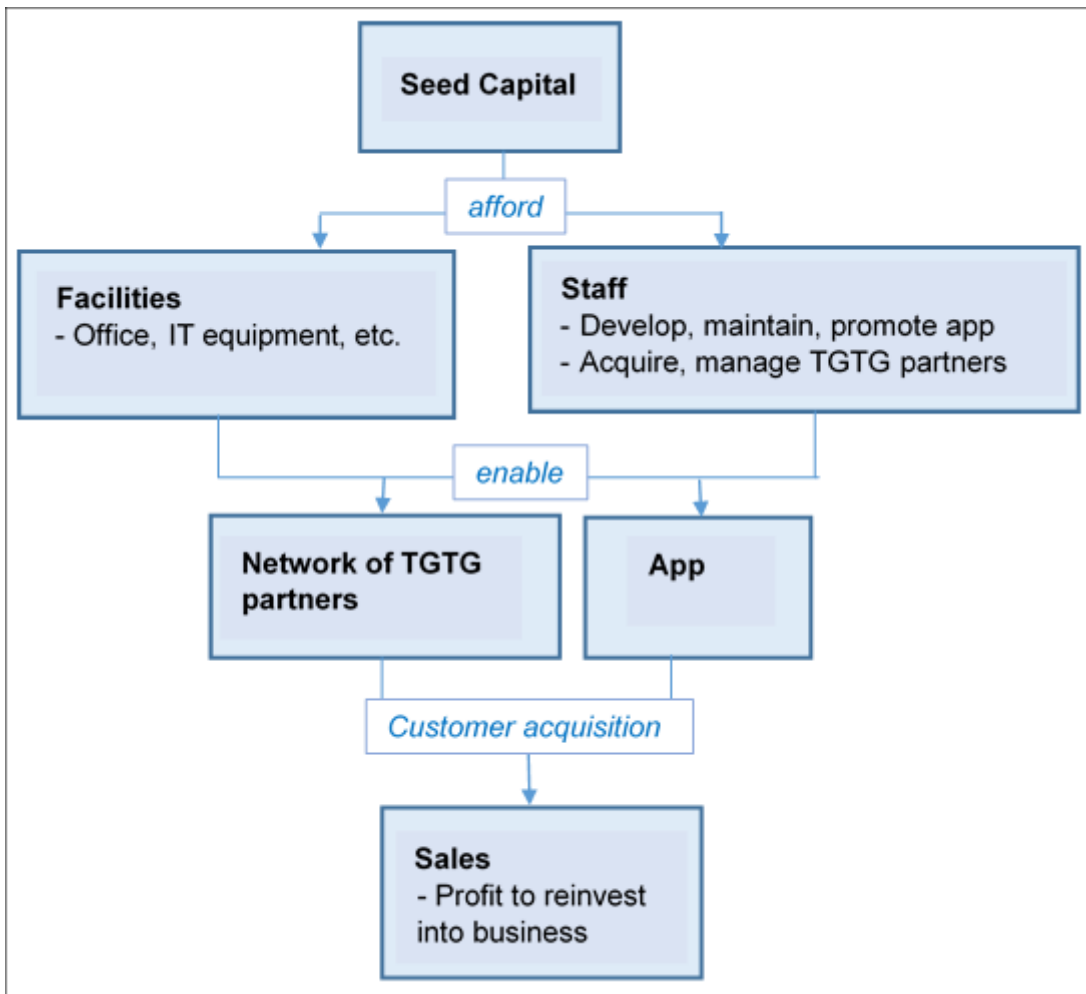


Figure 5.11: The impact of funding on TGTG's business model (author)

5.5.4 Summary of Findings Section 5.5

The case businesses face additional challenges, as acquiring and selling surplus food are difficult tasks while the profitability is low. To provide an attractive product range and a pleasant atmosphere, skilled staff and facilities are needed. In the case of the surplus supermarkets, suppliers need to be acquired, products transported, stored and sold and a store has to be decorated and run. In the case of the app TGTG, business partners have to be acquired and managed while the app needs to be developed, maintained and promoted. The surplus supermarkets need more facilities than TGTG, as the app uses the facilities of its business partners for the sale of surplus food. The surplus supermarkets can succeed with a relatively small skilled management team, as most operations can be run by volunteers. TGTG, in turn, requires skilled labour for its business operations, whereas the easier task of serving customers is done by the business partners, the participating restaurants.

Seed capital enabled Wefood as well as TGTG to develop successfully, while Niftie's had to cease operations because of the lack of funding. Funding is needed to afford the necessary infrastructure and staff to create a positive customer experience, which is needed to acquire customers and to thus generate profits. Profits enable further business development and allow the case businesses to become long-term solutions to food waste. The following section brings the findings together and explains how businesses selling surplus food can be adopted and reduce food waste.

5.6 Framework: Factors affecting the sale of surplus food

The aim of this research was to understand how businesses selling surplus food commercially can be adopted and reduce food waste in Denmark and the UK. Four research questions (RQs) were formed, inquiring into the drivers and barriers for consumer engagement with the case businesses (RQ 1), the challenges (RQ2) and successes (RQ3) in selling surplus food and how those businesses can become long-term solutions to food waste (RQ4). The findings presented in this chapter (Sections 5.2, 5.3, 5.4, 5.5) answered those RQs. Those findings are represented by the four themes that derived from the thematic analysis of the primary data.

Four themes derived from data analysis, answering the research questions:

1. Social circumstances determine if consumers are likely to engage with the case businesses or not (see 5.2 for more detail).
2. Consumers become customers if the product range satisfies them and they experience positive emotions using the case business (5.3).
3. Surplus food is sold and consumed (5.4).
4. To become long-term solutions to food waste, the case businesses need access to funding (5.5).

Theme 1 and 2 both provide the answer to RQs 1 and 2, theme 2 and 4 answer RQ 2 and 4, while theme 3 resolves RQ 3 (see Table 5.2).

Research Questions	1) Why do consumers choose to engage with the case businesses or not?	2) What challenges are the case businesses facing in selling surplus food?	3) What successes are the case businesses achieving?	4) How can the case businesses become long-term solutions to food waste?
Emerging themes	1. Social circumstances determine if consumers are likely to engage with the case businesses or not.			
	2. Consumers become customers if the product range satisfies them and they experience positive emotions using the case business.			2. Consumers become customers if the product range satisfies them and they experience positive emotions using the case business.
			3. Surplus food is sold and consumed.	
		4. To become long-term solutions to food waste, the case businesses need access to funding.		4. To become long-term solutions to food waste, the case businesses need access to funding.

Table 5.2: Research questions and themes (author)

To understand how the findings answer the overarching research question, they need to be considered in relation to each other. Figure 5.12 illustrates how businesses selling surplus food commercially can be adopted and reduce food waste by providing an overview of the factors influencing the sale of surplus food. Hereby, the arrangement of the themes (indicated by numbers in stars), which represent the results regarding the research objectives, serve as explanation.

The upper part of the figure explains the factors influencing consumers to adopt businesses selling surplus food (consumer perspective). Consumers' shopping behaviour is affected by their perceptions, which in turn are influenced by their attitudes, self-identities, lifestyles, the role of price in their purchasing decisions and social networks. Theme 1 indicates that those factors, which are influenced by consumers' social circumstances, affect consumers' engagement with the case businesses. If consumers' attitudes, lifestyles, self-identities, the role of price in their purchasing decisions and social networks align with the idea of buying surplus food, they might engage with the case businesses and experience their offer. As the decision to engage with those businesses is driven by consumers' perceptions, which are influenced by further factors, this decision happens rather subconsciously than rationally. If consumers engage with the case businesses and perceive the product range, atmosphere and pricing as attractive, they are likely to buy surplus food from the businesses (Theme 2). Then, surplus food is sold and can be consumed, indicated by Theme 3. If surplus food is sold and consumed, food waste is reduced.

The middle part of Figure 5.12 explains that the businesses require funding to acquire customers and sell surplus food and to thus become long-term solutions to food waste (Theme 4) (business perspective). To create an attractive product range, atmosphere and pricing, the businesses need skilled staff and facilities, which can be afforded if funding is available. These factors influence each other, as skilled staff can acquire funding while funding affects whether skilled staff can be employed and hence if products can be acquired and priced efficiently and if a pleasant atmosphere can be created. If the personnel and facilities to create an attractive product range and atmosphere and a reasonable pricing strategy are available, customers can be acquired and profits from sales can be generated, which can be invested into staff and facilities, for instance.

The bottom part of the figure illustrates how the four themes answer the research question. Whether businesses selling surplus food commercially are adopted by consumers and whether food waste is reduced depends on the factors reflected in the four themes.

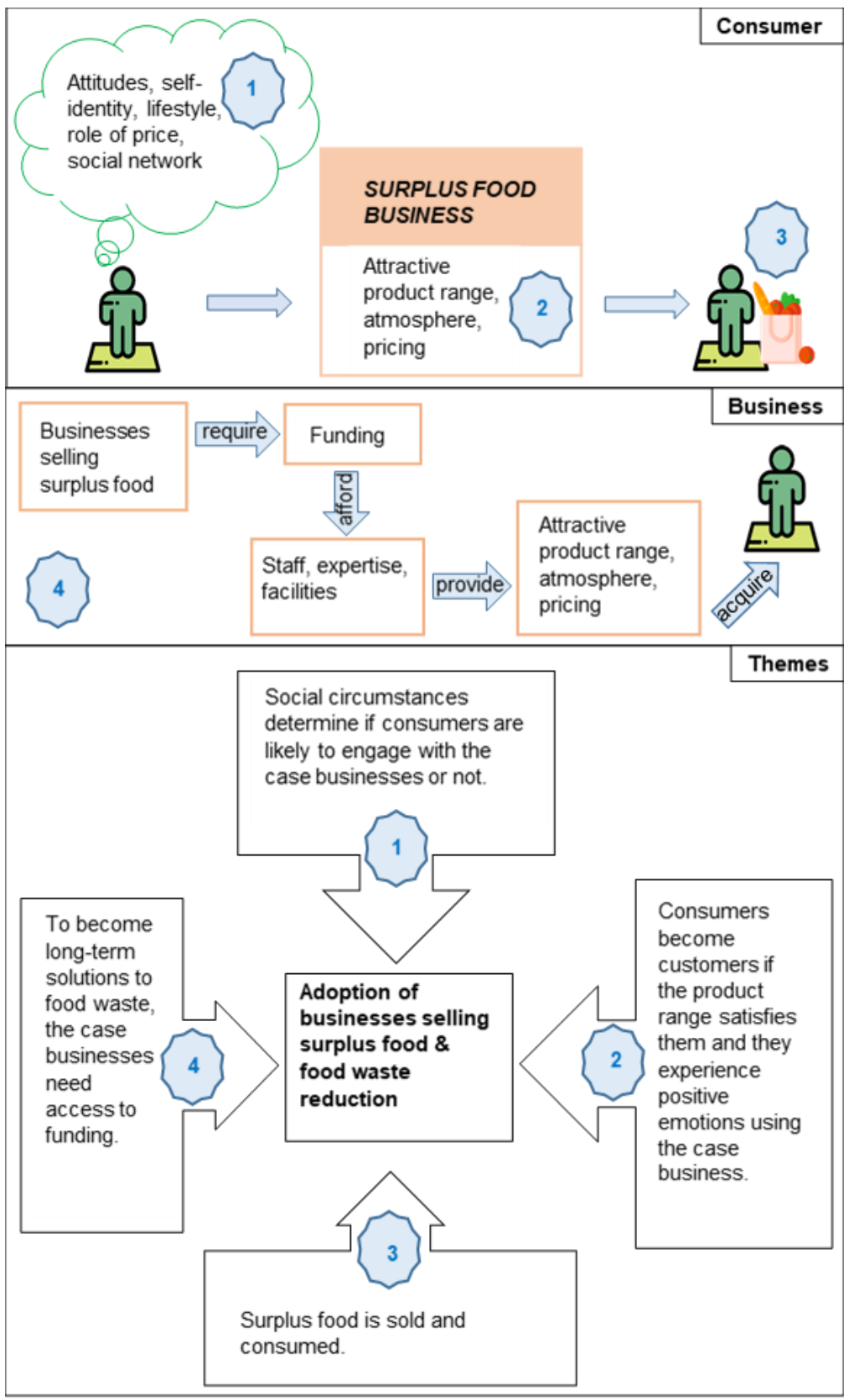


Figure 5.12: Factors affecting the sale of surplus food and food waste reduction from different perspectives (author¹⁰)

¹⁰ Icons made by Freepik from www.flaticon.com

5.7 Summary

This chapter presented the findings in regard to the research questions forming the foundation of this research. Section 5.2 explored how consumers' engagement with the case businesses depends on their social circumstances. Their upbringing and social environment shape consumers' attitudes, lifestyles, self-identities and the role price plays in their purchasing decisions and thus their perception and shopping behaviour. Their social network influences if and what consumers communicate about the case businesses and therefore affects if and what consumers know about the case businesses, which affects engagement with those businesses. The factors influencing consumer engagement with the case businesses are individual; national differences between Denmark and the UK were not found to be significant.

Section 5.3 outlined the challenges the case businesses face in providing a positive consumer experience, which is necessary for customer acquisition. Consumers who decide to engage with the case business are likely to become customers if they have a positive experience, while consumers who have a negative experience are very unlikely to become customers. The product range on offer and the atmosphere of the store affect consumers' perceptions and hence their experience. Consumers compare the case businesses and their offer to the status quo, the supermarkets and restaurants they are used to. Hence, to meet consumers' expectations, the case businesses should offer a varied selection of products and present those in an attractive way (as known from regular retail layouts and restaurants) while still providing the special products and atmosphere consumers enjoy. Consumers' experience also influences if and what they communicate to others about the business and thus sways further customer acquisition.

The successes of the case businesses in selling the surplus food were demonstrated in Section 5.4. It was found that the case businesses manage to sell most of the surplus food they acquire. However, in a similar way to regular retailers, the case businesses also struggle to find the right balance between not disappointing customers and not creating food waste. Customers reported that they consume the purchased surplus food while the purchased surplus food substituted the consumption of fresh food. Hence, food waste is reduced and even the consumption of new resources is reduced to some extent.

Section 5.5 explained that funding is essential for the case businesses to become long-term solutions to food waste. The case businesses face additional challenges regarding

supply and demand because they are selling surplus food, causing an altered need for funding. To be profitable, customers need to be acquired so that sales can be generated. To acquire customers, it is necessary for the case businesses to provide a positive consumer experience, which requires investment in staff and facilities. Skilled employees are needed to develop a successful business model, to acquire funding and suppliers and to manage the business. Necessary facilities include office space for TGTG and a store, storage space and vans for the surplus supermarkets. Hence, access to funding is essential to enable business development. The cases TGTG and Wefood illustrate successful growth based on access to funding, whereas Niftie's had to cease operations due to a lack of funding. Wefood and TGTG can become long-term solutions to food waste as opposed to Niftie's.

A framework illustrating how the findings relate to each other and together answer the overarching research question, i.e. how businesses selling surplus food can be adopted and reduce food waste in Denmark and the UK, was presented in Section 5.6. Social circumstances affect consumers' engagement with the case businesses while the experience of consumers who interact with the case businesses determines if they become customers. This experience is shaped by the product range and atmosphere the case businesses offer. The provision of a positive experience requires funding so that necessary investments into staff and facilities can be realised. If consumers have a positive experience, surplus food can be sold and consumed. Thus, profits for business development are generated, and food waste is reduced. The following chapter discusses the findings in relation to existing knowledge.

**Chapter 6: Conceptualising the sale of surplus
food as a means to reduce food waste and to
support degrowth**

6.1 Introduction

This chapter addresses the overarching research question of how businesses selling surplus food can be adopted and reduce food waste in Denmark and the UK and hence demonstrates how the research objectives were met. The findings are discussed in relation to the existing literature while contributions to theory and practice are presented. As scientific insight informs practice, theoretical and practical contributions are related to each other. Therefore, theoretical and practical contributions are presented together in this chapter.

This study is the first investigating two different business models that sell surplus food commercially to consumers. Insight into the factors influencing the adoption of the businesses and their success to actually reduce food waste was gained. One contribution of this research is formed by the development of a conceptual framework (Figure 6.1), a new theory (surplus food sale theory) that can be applied to understand the factors affecting adoption of businesses selling surplus food (and thus food waste reduction). A second important contribution is represented by the finding that the case businesses reduce food waste and support degrowth to some extent. Another contribution is formed by the insight that surplus food has a market value and should therefore not be perceived and treated as waste. Contributions to practice include recommendations for policymakers, retailers and businesses selling surplus food commercially to increase the sale of surplus food and hence the reduction of food waste and resource consumption. Furthermore, the research contributes to existing literature by showing how it supports or contradicts the results of this study. In addition, the theory of diffusion of innovation (TODOI) was used for the first time in food waste research.

First, an overview of the TODOI and an explanation of how it sheds light on the sale of surplus food are presented. Thereafter, the development of a new theory, which explains how businesses selling surplus food commercially can be adopted and reduce food waste in Denmark and the UK, is outlined. A conceptual framework (Figure 6.1) illustrates this theory. Section 6.3 provides the answer to the first part of the research question by explaining how businesses selling surplus food can be adopted. The factors affecting the adoption of the case businesses in general and the two different business models, the surplus supermarkets Wefood and Niftie's and the app Too Good To Go (TGTG), in particular, are discussed. Section 6.4 addresses the second part of the overall research question, outlining how food waste can be reduced. This section elaborates how the case

businesses reduced food waste and supported degrowth. Moreover, it suggests that regular retailers and food service businesses should sell their surplus food (directly or indirectly). The chapter discusses existing knowledge and how it applies to the commercial sale of surplus food. The research question is answered through describing the contributions to theory and practice. Hereby, practical contributions are presented together with the theoretical contributions they refer to. A summary concludes this chapter.

6.2 Development of the surplus food sale theory

In order to conceptualise the under-investigated sale of surplus food and thus how businesses selling surplus food commercially can be adopted by consumers, this study turns to the literature on innovation diffusion. According to this literature, the acceptance or rejection of an innovation is influenced by the characteristics of the innovation, the decision-makers and the context (Greenhalgh et al. 2007; Goldsmith 2012). The perceived relative advantage of an innovation over the status quo drives the adoption of the innovation (Rogers 2003). Potential adopters can evaluate this advantage best if the innovation can be easily understood, observed and tried (Rogers 2003; Sanson-Fisher 2004). To further reduce uncertainty, potential adopters seek information such as the experience of others with the innovation (Rogers 2003; Goldsmith 2012). The experiences users share are subjective messages influenced by their personal attitudes and self-identities (Goldsmith 2012). These messages are often communicated via word of mouth within networks of like-minded people (Rogers 2003; Goldsmith 2012). Therefore, the diffusion process is influenced by the communication structure, which depends on the relationships within a social network (Robertson 1967; Rogers 2003). Adoption is more likely to happen if the innovation is compatible with the needs, beliefs and experiences of the potential adopters in the social network (Rogers 2003). Hence, understanding the social network of adopters and potential adopters helps to understand the diffusion process (Rogers 2003).

The TODOI was a useful tool to understand the sale of surplus food, as it helped identify the factors that influence the adoption of innovations, such as businesses selling surplus food commercially. Primarily, the TODOI has been used to understand the diffusion of a new technology or product, but it has also been applied to investigate the spread of environmental behaviours (see 2.5.1) (Fell et al. 2009; Sriwannawit and Sandström 2014). In food waste research, however, the TODOI has not been used before. The TODOI suggested a holistic investigation including the businesses, consumers and the context they are embedded in. Consequently, the focus was not only on the challenges the businesses face or on the motivations and barriers consumers experience but also on the social networks both operate in and on the relationship between all these factors which influence each other. Moreover, the focus of the TODOI on contextual factors and different perspectives suited the application of phenomenology.

Also, phenomenology focuses on individual perceptions and the contextual factors influencing those, and acknowledges those perceptions as valid realities. With the

application of perceptual phenomenology, the factors that influence adoption and the circumstances shaping those factors were understood deeply from the inside-perspective of both the innovation and the potential adopters. Enhancing the TODOI by combining it with perceptual phenomenology provided insight into the factors affecting the diffusion of businesses selling surplus food commercially via focusing on the individual perceptions of consumers and business representatives. Applying perceptual phenomenology added a deeper level of investigation, as not only the factors suggested by the TODOI (innovation, potential adopters, context) were examined, but also the different perceptions of those factors and the circumstances influencing those perceptions. Thus, the study identified the challenges and motivations that the consumers and the businesses experience with this innovation driving sustainability. The perceptions of consumers and business representatives provided the insights needed to truly understand how businesses selling surplus food can be adopted and reduce food waste.

Consumers' perceptions of surplus food and of the businesses selling the surplus food as well as consumers' attitudes, lifestyles, self-identities and their social network influence whether or not consumers buy surplus food. This is in line with Rogers (2003) who argues that an innovation needs to be compatible with the values of the social system in order to be accepted by the majority. Therefore, understanding the factors and values that influence consumers' perceptions and behaviours towards businesses selling surplus food commercially is essential to comprehend how the sale of surplus food can be enhanced and adoption increased. Moreover, Carrigan (2017) has noted a gap in research regarding studies that investigate the challenges consumers experience with ethical consumption initiatives. 'Ethical consumption activity includes positive choice behaviours, such as the purchase of (...) environmentally friendly products (...)' (Szmigin, Carrigan and McEachern 2009: 224). This research provides insight into those challenges by analysing the factors that motivated consumers to buy surplus food (an environmentally friendly product) from the case businesses or hindered them from doing so. The TODOI inspired the research approach while the empirical findings indicate which attitudes, self-identities and lifestyles, hence which of consumers' social circumstances benefit the sale of surplus food (see 5.2.2 - 5.2.6 for more detail). Furthermore, amongst the aspects shaping consumers' experience with the case businesses, this study identified product range and atmosphere as important (5.3).

This study also reveals that experiences are shared with like-minded people, such as friends, family members, colleagues and housemates (5.2.6), according to the assumption of the TODOI (Rogers 1983). The social mission of the case businesses helps to create a

positive customer relationship, which also increases the likelihood that consumers will promote the business (Cox 2012). However, the diffusion is limited by the social stigma which some consumers and their social network associate with surplus food. Surplus food can be perceived as being food of lower quality that only people in need buy, as they cannot afford 'better' food. To differentiate from those people, some consumers either choose not to use the case businesses or do not communicate that they purchased surplus food, affecting the diffusion negatively. In a similar way, the stigma of poverty and related feelings of shame causes people in need to dread using foodbanks (Garthwaite 2016).

While the TODOI explains the process of the diffusion of innovations and the factors influencing this process in general, it is not sufficiently applicable to answer the research question ('How can businesses selling surplus food commercially be adopted and reduce food waste in Denmark and the UK?'). Consequently a new theory needed to be developed. This new theory, the surplus food sale theory (SFST), is illustrated by the conceptual framework (Figure 6.1). The SFST was inspired by the understanding gained from applying the TODOI and perceptual phenomenology and explains how businesses selling surplus food commercially can be adopted and reduce food waste in Denmark and the UK. The TODOI focusses on the process of diffusion regarding innovations in general. In contrast, the SFST concentrates on the factors influencing the adoption of a certain innovation, namely businesses selling surplus food commercially to consumers, and on the consequences of adoption, i.e. food waste reduction.

The development of this new theory constitutes the main theoretical contribution of this research. In the following, the conceptual framework (Figure 6.1) is presented and explained. The conceptual framework contains the relevant factors that explain the adoption of businesses selling surplus food and food waste reduction (the businesses, consumers, external and internal influencers, outcomes). Their causal relation is illustrated by the arrows, while the underlying logic and the contextual factors explaining and limiting the theory are described in Sections 6.3 and 6.4. Hence, the requirements for a theory, as outlined by Whetten (1989), have been met. Therefore, the development of the SFST represents a strong theoretical contribution to food waste reduction research.

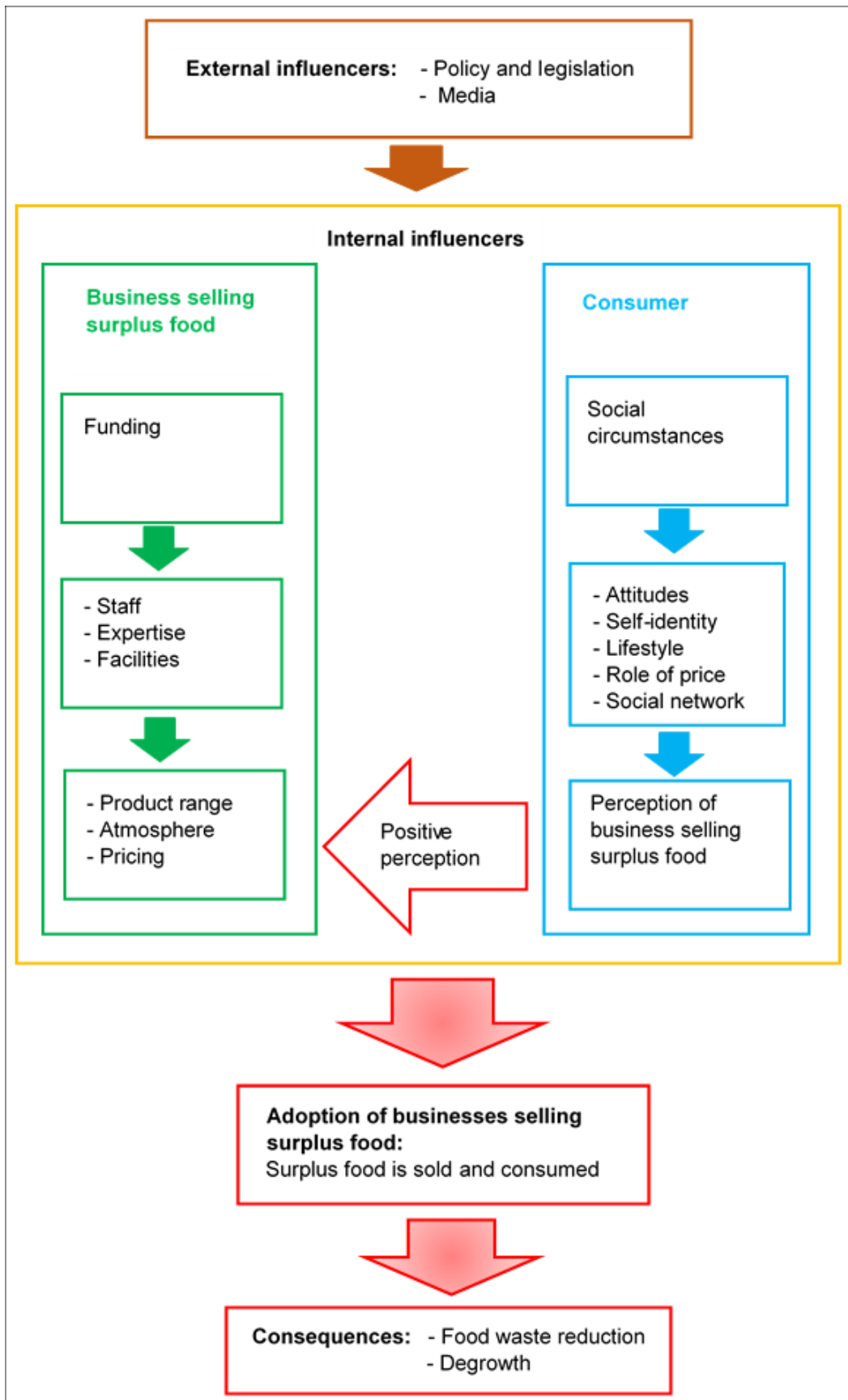


Figure 6.1: Conceptual framework: Adoption of businesses selling surplus food (surplus food sale theory) (author)

The conceptual framework presented in Figure 6.1 is based upon the findings of this study (Chapter 5). Figure 6.1 illustrates the external (brown square) and internal (yellow square) factors influencing the adoption of businesses selling surplus food. Internal factors are related to the consumers (blue squares) and the businesses selling surplus food (green squares). When consumers buy surplus food from the businesses, food waste is reduced and degrowth supported to some extent (red squares).

As outlined in Chapter five, consumers' perceptions of the case businesses are influenced by their attitudes, self-identities, lifestyles, social networks and the role price plays in their purchasing decisions, which in turn are influenced by consumers' social circumstances. Consumers' perceptions are also influenced by the appearance of the businesses, namely their product range, pricing and atmosphere. To provide an attractive product range and atmosphere and efficient pricing, the businesses need funding to pay for experienced staff and facilities. If consumers' attitudes, lifestyles, self-identities, social networks and the role price plays in their purchasing decisions align with the idea of buying surplus food from the case businesses, they are likely to engage with the businesses. For instance, many students shopped at Wefood or used TGTG because it suited their flexible lifestyle and their low income. In contrast, consumers who preferred to buy organic food, did not eat food that has reached its 'best before' date or only went shopping once a week at a store where they get everything they need did not engage with the surplus businesses. If the product range, atmosphere and pricing appeal to the consumers, they are likely to buy surplus food and to become customers (adoption). Thus, Wefood's sales rose considerably when they updated their layout and increased their product range, while Niftie's could not acquire sufficient customers and had to close its business because it could not afford the necessary investments to improve layout and product range. When surplus food is sold, consumed and substitutes purchases of regular food, food waste is reduced and degrowth supported.

Moreover, media, as an external factor, influences adoption, as it informs consumers about the businesses and shapes the perceptions of consumers, potential suppliers and investors, for instance, with the message that is communicated about the businesses or surplus food and with the generally communicated values. When the surplus supermarkets were launched, they were mentioned positively by mass media and thus attracted consumers. Also, policies and legislation act as external factors affecting diffusion. Policies and legislation influence the businesses' acquisition of supply and thus the product range (6.3.2, 6.3.3). If retailers and restaurants were required to donate their surplus food, acquisition of surplus food would no longer be as challenging as it was for the case

businesses at the time of this research. In addition, these factors determine the costs and support the businesses are experiencing and hence affect the available funding. Niftie's, for example, experienced a raise in business rates aggravating its precarious financial situation. Consumer perception of surplus food is affected by legislation and policies as well, as those determine expiry dates on products, for instance. The quality-related 'best before' date often is misinterpreted by many consumers believing food cannot be consumed safely after its 'best before' date. These consumers perceive surplus food, which often has reached its 'best before' date, as unsafe and are unlikely to buy surplus food.

It has to be considered that this framework was developed based on insights regarding Danish and British commercial businesses aiming to create a profit by selling surplus food to consumers who choose to shop there for various reasons. The commercial sale of surplus food represented an innovation, and the businesses were start-ups at an early stage of their development. Nevertheless, the framework is transferable to other businesses, such as regular retailers and restaurants, restaurants selling meals made of surplus food or social supermarkets, for example. However, different factors in the framework might be more or less relevant, depending on the particular business it is applied to.

The following two examples (regular retailers and restaurants, social supermarkets) illustrate how the framework might need to be adapted to be applied to different cases. For regular retailers and restaurants, consumers' social network might not be as important as lifestyle, price and self-identity, as regular food is not as much associated with a stigma as surplus food. Furthermore, food waste reduction and degrowth are not commonly associated with the sale of regular food. Applying the framework to social supermarkets requires several adaptations. While also the diffusion of social supermarkets is influenced by access to funding, supplies, facilities and staff (Bromley, Rogers, and Bajzelj 2016; Saxena and Tornaghi 2018), financial reasons are likely to be the main motivation for consumer engagement with those organisations that provide food to people in need. The other factors (e.g. attitudes, self-identity, lifestyle, social network) will influence the decision to buy surplus food from those organisations as well but presumably to a lesser extent. Hence, product range and atmosphere of social supermarkets might not be as relevant for customer acquisition, albeit still relevant. Also, a strategy pricing the surplus food as expensive as possible but as cheap as necessary in order to generate maximal profits, is not necessary for charitable organisations selling surplus food. These organisations are based on non-profit business models, and their main intention is to provide cheap food to people in need (Schneider et al. 2015), not to create a profit. Being considered as charity

could facilitate donations of surplus food from retailers. Consequently, staff experienced in retail might be less essential for social supermarkets.

These examples suggest that for the framework to be adapted to different cases, the different factors affecting adoption have to be investigated for the case the framework is applied to. The SFST relates to businesses selling surplus food commercially to consumers in Denmark and the UK. However, the SFST can be applied to related contexts. The framework highlights the factors that have to be investigated in relation to the chosen context in order to adapt the SFST to this context.

This section outlined how the TODOI applied together with phenomenology inspired the development of a new theory. The conceptual framework indicates the factors that influence the adoption of businesses selling surplus food and food waste reduction. The next section explains the factors that affect the adoption of all case businesses in more detail.

6.3 Understanding the adoption or rejection of businesses selling surplus food commercially

6.3.1 Factors affecting the adoption of the case businesses

As outlined in Section 2.3, culture, social norms, identity and lifestyle influence shopping behaviour and food consumption (Miller et al. 1998; Dant 1999; Southerton 2003; Evans 2011; Southerton, Díaz-Méndez, and Warde 2011; Evans and Miele 2012; Carrigan 2017). Also, consumers' adoption of an innovation is influenced by their experiences, attitudes and self-identities (Rogers 2003; Goldsmith 2012). Consumers who doubt that an innovation will satisfy them, who perceive it negatively, will not adopt it (Goldsmith 2012). The findings of this study support the literature confirming the strong influence of factors such as lifestyle, attitudes and self-identity on consumer perception and shopping behaviour. The influence of these internal factors on consumer perception is outlined by the SFST. Moreover, the results cohere with scholars arguing that the attitude-behaviour gap exists because consumers are influenced by their social circumstances rather than being independent rational actors (Jackson 2005; Caruana, Carrington, and Chatzidakis 2016). Consumers with environmental concerns who choose not to use the case businesses base their decision on their lifestyle, self-identity and attitudes.

The appeal of the case businesses' offer depends on consumers' expectations, which are framed by the status quo, thus by regular supermarkets and restaurants. Consumers compare the product range, layout and service of businesses selling surplus food with the status quo drawn upon previous experience. Positive perceptions of the status quo can harm adoption of an innovation (Goldsmith 2012). If consumers do not perceive an advantage in adopting the innovation because they are very satisfied with the status quo, they are less likely to adopt the innovation. This could be confirmed considering that consumers (who did not use the case businesses) spoke positively about their regular shop (e.g. Theo, Hanna, Esther), while some customers (of the case businesses) perceived regular shopping as boring (e.g. Gemma, Clara). According to the TODOI (Rogers 2003), the practice of buying surplus food from the case businesses needs to provide an advantage over purchasing food from regular retailers to be adopted by consumers. Customers perceive this advantage in the cheap prices, the products and the shopping experience. Trust about food safety is not a major issue preventing consumers from using the case businesses. This contrasts with the sharing of surplus food among individuals

where trust forms the main barrier (Lazell 2016). The fact that consumers associate the case businesses with regular retail and food service businesses, might contribute to their trust in the safety of the offered surplus food.

The success factors for regular retailers (product offer, price, layout and location) (Kati 2010) were found to also apply to the sale of surplus food. However, selling surplus food bears additional challenges in acquiring supply and customers while generating low profit margins, causing an altered need for funding (5.5.1). The case businesses are social enterprises, as they address social and environmental problems with their operations while revenues benefit the social mission (Medina Munro and Belanger 2017). Doherty, Haugh and Lyon (2014) argue that the additional pursuit of a social mission can reduce the profitability of social enterprises, increasing the need for external funding. For the case businesses this is true: Because of the challenges related to selling surplus food, access to funding is essential if they are to be able to afford the facilities and staff required to create the above mentioned success factors and to thus achieve financial viability enabling successful business development, innovation and further diffusion. The SFST explains this correlation between access to funding and adoption. The findings cohere with the literature suggesting that financial viability and innovation are key success factors for social enterprises (Medina Munro and Belanger 2017). Due to the lack of funding, Niftie's had to cease operations while Wefood and TGTG had access to funding and thus could innovate and grow.

Price is a decisive purchasing factor (European Commission 2015) and also motivated most of the customers interviewed during this study to purchase surplus food from the case businesses. Therefore, the role of price in purchasing decisions is another internal factor the SFST considers to influence consumer perception of businesses selling surplus food. Hence, this competitive advantage (the cheap price of surplus food) over regular retailers (that sell regular food and offer a broad product range) should be highlighted by a marketing strategy that targets consumers at the lower end of the economic scale, such as students, young families, unemployed or retired people. Promoting the surplus businesses to retired people can further benefit customer acquisition, as their experience of the Second World War (Sina) and the post-war era causes them to value (surplus) food and to waste less (Watson and Meah 2013). Being able to purchase surplus food cheaply enables consumers on a tight budget to access a greater range of products than they could afford usually. However, a number of issues remain beyond the scope of this study, such as the potential negative long-term effects on consumer health. First, consumers might purchase more unhealthy food than they would without access to cheap surplus food, which entails healthy

as well as less healthy products. Second, there is the possibility that consumers choose to spend the money they save by buying cheap surplus food on unsustainable goods or services. With price as a major driver to buy surplus food from the case businesses, targeting consumers with a lower income for customer acquisition can create a significant economic, environmental and social impact, as profits from the sale of surplus food can be generated while food waste is reduced and access to cheap food is provided.

The fact that price is a major driver for buying surplus food coheres with research indicating that economic concerns, as opposed to environmental or social reasons, are the main motivation for consumers to reduce food waste (Stancu, Haugaard, and Lähteenmäki 2016; Visschers, Wickli, and Siegrist 2016). Nevertheless, even though environmental concerns were not found to be a major driver motivating the purchase of surplus food, customers enjoyed the idea that they created a positive impact by buying surplus food. While purchasing environmentally friendly products often means paying more and creates a barrier to purchase (Young et al. 2010; Kneafsey et al. 2013; McDonald et al. 2015), the surplus businesses enable a 'green' shopping behaviour with cost savings. According to Kneafsey et al. (2013), a feeling of empowerment has the potential to trigger further environmental actions. Empowering consumers to make purchasing decisions that benefit the environment is crucial to achieving sustainable development (Kneafsey et al. 2013).

Some scholars argue that environmental concerns regarding food waste are less important because food waste is often not perceived to be a cause of environmental harm (Stancu, Haugaard, and Lähteenmäki 2016; Visschers, Wickli, and Siegrist 2016). This does not apply to the participants in this study who were aware that food waste is an environmental problem. This difference in consumer perception could be explained by the recent attention the issue food waste has received in media.

The findings partially confirm and contradict the assumption that national cultural values influence sustainability (Parboteeah, Addae, and Cullen 2012). Parboteeah, Addae and Cullen (2012) argue that, for instance, collectivist societies are more likely to pursue sustainability goals, as greater importance is attached to the benefit to society at large rather than to the individual. The fact that sustainability is more advanced and important in Denmark than in the more individualist UK, with Denmark coming first place in an international sustainability ranking, confirms this statement (Hofstede Insights 2019; RobecoSAM 2019). However, these national cultural values did not influence the (sustainable) shopping practices of participants of this study as much as other factors, such as price and convenience, for example. Interestingly, participants of this study are

motivated for similar reasons as Canadian dumpster divers to get surplus food, namely for monetary and ideological reasons and because of the 'shopping' experience (Vinegar, Parker, and McCourt 2016). Consequently, the findings of this research partially contradict Parboteeah, Addae and Cullen's (2012) statement.

The SFST describes how external factors influence the adoption of businesses selling surplus food commercially. Thøgersen (2010) states that national structural and macro factors related to politics and the economy, including infrastructure, regulations, food culture and income, influence sustainable consumption. Considering that price and convenience are decisive purchasing factors for surplus food, this study confirms that structural and macro factors, such as income and infrastructure, affect sustainable consumption. Regarding the sale of surplus food, especially regulations and food culture, which is communicated via media, are external factors determining the businesses' opportunities and consumers' attitudes, as explained in the following section (6.3.2). The SFST describes the impact of these external influencers, that is 'media' and 'policy and legislation', on the adoption of businesses selling surplus food.

The TODOI also suggests that opinion leaders and social role models can advance the diffusion of an innovation via their influential role (Rogers 2003; Goldsmith 2012). The ban on free plastic bags in the UK is a successful example of the impact catalytic individuals can have (Carrigan, Moraes, and Leek 2011). Peer communication can influence consumers' purchasing decisions by providing accessible information (Wang, Yu, and Wei 2012). Social media has millions of users, supports the connection and communication among peers and thus affects consumer behaviour (Wang, Yu, and Wei 2012) - in particular via Instagram influencers who post attractive pictures with brief information to promote certain products (Nandagiri and Philip 2018). The case businesses already use Facebook to promote their offer, and the surplus supermarkets, in particular, succeed in acquiring customers via social media. Most participants learned and talked about the case businesses via word of mouth. However, the diffusion is complicated by the social stigma related to surplus food. Therefore, the case businesses could benefit from including Instagram influencers into their marketing strategy to promote surplus food further. The attractive presentation of surplus food by a social role model can help to change the perception of surplus food from a lower quality product to a desired item and thus overcome the stigmas related to surplus food. In addition, many more consumers can be reached, considering that 37% of the Danish and 42% of the UK's population use Instagram (Napoleon sp. z o.o 2019; Battisby 2019).

This section presented the factors influencing the adoption of the case businesses selling surplus food in general. Consumers' social circumstances affect their shopping behaviour while buying surplus food from the case businesses needs to provide an advantage over using regular retailers and restaurants to cause adoption. The factors determining the success of regular retailers and of social enterprises are also valid for the case businesses. As such, price is important for customer acquisition and should be incorporated into the marketing strategy to increase adoption. While national cultural values do not influence individual shopping behaviour considerably, structural and macro factors, such as income, regulations and food culture, affect adoption of the case businesses. To further increase adoption, social media, especially Instagram influencers, could be introduced to overcome stigmas related to surplus food. The factors influencing adoption of businesses selling surplus food are illustrated in the conceptual framework (Figure 6.1). The following sections explain the factors influencing the adoption of the surplus supermarkets Wefood and Niftie's (see 6.3.2) and TGTG (see 6.3.3), in particular.

6.3.2 Factors affecting the adoption of the surplus supermarkets – Wefood and Niftie's

Acquiring many customers is important for the case businesses to be profitable and thus sustainable, especially as profit margins for surplus food are very low. According to Kati (2010), the biggest reason for consumers to enter a retail store is the product offer, and therefore a broader range increases sales and profitability. For the case businesses, this reasoning could be confirmed in the current study. Moreover, consumers compare the surplus supermarkets with regular retailers they know well and have certain expectations regarding the product range and layout of the surplus supermarkets, which influence their experience (see 5.3.4 for more detail). If consumers' expectations are not met, rejection of the innovation as well as negative communication are probable, affecting the diffusion of the surplus supermarkets adversely.

The limited product range of the surplus supermarkets reduces the likelihood of consumers and customers shopping there, as they prefer to buy their groceries at a store providing more of the items they needed. Evans (2014) found that shopping is a routinized activity and that due to time constraints based on social obligations many consumers only shop once per week at a store providing all of the products they needed. This finding was

supported by the current study. Consumers who preferred to go shopping only once per week did not adopt the behaviour of purchasing food from the surplus supermarkets. This coheres with Szmigin, Carrigan and McEachern (2009) who found that inconvenience can be a barrier to ethical consumption.

Convenience affects food consumption patterns (Warde 1999; Jackson and Viehoff 2016; Southerton 2003) and was found to be an important purchasing factor for participants in this study. Consequently, to attract customers, Niftie's and Wefood need to offer a broad product range including food consumers regularly buy, such as fruit, vegetables and bread, for instance. According to Wefood's business records, fresh fruit and vegetables and bread are the most purchased items while those products also form the biggest part of retail food waste (Lebersorger and Schneider 2014; Cicatiello et al. 2017). Nevertheless, even though fresh fruit, vegetables and bread constitute the majority of retail food waste, its acquisition, transport, storage and short shelf life form challenges for the surplus supermarkets in offering those products. Niftie's did not offer either fresh fruit and vegetables or bread, and could not attract sufficient customers.

Customers also enjoy finding special offers and products in the surplus supermarkets their regular supermarkets do not provide. When Wefood stocked a popular product and promoted it via Facebook, consumers spread the news by sharing Wefood's post, attracting many consumers and causing sales to rise considerably. Hence, Wefood and Niftie's can attract more consumers by providing the right products, including a broad range of basic items but also some special products, and by promoting those (via social media, for example). The SFST highlights product range as an internal factor for businesses selling surplus food that influences adoption (and food waste reduction). The product range consumers experience when interacting with a business selling surplus food influences their perception of the business and thus either causes adoption, if the consumer perceives the product range as attractive, or rejection. Offering several variations of the same product, as regular retailers do, is difficult for the surplus supermarkets but also not necessary. Scholars argue that providing fewer variations of a product increases the likelihood that consumers purchase products and do not regret their choice later (Iyengar and Lepper 2000; Schwartz 2004).

A convenient store location is another factor that has the potential to affect customer acquisition positively. Consumers do not deviate much from their regular shopping and commuting routes and compare the distance to the surplus supermarkets with the distance to their regular supermarket. Furthermore, the surplus supermarkets might not stock all

required products, creating the necessity of visiting another shop as well. Hence, a location in a popular area with other amenities attracting consumers, within a busy commuting route and close to a regular supermarket is beneficial. Seeking a location close to potential competitors contradicts location preferences of regular retail stores that favour a big distance to competitive businesses (Cox 2012). The case businesses, however, can increase adoption by providing an attractive product range in such a convenient location.

Also, the atmosphere that consumers sense when shopping at the surplus supermarkets is compared to the shopping experience at regular retailers. On the one hand, consumers are used to a certain store layout based on attractive product presentations. In contrast, the initial layout of the surplus supermarkets was very basic, mostly consisting of stacks of delivery boxes containing the products. As a consequence, consumers perceived the stores as not offering *'a lot of things'* (Stuart) and associated them with *'Eastern European [shops] (...) from the 1980s'* (Peter). When Wefood hired retail experts, they updated the store layouts so that the surplus supermarkets resembled regular retailers. More products were available and presented loosely on shelves and counters. Sales rose considerably, indicating that consumers are attracted by the more familiar layout. The SFST explains this influence of expertise and atmosphere on customer acquisition. Staff who understand how to create an attractive atmosphere are important for customer acquisition. Moreover, the necessary facilities are required. The SFST describes that staff, expertise and facilities are required to create an attractive atmosphere (and product range and pricing). The attractive atmosphere, in turn, is necessary to generate positive consumer perception which leads to adoption.

In the case of regular retailers, full shelves of attractive products are related to overconsumption and the creation of surplus food and food waste (Stenmarck et al. 2011). Hence, the adoption of this practice could be perceived as regressive. As in regular retail, an attractive product presentation and bigger product range caused the surplus supermarkets' sales to increase. However, in the case of the surplus supermarkets that meant more surplus food was acquired from retailers and more surplus food was sold to customers. Consequently, more food was re-used and less food was wasted - which is progressive, not regressive. Furthermore, the data suggest that the more surplus food customers buy, the less regular food they purchase, which represents a desirable situation regarding issues related to resource consumption. The purpose of the surplus supermarkets is to reduce food waste by selling surplus food as an alternative to regular food and to create a profit via the sale of surplus food to maintain and develop business operations. If this goal can be achieved with a store layout resembling the layout of regular

supermarkets, updating the store layout to be less alternative and more like the status quo is progressive and advisable.

On the other hand, consumers enjoy certain differences they notice comparing the atmosphere of the surplus supermarkets with regular retailers. Consumers appreciate not being biased by promotions, creating positive impact while paying low food prices and being able to have friendly interactions with the staff. Thus, the ability of retail staff to create a pleasant atmosphere by making the customer feel welcome, by providing help, by building confidence in the products and by creating a positive customer relationship applies to the case businesses as well (Kati 2010). Most customers experience positive emotions when they use the case businesses, with some perceiving shopping at Wefood or Niftie's as leisure activity rather than as necessity.

Today, shopping is often considered a necessity that needs to be managed as time-efficiently as possible - as opposed to the 1950s, when shopping was regarded as a pleasant leisure activity (Cox 2012). Grewal et al. (2010) found that customers who enjoy the atmosphere of a shop spend more time and money there. The success of Foodsharing is strongly linked to the fact that members feel a sense of belonging, as they are part of a community sharing the motivation to reduce food waste (Ganglbauer et al. 2014). Hence, providing a pleasant shopping experience for consumers and creating a sense of community and belonging could be the comparative competitive advantage over regular retailers. This could justify the additional effort of shopping at a store with a limited offer.

Moreover, consumers' attitudes, especially regarding eating outdated and organic food, affect their adoption of buying food from the surplus supermarkets. Therefore, the SFST depicts attitudes as an internal factor influencing consumer perception. The desire to only eat fresh and healthy food, which, especially in Denmark often means organic food, reduces the likelihood of buying surplus food. Preferring organic food could have been associated with environmental concerns, as organic farming often is perceived as less harmful for the environment (Tuomisto et al. 2012). Hence, it could have been assumed that consumers who prefer buying organic food are also willing to buy surplus food to further create a positive environmental impact. However, most participants reported purchasing organic products for reasons related to their health, while also environmental concerns were not found to be a major driver motivating the purchase of surplus food. A healthy diet is defined by cultural norms and means eating varied, fresh, unprocessed food. On the one hand, this definition reduces the adoption of buying surplus food, as unprocessed food (such as fruit and vegetables) is not always available (Niftie's only sold processed food)

and as surplus food is considered less fresh. On the other hand, such a diet increases household food waste, as perishable products often are not used in time and thus discarded (Evans 2014; Visschers, Wickli, and Siegrist 2016).

Also, consumers who do not eat food past its 'best-before' date tend to not shop at the surplus supermarkets, as some of the products are outdated. The various dates describing food quality ('best before' and 'sell-by') and food safety ('use-by') confuse consumers who often do not understand the meaning of the dates (Milne 2013; Institute of Food Technologists 2015; Toma, Costa Font, and Thompson 2017). Consequently, consumers avoid buying food that has reached any of the dates, causing flawless products that have reached their 'best before' or 'sell-by' date to form a considerable amount of retail food waste (Lebersorger and Schneider 2014; European Commission 2018). The European Commission (2018) aims to simplify date labelling on food, which could change consumer behaviour in future.

Hence, structural changes regarding the definition of a healthy diet or the elimination of the 'best before' date on food have the potential to change consumers' attitudes and shopping practices (Evans 2011; Toma, Costa Font, and Thompson 2017). Additionally, tastings can be offered in the surplus supermarkets to reduce consumers' perceived risk when buying surplus food. Wefood already provided tastings of new products and thus managed to increase consumers' trust in the quality of the surplus food, which is important as trust enables consumer engagement despite uncertainties (Thorsøe and Kjeldsen 2016). Most customers of the surplus businesses are eating food after its 'best before' date and generally perceive the surplus food as safe and of good quality.

Another factor affecting the diffusion of the surplus supermarkets is the relatively high innovation cost. Retail is a very competitive industry and to acquire more customers, to increase sales and to be profitable, retail businesses need to innovate (Grewal et al. 2010). Also, for the surplus supermarkets, innovation is necessary to acquire sufficient customers to be profitable. The case businesses can achieve innovation by opening more stores or by enhancing the current store and offer. As outlined by the SFST, these actions require access to capital to pay for the needed facilities and staff. A team of skilled staff is necessary to successfully realise an innovation and to acquire supply and customers. Therefore, access to funding is important for the surplus supermarkets to innovate and to diffuse into different areas.

The enhancement of its current stores enabled Wefood to sell more surplus food and to thus secure financial sustainability and avert the closure of its least profitable shop. Wefood obtained the necessary funding from the charity that founded it. One way to acquire funding is to collaborate with other organisations to share resources (Bloom and Chatterji 2009; Sakarya et al. 2012). Innovation to achieve profitability was needed in the case of Niftie's as well. However, Niftie's did not have any partners, thus no access to funding or human resources and consequently could not improve its situation. A partnership with another organisation benefitting from Niftie's social mission, such as one or all of the big supermarkets in the UK, could have saved Niftie's from ceasing operations. Moreover, the surplus supermarkets can use their social mission to obtain funding from philanthropic investors or grants for social or environmental projects (Doherty, Haugh, and Lyon 2014).

Further external factors affecting business development, and hence adoption, are policies and legislation (Grant 2008). The SFST explains that policies and legislation are external factors influencing businesses selling surplus food as well as consumers. These external factors have an impact on the internal factors which influence whether or not consumers purchase surplus food from businesses selling surplus food. For instance, policies could reduce the surplus supermarkets' need for funding and thus facilitate innovation and adoption. Considering that the surplus supermarkets tackle two major social and environmental problems, food poverty and food waste, city councils and regional governments could consider supporting those businesses. Surplus supermarkets could be exempt from business rates, taxes or other fees, for example. Moreover, the acquisition of supply could be facilitated considerably via legislation. Currently, minor fiscal incentives, such as VAT exemption on food donations in the UK and tax deductions for food donations in Denmark (Deloitte 2014), do not motivate food donations sufficiently, as Wefood as well as Niftie's struggled to receive surplus food. Legislation as in France, where retail organisations have to try to donate surplus food before they can dispose of it, would enhance the access to surplus food significantly (Caraher and Furey 2017). Retailers and food producers would contact businesses selling surplus food, offering their surplus stock, not vice versa. Hence, acquisition of supply would require less expertise while the product range of the surplus supermarkets would be broader and more attractive to consumers. Thus, adoption and profitability could be increased facilitating further diffusion. Legislation could even require the existence of local shops selling surplus food to reduce food waste and to alleviate food poverty. Local councils could provide the funding and use the profits generated to invest in further environmental or social projects. In addition, legislation could eliminate the 'best before' date on products, which could change consumer perception of surplus food but also reduce the amount of available surplus food (see 7.4).

Because of their resource constraints, social enterprises, such as the surplus supermarkets, and also social supermarkets (Schneider et al. 2015), often have to rely on volunteers (Doherty, Haugh, and Lyon 2014). Consequently, challenges those businesses face are a lack of volunteers and a shortage of skills (Doherty, Haugh, and Lyon 2014; Schneider et al. 2015). To attract and retain volunteers, the cost and motivations for the volunteers should be evaluated and non-financial incentives have to be provided (Doherty, Haugh, and Lyon 2014). However, their focus on their external social mission can cause social enterprises to neglect their internal social responsibility, including investment in employees and ethical people management (Cornelius et al. 2008). These issues also applied to the surplus supermarkets Wefood and Niftie's. Both businesses did not provide any incentives initially and experienced a constant lack of volunteers, affecting business operations negatively.

A shortage of volunteers caused the acquisition of supply (the product range) as well as the opening times to be limited, harming customer acquisition and thus diffusion. The SFST outlines the importance of staff for the businesses selling surplus food. The internal factors 'staff' and 'expertise' have an impact upon the internal factors 'product range', 'atmosphere' and 'pricing'. Skilled staff is needed to acquire the right products so that the business can offer an attractive product range. Moreover, staff is required to create a positive atmosphere, by organising an attractive layout and by making the consumer feel welcome, i.e. providing information, being happy and friendly and generating a feeling of belonging. In addition, skilled staff is needed to create an efficient pricing strategy pricing the products as cheap as necessary but as expensive as possible. Consequently, a shortage of staff as well as a high turnover rate, which means that expertise is lost and has to be built again, negatively affects internal factors that are essential to create positive consumer perception and thus adoption. To improve volunteer retention, Wefood started to initiate social activities for the volunteers, such as a Christmas party or summer barbeque. The volunteers enjoyed those events, but as they had to organise those themselves, they were relatively rare. Belonging to a community motivates Foodsharing members to redistribute surplus food and to acquire new members (Ganglbauer et al. 2014). Generating this feeling of belonging could improve volunteer acquisition and retention of the surplus supermarkets as well. Implementing attractive incentives is important to attract and retain volunteers and to thus run the surplus supermarkets cost-efficiently.

Moreover, volunteers are motivated by capable leadership, a clear market strategy and a positive business culture, which are the internal success factors for social enterprises

(Medina Munro and Belanger 2017). However, the dual purpose of creating profits but also pursuing social objectives can interfere with the clarity of the market strategy of social enterprises (Doherty, Haugh, and Lyon 2014). At Wefood this conflict emerged in the pricing strategy, for instance. While the volunteers believed that first and foremost surplus food needs to be redistributed, even if the prices have to be reduced further, the management needed the volunteers to sell the products at a profit to achieve economic viability. Due to external funding, capable management could be implemented, determining and communicating a clear strategy that caused the business culture to improve considerably. The volunteers were motivated to work towards the clear goal of generating profits by selling surplus food to the extent that they even accepted unplanned additional work shifts when necessary. The SFST acknowledges expertise as an internal factor affecting further internal factors (product range, atmosphere, pricing) that are essential for adoption (i.e. positive consumer perception).

Summarising those aspects, it can be stated that the surplus supermarkets need to provide a convenient and pleasant shopping experience to acquire customers. Moreover, structural changes regarding the definition of a healthy diet and date labelling could influence adoption positively. Furthermore, partnerships and policies can support the case businesses' development and diffusion and thus create positive environmental and social impact. Another important factor for business development, and hence adoption, is the attraction and retention of volunteers, which can be enhanced via providing incentives, a clear market strategy and a positive business culture.

This section explained the factors influencing the adoption of the surplus supermarkets. The following section outlines the factors affecting the adoption of the second business model, the app TGTG.

6.3.3 Factors affecting the adoption of the surplus food app – Too Good To Go

Consumers' attitudes regarding the consumption of outdated or organic food do not affect the adoption of TGTG as much as they affect the adoption of the surplus supermarkets. TGTG mostly sells leftovers, surplus food, from restaurants, cafés and bakeries. This food was prepared during the day and would not be sold the next day. Therefore, surplus food

available via TGTG is the same food those businesses sell during their regular operations. Moreover, leftovers from food service businesses usually are not labelled, indicating neither 'best before' or 'sell-by' dates nor 'organic' certifications that could influence consumers' purchasing decisions.

The difference between buying a TGTG meal or a regular meal from the restaurants is the service, as a TGTG meal is a takeaway meal and can only be collected at the end of the restaurant's opening time. Customers compare the service as well as the products they receive from TGTG with the service and products they receive when interacting with regular food service businesses and expect both to be similar. TGTG partners providing a service similar to the service of regular restaurants (i.e. similar to their regular service) can increase adoption. TGTG customers appreciate, for instance, when they can fill their TGTG box in a buffet restaurant themselves, rather than receiving a prepared 'magic box'. A factor causing rejection is the collection time, which is limited and often later than the regular opening times of restaurants, cafés and bakeries. Hence, consumers' lifestyles are an important factor for adoption of TGTG. Consumers with more flexible lifestyles and consumption patterns are more likely to purchase surplus food from TGTG. The SFST highlights lifestyle as an internal factor influencing consumer perception of businesses selling surplus food. The service affects the atmosphere consumers sense, as they might feel happy because they can fill their box themselves and the collection times are convenient for them or disappointed because the food they received does not appeal to them, or the collection times are inconvenient. Therefore, the service TGTG partners provide can affect adoption negatively as well as positively. In the SFST, this is explained by the importance placed on the businesses' atmosphere for consumer perception and thus adoption. As an influential factor in the theory, business atmosphere takes into account that the layout or service is attractive and that consumers experience positive feelings when interacting with the business (e.g. because of the service or layout, the friendliness of the staff, the positive environmental impact they create, the cheap price, the good quality of the food, the feeling of belonging).

A further difference in TGTG's service is that ordering and payment are organised via an app. Convenience motivates the use of technology solutions and was identified as a driver to use TGTG (Evans and Miele 2012). Considering that many people feel harried, time-efficient convenient solutions are in demand (Southerton 2003), meaning that operating via an app is an advantage of TGTG. Nevertheless, two consumers reported that they could not use the app on their phone, while consumers without a smartphone are excluded from using TGTG. Consequently, consumers with flexible lifestyles and consumption patterns

that are likely to have a smartphone, such as students, for instance, should be targeted by a marketing strategy outlining the convenience of using TGTG.

The experience consumers have using TGTG determines if they adopt or reject this innovation. TGTG partners want to please customers and to provide a positive customer experience. Hence, TGTG meals often contain big portions. Providing big portions to satisfy customers is a common practice in retail, causing food waste (Pirani and Arafat 2014). However, only two participants reported that they had wasted some parts of their TGTG meal, while many customers said that they used their generous portions over several meals. Thus, customers are pleased while overall more surplus food is consumed and the need for regular food reduced even further. Moreover, TGTG partners advertise less TGTG meals than are available to guarantee that every customer is served. This practice, i.e. stocking and preparing more food than required according to forecasts to avoid customer disappointment, is common in the food service sector and causes surplus food in the first place (Pirani and Arafat 2014). As a consequence, customer disappointment harming the adoption of TGTG is avoided while surplus food is created. This surplus food is either wasted or donated. Creating partnerships with organisations or individuals that collect the surplus food that is not sold via TGTG can further decrease food waste and increase the amount of consumed surplus food without negatively affecting the diffusion of TGTG.

To increase adoption, TGTG has to acquire further business partners. Having a choice attracts consumers (Iyengar and Lepper 2000; Schwartz 2004) and applies to participants of this study as well. The SFST explains that the product range of businesses selling surplus food influences adoption, as an attractive product range causes positive consumer perception. Hence, adoption of TGTG can be increased by acquiring more restaurants, as consumers appreciate being able to choose among a selection of restaurants while also more tastes can be met and a wider geographic area can be covered.

The acquisition of further business partners does not require more facilities and staff immediately, as existing employees can acquire new business partners. Thus, diffusion into further areas as well as broadening the offer is more cost-effective for TGTG than for the surplus supermarkets. However, external funding is still needed to pay for facilities, human resources and marketing materials, for instance, as the process to achieve profitability is slow due to the low profit margin of surplus food. In addition, a bigger sales team and further facilities might be required for further business development. The social mission of social enterprises can be helpful to acquire funding via grants or philanthropists (Doherty, Haugh, and Lyon 2014). TGTG succeeded in acquiring funding from private

investors and therefore could invest in business development. One of those developments was the opening of a store and online shop to also sell surplus food from wholesalers and producers. With the shop, TGTG broadened its offer and enabled consumers to buy surplus food at various times and to make purchases without the need for the app. The SFST shows the importance of funding for the development of businesses selling surplus food. The internal factor 'funding' has an impact on the other internal factors which indirectly (staff, expertise, facilities) and directly (product range, atmosphere, pricing) influence consumer perception and thus adoption.

Adoption could be further advanced via legislation requiring food service businesses to distribute their surplus food. Such regulation could facilitate the acquisition of business partners considerably. Thus, costs related to human resources and overall funding needs would be reduced while a broader selection of TGTG meals could increase adoption. The more consumers purchase TGTG meals the more profits are generated. Profits can be reinvested into business development, enhancing the innovation and potentially increasing adoption even further. Because of this correlation, the SFST depicts policy and legislation as an external influencer impacting on the adoption of businesses selling surplus food.

In conclusion, the factors affecting the adoption of TGTG are primarily related to consumers' experience of the service. Consumers appreciate a service similar to the regular food services they know, while the late collection times can limit consumer adoption. Therefore, consumers with flexible lifestyles and consumption patterns who appreciate the convenience of ordering and paying for food via an app should be targeted. To avoid disappointing customers, TGTG partners create surplus food as during their regular operations. Partnerships with organisations or individuals can help TGTG partners to redistribute the leftover surplus food and prevent its disposal. To increase adoption, more business partners need to be acquired so that consumers can choose among various TGTG partners in different areas. Acquisition of business partners can be relatively cost-efficient but still requires funding, which can be gained from philanthropic investors. Legislation requiring businesses to distribute their surplus food could facilitate acquisition of business partners and enhance adoption of TGTG considerably.

The previous sections elaborated on the factors enhancing adoption, and thus diffusion, of businesses selling surplus food commercially. The following sections outline how food waste can be reduced via the sale of surplus food.

6.4 The reduction of food waste via the sale of surplus food

6.4.1 The case businesses achieved the reduction of food waste and supported degrowth

This research also provided insight into how businesses selling surplus food can reduce food waste. The case businesses have the capability to reduce food waste: They manage to sell most of the surplus food they stock, consumers reported that they actually consume the purchased surplus food, and the consumption of surplus food seemed to not have caused the disposal of other food. Moreover, almost all customers said that they substituted some of their purchases of regular food with surplus food, meaning not only food waste but also overall resource consumption is reduced to some extent. Therefore, the SFST states that food waste is reduced and degrowth supported when businesses selling surplus food are adopted by consumers. Insights regarding those factors are explained in the following.

Innovation-decisions can have desirable or undesirable outcomes (Rogers 2003). Considering the sale of surplus food, the desirable reduction of food waste is achieved, as customers reported that they only buy surplus food they planned to consume and that they actually consume it. Alternatively, food waste levels could have not changed or increased, representing an undesirable outcome. Because surplus food is sold at a low price, consumers could have bought more than they needed, as cheap offers can motivate overconsumption (Graham-Rowe, Jessop, and Sparks 2014). Regarding consumers' tendency to overconsume (Chalak et al. 2016), the purchase of surplus food could have caused other food in the household to be wasted. Also, the purchased surplus food could have been discarded, as older products can be perceived as polluting fresher products in the household (Evans 2014). Furthermore, surplus food often has a short shelf life, so it could have happened that consumers do not manage to consume the surplus food in time and waste it instead. The cheap price as well as the fact that the surplus food was destined to be wasted, could have caused consumers to value surplus food less and to therefore put less effort into its timely consumption or preservation (Hebrok and Boks 2017). However, customers reported to only buy surplus food they knew they would consume in time and to resist offers when they knew they would not be able to consume it soon enough. Hence, customers value surplus food, despite its cheap price and its status.

Additionally, customers use the surplus supermarkets to substitute some of their regular groceries with surplus food. A TGTG meal is mostly purchased when the customers have no other food available, and it replaces the purchase of a restaurant meal or other regular food that would still need to be prepared, as explained by 80% of the participants that were interviewed primarily as TGTG customers. This finding supports literature arguing that upstream interventions, such as the disruptive businesses selling surplus food, can initiate behaviour change (Verplanken and Wood 2006; Carrigan, Moraes, and Leek 2011). Consumers reduce food waste as well as the purchase of regular products by buying surplus food from the case businesses. Therefore, degrowth is supported to some extent, as the consumption of new resources is reduced (Carrington, Zwick, and Neville 2015).

To achieve sustainable development, a reduction of resource consumption (i.e. a degrowth strategy) is necessary (Kolandai-Matchett 2009; Lorek and Fuchs 2013). However, with growth as the capitalist measurement of success, politicians struggle to implement initiatives fostering degrowth (Berg and Hukkinen 2011), reinforcing the need for market-based solutions progressing degrowth. With the case businesses, re-used instead of new resources are consumed, according to the principle of the circular economy, a degrowth strategy (WRAP 2017b). As mentioned in Section 1.3.3, the European Commission (EC) is aiming for a circular economy and plans to reduce food waste by 50% and resource input in the food and drink supply chain by 20% by 2020 (European Commission 2011). Businesses selling surplus food can support the achievement of those targets.

Summarising those insights, it can be stated that selling surplus food has the potential to reduce food waste and overall resource consumption. Consumers value surplus food, as they are buying and consuming it. Despite its status and low cost, consumers reported that they only purchase surplus food they plan to consume while substituting some of their regular food purchases with surplus food. Therefore, food waste is reduced and degrowth supported. The following section explains why regular retailers and food service businesses can also benefit from selling their surplus food.

6.4.2 Surplus food has a market value

The fact that the case businesses managed to sell most of the surplus food they stocked and that consumers valued this food shows that surplus food has a market value. Retailers consider surplus food to be waste (Stenmarck et al. 2011), while this study proved that surplus food is a resource with a market value. This insight has the potential to change the perceptions of retailers and food service businesses.

Retailers might perceive the cheap offer of surplus food in their stores as a threat to the other more expensive items and therefore fear a loss of sales (Aschemann-Witzel et al. 2017). However, the fact that personal attitudes affect the purchase of surplus food demonstrates that only some consumers are likely to buy surplus food. Hence, if retailers offered their surplus food at a low cost, only some consumers would buy it, while others would not consider buying it. Furthermore, retailers perceive surplus food as imperfect and as a threat to the store's attractiveness (Stenmarck et al. 2011; Aschemann-Witzel et al. 2017). Nevertheless, if the surplus food was sold in a specific location, such as a dedicated shelf, its appearance would not affect the rest of the retailer's offer. Overall, sales might even increase, as new customers may be attracted by the offer of cheap surplus food. The findings of this research indicate that cheap prices motivate consumers to shop at a retail business that is new to them. Those new customers might not only buy the surplus food but also find it convenient to do the rest of their shopping at that supermarket, as convenience was found to be an important purchasing factor.

Also, restaurants can generate revenue from the food they otherwise waste whilst the offer of surplus takeaway meals is unlikely to affect the restaurants' regular sales. Most TGTG partners reported that their regular and their TGTG customers were different people. In one case, a regular customer started to also buy TGTG meals from a restaurant he was using frequently so that he could eat food from that restaurant more often. Overall, this habit did not reduce the number of regular meals he purchased from that restaurant but increased the number of his purchases from the restaurant. Moreover, consumers who would not have purchased a regular meal but do buy a surplus meal get to taste the food the restaurant offers and might come back as regular customers, recommend the food to peers or buy a complimentary item to their surplus meal from the restaurant. TGTG partners experienced incidents where customers bought a drink with their TGTG meal or came back as regular customers, even though those occasions were reported to happen quite rarely.

Furthermore, the data suggest that customers are pleased that their retailer or restaurant is acting against food waste. Existing customers as well as new customers might experience positive emotions when shopping at that retailer or eating at that restaurant, as they feel they are supporting a good cause. Customers using the case businesses experience positive emotions because they are creating a positive impact while getting good cheap food, and they therefore continue to use the case businesses. This coheres with Moizer and Tracey (2010) arguing that the provision of two reasons for consumers to use a business, the social and the economic mission, can improve customer acquisition and retention. Thus, offering surplus food can form a competitive advantage for retailers and restaurants. Also, donating their surplus food to other businesses selling surplus food represents a social mission that can enhance customer acquisition and retention. Considering the negative reputation related to food waste, retailers and food service businesses can sell their surplus food (directly or indirectly) as part of their CSR strategy to enhance their image (Segrè and Gaiani 2012). Swaffield, Evans and Welch (2018) found that retailers acting against food waste experienced increased customer loyalty.

Additionally, the business cost for waste disposal is reduced if less food is wasted. Mena, Adenso-Diaz and Yurt (2011) found that the cost related to food waste is often underrated while opportunities to increase profitability through better waste management, such as re-using food, are overlooked. In British companies on average 4% of turnover is lost via wastage (Swaffield, Evans, and Welch 2018). Therefore, selling instead of wasting surplus food can be beneficial for retailers and restaurants. For example, Lidl already has made this realisation and started to successfully sell boxes of surplus food for £1.50 in 122 stores (Wells 2019).

In summary, it can be stated that regular retailers and food service businesses can increase their sales, improve customer acquisition and loyalty and enhance their image by selling their surplus food (either directly or indirectly). At the same time these businesses would reduce their food waste and progress towards meeting food waste reduction targets as proposed by the EC or voluntary agreements, such as the Courtauld Commitment (Whitehead et al. 2013; Göbel et al. 2015). Therefore, the fact that surplus food has a market value should motivate regular retailers and food service businesses to sell and not waste their surplus food, supporting, not compromising, business development.

Retailers and restaurants can apply the SFST to sell their surplus food successfully. If these regular businesses sold their surplus food themselves, the surplus businesses might receive less supply, affecting their sales negatively. Nevertheless, food waste would be

reduced and the perception of surplus food improved. Thus, businesses selling surplus food commercially have the potential to create behaviour change. By changing the perception of surplus food, they can be a stepping stone towards food waste prevention. The SFST supports this behaviour change by providing a framework that helps businesses selling surplus food to enhance consumers' perception of surplus food. If retailers and restaurants realised that customers value surplus food and appreciate actions towards reducing food waste, they might be motivated to initiate further changes reducing overconsumption, surplus food and food waste. A summary of this chapter is outlined in the next section

6.5 Summary

This chapter showed how the research objectives of this study were met by explaining how the results answer the research question. Hereby, contributions to theory and practice were outlined. The study contributes to knowledge as it is the first study researching businesses selling surplus food commercially to consumers. The factors affecting the adoption of those businesses were identified. Consumers are likely to adopt the innovation of buying surplus food from those businesses, if certain factors including their attitudes, lifestyles, self-identities, social network and the role price plays in their purchasing decisions are compatible with buying surplus food and if they appreciate the prices, product range and atmosphere they experience at the businesses selling surplus food. In particular, consumers with flexible lifestyles who appreciate cheap food prices, eat outdated food and do not focus on eating primarily organic food are more prone to buy surplus food. To promote surplus food as a desirable product, social media influencers could further enhance adoption and overcome stigmas related to the consumption of surplus food.

Moreover, it was revealed that businesses selling surplus food actually reduce food waste and support degrowth. The case businesses sell most surplus food they stock, while consumers report that they consume the surplus food they purchase without wasting other food they own. Consumers substitute some of their shopping of fresh food with surplus food, meaning that degrowth is supported. In view of these findings, it can be stated that surplus food has a market value and should be considered to be a resource by regular retailers and restaurants. Selling surplus food can be a profitable business while reducing food waste and overall resource consumption.

The policy-related contributions of this research suggest that policies and legislation supporting the sale of surplus food should be implemented. Businesses selling surplus food reduce food waste and overall resource consumption while providing access to cheap food. Hence, local councils should consider supporting those businesses, for example, by exempting them from business rates. Legislation requiring retailers and restaurants to donate and not waste their surplus food would facilitate the acquisition and sale of surplus food considerably and reduce food waste efficiently. Furthermore, the existence of businesses selling surplus food could be a local requirement to fight food waste, food poverty and resource depletion. Local councils could provide the funding and benefit from the profits generated.

The main theoretical contribution of this study is the development of a conceptual framework, a new theory (the SFST), explaining how businesses selling surplus food can be adopted and reduce food waste. To obtain the results the framework is based on, the TODOI was applied for the first time in food waste research. Combining the TODOI with perceptual phenomenology enabled rich insights by investigating the factors that affect the adoption of the case businesses and the circumstances shaping those factors via the individual perceptions of consumers and business representatives. In addition, the study revealed the extent to which the existing literature regarding consumer behaviour, retail and social enterprises can be applied to businesses selling surplus food commercially.

Contributions to practice entail recommendations for marketers regarding ways in which to increase the sale of surplus food. These recommendations focus on the factors affecting diffusion, such as the product range and atmosphere, funding and target customers. This research showed how businesses selling surplus food commercially can be adopted by consumers and reduce food waste while fostering degrowth. The following chapter summarises the thesis and provides some final remarks.

Chapter 7: New knowledge on the sale of surplus food

7.1 Introduction

This chapter concludes the thesis which investigated the research question: 'How can businesses selling surplus food commercially be adopted by consumers and reduce food waste in Denmark and the UK?' An overview of the content of the thesis is provided, highlighting the most important insights from each chapter. The key contributions of this research are summarised and recommendations for practice are explained. Limitations to the study and suggestions for further research are presented before the chapter ends with a summary.

7.2 Overview of the thesis

This study investigated businesses selling surplus food commercially to consumers as potential solutions to food waste. Food waste is a global issue that needs to be tackled, while the commercial sale of surplus food as a solution to food waste remained under-investigated. This case study research filled this gap in knowledge as demonstrated in the following paragraphs.

Chapter One outlined the context of this research, explaining the scope and causes of food waste and its current handling. Considerable amounts of edible food (surplus food) are wasted globally (FAO 2013). In developed countries, most food waste happens at the end of the supply chain with retailers, restaurants and consumers (FAO 2011). There, the main cause of food waste is overconsumption with retailers and food service businesses preparing and stocking too much food to attract and please customers with an abundance of perfect products while also consumers tend to overconsume (Stenmarck et al. 2011; Mena, Adenso-Diaz, and Yurt 2011; Quested, Ingle, and Parry 2013; Pirani and Arafat 2014; 2016).

When food is wasted, resources are wasted and pollution is created, exacerbating global challenges such as climate change and resource depletion (FAO 2013). Currently, most food waste is sent to landfill with the remainder being redistributed to charities, used for energy generation or recycled. After its prevention, the redistribution of surplus food for human consumption is the most desirable option. Pioneering businesses redistribute surplus food by selling it commercially. The commercial sale of surplus food is a potential solution to food waste that solves environmental, social and economic issues by reducing food waste and its negative environmental impacts, by providing affordable food and by advancing the transition to a circular economy (HLPE 2014). Most solutions to food waste only focus on one of these aspects (Mourad 2016).

Despite their potential to tackle environmental, social and economic issues, businesses selling surplus food commercially remained under-investigated. Therefore, this research investigated the research question: 'How can businesses selling surplus food commercially be adopted by consumers and reduce food waste in Denmark and the UK?' The research objectives were identified as:

1. To understand the motivations and barriers for consumers to engage with businesses selling surplus food.

2. To explore the challenges the businesses are facing in selling surplus food.
3. To identify the successes these businesses are achieving.
4. To analyse how these businesses can become long-term solutions to food waste.

Chapter Two reviewed literature providing information regarding these potential solutions to food waste. As those businesses represent a concept to reduce food waste by re-using surplus food, literature regarding concepts to reduce and re-use food waste was reviewed. Among those concepts are the circular economy model, degrowth strategies and initiatives redistributing surplus food. Regarding the latter, most literature focuses on charitable redistribution or sharing of surplus food. When surplus food is redistributed, existing resources instead of 'new' resources are used. The re-use of existing resources can reduce the overall resource consumption to some extent (WRAP 2017b). Thus, the redistribution of surplus food represents a circular economy model and a degrowth strategy, supporting sustainable development (Lorek and Fuchs 2013; WRAP 2017b).

Literature tackling the different aspects of businesses selling surplus food commercially was also examined. Because of their social mission based on a commercial business model, businesses selling surplus food are social enterprises that operate in the retail sector and provide the opportunity for sustainable consumption via the disruption of automatic habits (Verplanken and Wood 2006; Medina Munro and Belanger 2017). Even though literature covers those topics (social enterprises, retail, sustainable consumption, disruptive businesses), it remained unknown to which extent this literature applies to businesses selling surplus food commercially.

Businesses selling surplus food commercially need to be adopted by consumers in order to reduce food waste. Hence, literature about consumer behaviour was researched, revealing that consumer behaviour is complex and influenced by many contextual factors (e.g. Jackson 2005b; Evans 2011). To understand why consumers adopt or reject an innovation, such as businesses selling surplus food, this research drew upon the TODOI. A lack of empirical studies considering the phenomenon of businesses selling surplus food commercially and the challenges consumers experience with initiatives fostering sustainable consumption formed gaps in knowledge (Alexander and Smaje 2008; Göbel et al. 2015; Carrigan 2017) and the need for further studies on sustainable food systems (Göbel et al. 2015).

Chapter Three described the research approach that aimed at filling these gaps in knowledge by investigating businesses selling surplus food commercially to consumers.

For this research, reality was perceived as being socially constructed and individual perceptions of real world phenomena were acknowledged as realities. With the application of perceptual phenomenology insights from research participants were based on their perceptions of the businesses selling surplus food. The application of the TODOI suited the phenomenological approach.

Benefitting the investigation of contemporary real world phenomena, case study research was selected as the research approach (Yin 2014). Denmark and the UK were the chosen case locations because both countries have high food waste levels while their cultures are different, especially regarding food consumption and sustainability (Brunsø, Grunert, and Bredahl 1996; Brown, Dury, and Holdsworth 2009; Thøgersen 2010; FAO 2011; Halloran and Magid 2014; RobecoSAM 2019). Three businesses selling surplus food commercially to consumers were selected as cases because they represent two different business models that operate in those two countries each. Two supermarkets solely selling surplus food (Niftie's in the UK and Wefood in Denmark) and the app Too Good To Go (TGTG), that enables restaurants to sell their leftovers to consumers at the end of the day in Denmark and the UK, formed the cases of this cross-cultural comparative case study research. Several steps were undertaken to assure the quality of this research.

Chapter Four detailed the data collection and data analysis processes. Further information about the selection of the cases and the cultural and economic background of the case locations was provided. For this research only businesses selling surplus food in its original form commercially to consumers were of interest, as those remained under-investigated while representing a potential market-based solution to food waste. In addition, researching the sale of unprocessed surplus food promised to reveal how consumers perceive these products that were considered as waste and unsaleable earlier in the supply chain and whether unprocessed surplus food has a market value. Primary data were collected via semi-structured interviews, group interviews, a focus group interview and observations with customers, consumers and business representatives. Also, secondary data in the form of business records, Facebook videos and updates on the websites of the case businesses were gathered. The data were analysed using thematic analysis and the TODOI. Limitations regarding data collection and analysis were explained. Conducting data collection and analysis was an interesting and fun experience during which I improved my skills in data collection and data analysis. Further reflections on positionality and my development as researcher were described in Section 4.7.

Chapter Five outlined the four major findings that were developed corresponding to the above-mentioned research objectives:

1. Social circumstances determine if consumers are likely to engage with the case businesses or not.
2. Consumers become customers if the product range satisfies them and they experience positive emotions using the case business.
3. Surplus food is sold and consumed.
4. To become long-term solutions to food waste, the case businesses need access to funding.

Consumers engage with the case businesses if the idea of buying surplus food aligns with their self-identities, lifestyles, attitudes, social networks and the role of price in their purchasing decisions. When consumers interact with the case businesses, they purchase surplus food if the product range, pricing and atmosphere appeal to them. For the provision of an attractive product range, pricing and atmosphere skilled staff and facilities are required. As the acquisition as well as the sale of surplus food is challenging while the profit margin is low, the case businesses need funding to realise the necessary investments to attract customers. Moreover, the data suggest that the case businesses are reducing food waste while fostering degrowth. Most surplus food was sold and consumed, while consumers reported that they substituted some of their regular purchases with surplus food.

Chapter Six provided the answer to the research question guiding this research: 'How can businesses selling surplus food commercially be adopted by consumers and reduce food waste in Denmark and the UK?' The first part of Chapter Six outlined the new theory and its development. The second part provided the answer to the first part of the research question, explaining the factors affecting adoption of the case businesses in general and of the different business models in particular. The third part of the chapter answered the second part of the research question, describing how the case businesses reduce food waste and how it can be reduced further by the commercial sale of surplus food. The results were discussed in relation to existing knowledge while the theoretical and practical contributions of this study were presented. An overview of the key contributions of this research is provided in the following section.

7.3 Key contributions of the study

According to Corley and Gioia (2011), a contribution should be of scientific but also practical value, can be surprising or conform to common sense but needs to provide new insight and should focus on emergent issues. Most contributions of this research might be seen as conforming to 'common sense'. However, they represent new insights into a contemporary global issue and have value for science as well as for practice. The purpose of scientific research is to create impact by providing new and useful insight, into practical phenomena for example (Corley and Gioia 2011). The aim of this research was to fill gaps in knowledge regarding a potential solution to food waste and to enable the enhancement of this practical solution with the scientific insight gained from conducting this study.

This research contributes to knowledge by providing empirical insight into the commercial sale of surplus food. A theoretical contribution is represented by the identification of the challenges consumers experience with this innovation (an innovation that fosters sustainability), the obstacles the businesses face in selling surplus food and the successes they achieve in reducing food waste and supporting degrowth. A conceptual framework (i.e. a new theory) illustrating the factors affecting the adoption of businesses selling surplus commercially, and thus food waste reduction, was developed (Figure 6.1, 6.2). This new understanding can be applied to enhance these market-based solutions to food waste so that more customers can be acquired, more surplus food sold and thus food waste and resource consumption reduced further. As the FAO (2013) states, the resources needed to feed the population in 2050 could be reduced by 60% if wasted food was consumed instead. Also, policymakers can use this research to acknowledge the positive social, environmental and economic impact businesses selling surplus food create. They help to reduce food waste, alleviate food poverty and foster degrowth by applying the circular economy. Consequently, policymakers could encourage regulations supporting businesses selling surplus food, regulations that facilitate the acquisition of surplus food or reduce business costs, for example. Recommendations for marketers and policymakers form the study's contribution to practice.

Another theoretical contribution relates to the value that surplus food has on the commercial market, drawing on the finding that various consumers buy the food retailers and restaurants discard (because they perceive it as non-saleable) (6.4.2). The applied contribution of this finding is that retailers and food service businesses could change their perceptions and hence sell, and not waste, their surplus food.

This study contributes to existing knowledge by finding that most literature regarding consumer behaviour, retail and social enterprises also applies to the sale of surplus food. However, contradictions to literature still were identified. Despite the cheap price of surplus food, customers of the case businesses did not tend to overconsume, as suggested by scholars researching consumer behaviour in relation to household food waste (Graham-Rowe, Jessop, and Sparks 2014; Chalak et al. 2016). In contrast to participants in other studies (Visschers, Wickli, and Siegrist 2016; Stancu, Haugaard, and Lähteenmäki 2016), participants of this research related food waste to environmental harm. Also, national cultural values were found to be less influential on individual (sustainable) shopping behaviour than assumed, considering that Parboteeah, Addae and Cullen (2012) argue that national cultural values influence sustainability. While most key success factors for retail (Kati 2010) also apply to the case businesses, the definition of a suitable location is different for regular retailers and businesses selling surplus food, with the latter benefitting from a location close to other retailers, as opposed to regular retailers. Revealing the consensuses and contradictions of the commercial sale of unprocessed surplus food to consumers with existing literature forms another theoretical contribution of this study.

Furthermore, this study is the first applying the TODOI in food waste research (6.2). A methodological contribution is represented by demonstrating that the TODOI is a useful theoretical framework for understanding how solutions to food waste, such as businesses selling surplus food, can be scaled. Especially the combination of TODOI with perceptual phenomenology provided rich insight enabling the understanding of the different factors affecting adoption of the businesses selling surplus food and how they influence each other. While the TODOI highlights the factors influencing diffusion, phenomenology suggests that those factors can be investigated by focussing on individual perceptions. Combining the TODOI with perceptual phenomenology enabled the understanding of the factors affecting diffusion from the perspectives of the potential adopters (consumers) and the innovation (business representatives). Consequently, deep, rich and holistic insight was gained, which enabled the development of a new theory (the conceptual framework). Applying the TODOI together with perceptual phenomenology proved to be beneficial to understanding consumer behaviour (towards this innovation driving sustainability).

This section summarised the contributions of this research. Recommendations for businesses selling surplus food commercially to consumers are outlined in the next section.

7.4 Recommendations for businesses selling surplus food commercially to consumers

This research investigated three businesses selling surplus food in two locations: the surplus supermarkets Wefood and Niftie's in Copenhagen and Dover, respectively, and the app TGTG in Copenhagen and Birmingham. Via interviews and observations with consumers, customers and business representatives, insights were gained regarding the challenges and successes the businesses face in the sale of surplus food. These findings can be used to enhance the sale of surplus food, to support the businesses in the acquisition of supply, customers and funding. The following table (Table 6.1) provides an overview of the recommendations for the case businesses based on the findings of this research.

Products	Fresh food	Basic products	Special items (items regular supermarkets do not usually stock, e.g. hand-made chocolate bars, rare spices or vegetables)	Broad range of participating food service businesses (re TGTG / business model app)	
Target group	Students	Young families	Unemployed	Retired	People experiencing a life change
Location	Busy areas with alternative cafés	Commuting area	Close to supermarkets	Close to universities	
Actions	Offer tastings	Cooperate with institutions for promotion (e.g. universities, family planning consultants, registration offices, employment agencies)	Use social media (e.g. Instagram influencers)	Create incentives for volunteers	Cooperate with partners for funding and surplus redistribution
External enablers	Policy and legislation (e.g. law requiring the redistribution of surplus food)	Exemptions from business rates, taxes, etc.	Elimination of 'best-before' dates		

Table 6.1: Recommendations for the case businesses (author)

Providing an attractive product range is essential for customer acquisition. For TGTG, that means acquiring as many restaurants, cafés, bakeries and supermarkets as possible so that consumers have a choice and different tastes and areas can be covered. For the surplus supermarkets, that means providing fresh produce, such as bread, fruit and vegetables. Therefore, it is essential to source produce and to present it in an attractive and eye-catching way so that passing consumers see that the shop provides fresh food. Moreover, consumers want to be able to buy basic items they regularly need. Hence, identifying those basic items and putting additional effort into the procurement of those products can increase customer acquisition and sales. However, customers also appreciate finding a variety of 'special' items that surprise and inspire them. These products should be promoted with particular care. Additionally, the surplus supermarkets should offer tastings to promote certain products and to reassure consumers regarding the quality of the food.

Customer acquisition can be further improved by tailoring a marketing strategy according to target customers. Most customers were people experiencing financial restrictions, such as students, unemployed people, young families or retired people. Moreover, those people have more flexible lifestyles and are therefore more likely to be willing to purchase a TGTG meal in the late evening or to shop at several shops, as they might not get all items they need in the surplus supermarkets. People who are experiencing a life change are more open to changing their habits (Verplanken and Wood 2006) and thus should be targeted as well. To achieve the latter, the case businesses could cooperate with institutions that interact with people experiencing a life change, such as universities, family planning consultants, registration offices and employment agencies. Promotional material (flyers, banners, posters, etc.) could be displayed or handed out by those institutions. Besides that, the case businesses could enhance customer acquisition via using social media more, Instagram in particular. Considering that 37% of the Danish and 42% of the UK's population use Instagram (Napoleon sp. z o.o 2019; Battisby 2019), many more consumers can be reached while the attractive presentation of surplus food can help to showcase the quality of the products. Stigmas related to surplus food can be further overcome if social role models (Instagram influencers) support the promotion of the case businesses. Influencers can influence consumers' perceptions of products or brands positively and thus affect consumer behaviour (Wang, Yu, and Wei 2012; Nandagiri and Philip 2018).

Busy areas that attract consumers, the target consumers in particular, are beneficial points-of-sale. Such locations are popular commuting routes, trendy districts with alternative cafés and busy bars, universities and regular supermarkets, for instance. A location close to a

regular retailer is especially beneficial, as customers of the case businesses can easily go on to buy products they did not get in the surplus supermarkets, for example, or they can combine the purchase of a TGTG meal with their shopping trip. Convenience is an important purchasing factor for consumers, highlighting the importance of a convenient location.

The case businesses are resource-constrained and therefore, the surplus supermarkets rely on volunteers. Volunteer acquisition and retention is a challenge; volunteer turnover rates are high. Identifying and implementing attractive incentives for the volunteers can improve the situation. Also, providing a clear market strategy and assigning definite responsibilities motivates volunteer engagement. The financial situation can be further enhanced by cooperating with partners for funding. The social mission of the case businesses can be used to acquire philanthropic investments or to obtain funding from businesses whose CSR strategy benefits from supporting the case businesses. Collaboration with organisations that can use the unsold surplus food represent another recommendation to further reduce food waste and ensure the most efficient use of resources.

The case businesses would benefit from policies that facilitate the acquisition of surplus food. Prohibiting the disposal of surplus food by retailers and restaurants or making it more expensive could encourage supermarkets and food service businesses to cooperate with the case businesses for the redistribution of their surplus food. Exemptions from business rates or taxes represent further policies that can support the case businesses. Surplus food has a low profit margin while its sale provides access to cheap food and reduces the pressing issue of food waste. Hence, councils could be encouraged to exempt businesses selling surplus food from certain costs. To foster the development of such policies and legislations, the case businesses could interact with councils, policymakers and political as well as other organisations supporting the same values.

Another change that could be fostered to reduce food waste and to change consumer behaviour is the elimination of the 'best before' date. The 'best before' date often is misinterpreted resulting in surplus food and food waste (Deloitte 2014; European Commission 2015) (see 2.2.1). On the one hand, consumers perceive food that has passed its 'best before' date negatively. Hence the elimination of the 'best before' date could enhance the sale of surplus food via the surplus supermarkets. On the other hand, retailers might discard less products, which could reduce the supply of surplus food and thus harm customer acquisition by the surplus supermarkets. Nevertheless, it can be assumed that

less food would be wasted, meaning the social mission of businesses selling surplus food would be supported. Another opportunity to overcome consumers' misperception of the 'best before' date is the introduction of a label explaining that products can be safely consumed after the 'best before' date has passed. Too Good To Go has initiated such a label ('oft laenger gut'), which is applied by several producers and retailers (Too Good To Go 2020). Thus, the company aims to motivate consumers to not rely on the 'best before' date and to use their senses when evaluating food quality and safety. As the elimination of the 'best before' date, the introduction of a label to explain that a product can be consumed beyond the 'best before' date could have an ambiguous impact on businesses selling surplus food.

At the time of this research the case businesses had only existed for two to three years and thus were still at an initial stage. However, they managed to reduce food waste and foster degrowth while developing towards profitability. Unfortunately, Niftie's had to cease operations, but other businesses selling surplus food can learn from Niftie's failure. The recommendations presented above are intended to further enhance the sale of surplus food so that more food waste and resource consumption can be reduced. Limitations of this study and suggestions for further research are presented in the following section.

7.5 Limitations and further research

This study provided new knowledge and revealed how businesses selling surplus food commercially can be adopted by consumers and reduce food waste in Denmark and the UK. While this insight is valuable, this study has limitations and further research is needed to advance sustainability.

In this study, only two business models selling surplus food in two countries were investigated. Other forms of selling surplus food or similar business models in other countries have not been researched. Therefore, this research is context-specific and the transferability of the results to another context, such as another business or another, for instance not Western, country is limited. Moreover, the findings are based on self-reported consumer data. With further resources this research could have been enhanced by additionally accompanying consumers during their day and observing their self-reported behaviours. This evidence could have improved the construct validity of this study.

Future research could investigate further business models selling surplus food in other countries. In addition, consumers could be observed at several times over several days, especially before, during and after their shopping, or asked to write a diary about their shopping and related behaviours to reveal behaviours participants do not report. Moreover, it could be examined how the conceptual framework explaining the adoption of the case businesses and food waste reduction (6.2, Figure 6.1) would need to be adopted for other business models redistributing surplus food. Longitudinal research would be worthwhile to understand how consumer behaviour, business development and the environmental context are changing over time. Questions to consider hereby are whether and why consumers continue buying surplus food, if their purchases of surplus food increase or decrease or if they stop after a while and fall back into their original or new habits. Regarding business development over time, it would be interesting to see how businesses selling surplus food are developing over several years and how that affects their suppliers and other businesses in the area. Are further social enterprises attracted by the presence of businesses selling surplus food? Does the number of businesses selling surplus food in a certain location increase? Does the number of initiatives fostering sustainability increase? How do regular retailers perceive and react to this development? Do more regular retailers and restaurants sell their surplus food over the years? Another interesting question for future research would be whether (and to which extent) consumers who buy surplus food also adopt further environmental behaviours and sustainable lifestyles. By investigating

those questions knowledge would be gained that can be applied to foster sustainable development.

A radical lifestyle change is needed to keep the temperature rise below 1.5 degrees Celsius and to thus avoid the destruction of our ecosystem (IPCC 2018; Institute for Global Environmental Strategies, Aalto University and D-mat Ltd. 2019). Resources need to be used more efficiently, and therefore further research is also needed to investigate how similar pro-environmental concepts that enable a sustainable lifestyle, such as sharing goods, buying second-hand, living in shared-housing or using public transport, can be promoted and scaled.

7.6 Summary

The chapter provided an overview of this research investigating businesses selling surplus food commercially to consumers as potential solutions to food waste. The urgency and scope of the issue of food waste and gaps in knowledge motivated this study. The thesis outlined existing knowledge regarding food waste as a global issue and food waste at the end of the supply chain in Europe, in particular. Literature considering consumer behaviour and concepts to reduce food waste was reviewed revealing that businesses selling surplus food commercially remained under-investigated. The research approach and the data collection and analysis processes conducted to investigate these potential solutions to food waste were described. The results were referred to the research objectives and discussed in relation to the existing literature. Thus, the research question ('How can businesses selling surplus food commercially be adopted by consumers and reduce food waste in Denmark and the UK?') was answered and contributions to theory and practice made.

The journey from identifying businesses selling surplus food commercially as potential solutions to food waste to answering the research question was summarised. The key contributions of this research were highlighted and demonstrate the new knowledge gained. Recommendations for practice were outlined; limitations to the study and suggestions for further research were explained. The list of references and appendices follow this last chapter.

List of references

- Alexander, C. and Smaje, C. (2008) 'Surplus Retail Food Redistribution: An Analysis of a Third Sector Model'. *Resources, Conservation and Recycling* 52 (11), 1290–1298
- Almutairi, A.F., Gardner, G.E., and McCarthy, A. (2014) 'Practical Guidance for the Use of a Pattern-Matching Technique in Case-Study Research: A Case Presentation'. *Nursing and Health Sciences* 16 (2), 239–244
- Approved Food (2019) *The UK's Best Selection of Clearance Food & Drink at Discount Prices* [online] available from <https://store.approvedfood.co.uk/page?name=about_us> [20 May 2019]
- Approved Food (2016) *About Us* [online] available from <http://store.approvedfood.co.uk/page?name=about_us> [7 December 2016]
- Ares, E. and Bolton, P. (2002) *Waste Incineration*. London: House of Commons Library
- Aschemann-Witzel, J., Jensen, J.H., Jensen, M.H., and Kulikovskaja, V. (2017) 'Consumer Behaviour towards Price-Reduced Suboptimal Foods in the Supermarket and the Relation to Food Waste in Households'. *Appetite* 116, 246–258
- Babbie, E. (2017) *The Practice of Social Research*. 14th edn. Boston: Cengage Learning
- Baglioni, S., de Pieri, B., and Tallarico, T. (2016) 'Surplus Food Recovery and Food Aid: The Pivotal Role of Non-Profit Organisations. Insights From Italy and Germany'. *Voluntas* 1–21
- Battisby, A. (2019) *The Latest UK Social Media Statistics for 2019* [online] available from <<https://www.avocadosocial.com/latest-social-media-statistics-and-demographics-for-the-uk-in-2019/>> [22 May 2019]
- Bazeley, P. and Jackson, K. (2013) *Qualitative Data Analysis with NVivo*. 2nd edn. Los Angeles: SAGE Publications Inc
- BBC News (1998) 'Scares Prompt Food Agency Move'. *BBC News* [online] 14 January. available from <http://news.bbc.co.uk/1/hi/special_report/1998/food_agency/47368.stm>
- Berg, A. and Hukkinen, J.I. (2011) 'The Paradox of Growth Critique: Narrative Analysis of the Finnish Sustainable Consumption and Production Debate'. *Ecological Economics* [online] 72, 151–160. available from <<http://dx.doi.org/10.1016/j.ecolecon.2011.09.024>>
- Bhatt, S., Lee, J., Deutsch, J., Hasan Ayaz, |, Fulton, B., and Suri, | Rajneesh (2018) 'From Food Waste to Value-added Surplus Products (VASP): Consumer Acceptance of a Novel Food Product Category'. *Consumer Behaviour* 17, 57–63

- Bilkent, G.G., Belk, R.W., and Lascu, D.-N. (1993) 'The Development of Consumer Desire in Marketizing and Developing Economies: The Cases of Romania and Turkey'. *Advances in Consumer Research* [online] 20, 102–107. available from <<http://www.acrwebsite.org/search/view-conference-proceedings.aspx?Id=7421>>
- Bilska, B., Wrzosek, M., Kolozyn-Krajewska, D., and Krajewski, K. (2016) 'Risk of Food Losses and Potential of Food Recovery for Social Purposes'. *Waste Management* 52, 269–277
- Birmingham City Council (2019) *Birmingham Update*. Birmingham
- Bloom, P.N. and Chatterji, A.K. (2009) 'Scaling Social Entrepreneurial Impact'. *California Management Review* 51 (3), 114–133
- Boulstridge, E. and Carrigan, M. (2000) 'Do Consumers Really Care about Corporate Responsibility? Highlighting the Attitude-Behaviour Gap'. *Journal of Communication Management* [online] 4 (4), 355–363. available from <http://oro.open.ac.uk/15171/1/Boulstridge_and_Carrigan_Jnl_of_Communication_2000.doc> DOI: 10.1108/eb023532
- Bourgeois, P.L. and Rosenthal, S.B. (1983) *Thematic Studies in Phenomenology and Pragmatism*. Amsterdam: John Benjamins Publishing Company
- Boyatzis, R.E. (1998) *Transforming Qualitative Information*. Thousand Oaks: SAGE Publications Inc.
- Braun, V. and Clarke, V. (2016) '(Mis)Conceptualising Themes, Thematic Analysis, and Other Problems with Fugard and Potts' (2015) Sample-Size Tool for Thematic Analysis'. *International Journal of Social Research Methodology* 19 (6), 739–743
- Braun, V. and Clarke, V. (2006) 'Using Thematic Analysis in Psychology'. *Qualitative Research in Psychology* 3 (2), 77–101
- Bräutigam, K.R., Jörissen, J., and Priefer, C. (2014) 'The Extent of Food Waste Generation across EU-27: Different Calculation Methods and the Reliability of Their Results'. *Waste Management and Research* 32 (8), 683–694
- Brinkhoff, T. (2017) *Dover* [online] available from <<http://www.citypopulation.info/php/uk-england-southeastengland.php?cityid=E34004398>> [17 April 2018]
- Bromley, S., Rogers, D., and Bajzelj, B. (2016) *WP4 Evaluation Report. WP4 – Testing Social Innovation Evaluation Report*. FUSION [online] available from <http://www.eu-fusions.org/phocadownload/FUSIONS_Feasibility_studies_evaluation_report.pdf>
- Brown, B.J. and Baker, S. (2007) *Philosophies of Research Into Higher Education*. 1st edn. New York: Continuum International Publishing Group
- Brown, E., Dury, S., and Holdsworth, M. (2009) 'Motivations of Consumers That Use Local, Organic Fruit and Vegetable Box Schemes in Central England and Southern France'. *Appetite* 53 (2), 183–188

- Brunso, K., Grunert, K.G., and Bredahl, L. (1996) *An Analysis of National and Crossnational Consumer Segments Using the Food-Related Lifestyle Instrument in Denmark, France, Germany and Great Britain*. 35. Aarhus
- Bryman, A. and Bell, E. (2011) *Business Research Methods*. 3rd edn. Oxford, New York: Oxford University Press
- Burke, R.R., Harlam, B.A., Kahn, B.E., and Lodish, L.M. (1992) 'Comparing Dynamic Consumer Choice in Real and Computer-Simulated Environments'. *Journal of Consumer Research* 19, 71–82
- Burr, V. (2015) *Social Constructionism*. Hove: Routledge
- Caraher, M. and Furey, S. (2017) *Is It Appropriate to Use Surplus Food to Feed People in Hunger? Short-Term Band-Aid to More Deep-Rooted Problems of Poverty*. Food Research Collaboration Policy Brief [online] available from <<https://foodresearch.org.uk/publications/is-it-appropriate-to-use-surplus-food-to-feed-people-in-hunger/>>
- Carrigan, M. (2017) 'Revisiting "The Myth of the Ethical Consumer": Why Are We Still Not Ethical Shoppers?' *Journal of Consumer Ethics* 1 (1), 12–21
- Carrigan, M., Moraes, C., and Leek, S. (2011) 'Fostering Responsible Communities: A Community Social Marketing Approach to Sustainable Living'. *Journal of Business Ethics* 100 (3), 515–534
- Carrigan, M., Szmigin, I., and Leek, S. (2006) 'Managing Routine Food Choices in UK Families: The Role of Convenience Consumption'. *Appetite* 47 (13), 372–383
- Carrington, M.J., Neville, B.A., and Whitwell, G.J. (2014) 'Lost in Translation: Exploring the Ethical Consumer Intention-Behavior Gap'. *Journal of Business Research* [online] 67 (1), 2759–2767. available from <<http://dx.doi.org/10.1016/j.jbusres.2012.09.022>>
- Carrington, M.J., Zwick, D., and Neville, B. (2015) 'The Ideology of the Ethical Consumption Gap'. *Marketing Theory* 1–18
- Carson, D.J., Gilmore, A., Perry, C., and Gronhaug, K. (2001) *Qualitative Marketing Research*. London: Sage Publications
- Caruana, R., Carrington, M.J., and Chatzidakis, A. (2016) 'Beyond the Attitude-Behaviour Gap: Novel Perspectives in Consumer Ethics: Introduction to the Thematic Symposium'. *Journal of Business Ethics* 136 (2), 215–218
- Chalak, A., Abou-Daher, C., Chaaban, J., and Abiad, M.G. (2016) 'The Global Economic and Regulatory Determinants of Household Food Waste Generation: A Cross-Country Analysis'. *Waste Management* [online] 48, 418–422. available from <<http://dx.doi.org/10.1016/j.wasman.2015.11.040>>

- Charlebois, S., Creedy, A., and Von Massow, M. (2015) 'Back of House – Focused Study on Food Waste in Fine Dining: The Case of Delish Restaurants'. *International Journal of Cultur, Tourism and Hospitality Research* 9 (3), 278–291
- Chrzanowska, J. (2002) *Interviewing Groups and Individuals in Qualitative Market Research*. 2nd edn. London: SAGE Publications
- Churchill, N.C. and Lewis, V.L. (1983) 'The Five Stages of Small Business Growth'. *Harvard Business Review* [online] available from <<https://hbr.org/1983/05/the-five-stages-of-small-business-growth>>
- Cicatiello, C., Franco, S., Pancino, B., and Blasi, E. (2016) 'The Value of Food Waste: An Exploratory Study on Retailing'. *Journal of Retailing and Consumer Services* 30, 96–104
- Cicatiello, C., Franco, S., Pancino, B., Blasi, E., and Falasconi, L. (2017) 'The Dark Side of Retail Food Waste: Evidences from in-Store Data'. *Resources, Conservation and Recycling* 125, 273–281
- Clippinger, D. (2018) *Business Research Reporting*. New York: Business Expert Press
- Cockroft, S. (2016) 'The Shop Where You Can Feed a Family for £3.50 a Week: Pop-up Grocery Store Taking on the Pound Stores by Selling Food for as Little as 10p'. *Daily Mail* [online] 30 June. available from <<https://www.dailymail.co.uk/news/article-3667684/The-shop-feed-family-MONTH-3-50-Pop-grocery-store-taking-pound-stores-selling-food-little-10p.html>>
- Cole, R. (2017) *Six Apps Taking the Fight to Food Waste* [online] available from <<https://resource.co/article/six-apps-taking-fight-food-waste-11587>> [20 May 2019]
- Company Shop Ltd. (2016a) *Welcome to Company Shop* [online] available from <<http://www.companyshop.ltd.uk/>> [7 December 2016]
- Company Shop Ltd. (2016b) *What Is Community Shop?* [online] available from <<http://community-shop.co.uk/community-shop/what-is-community-shop/>> [7 December 2016]
- Connelly, L.M. and Peltzer, J.N. (2016) 'Underdeveloped Themes in Qualitative Research: Relationship with Interviews and Analysis'. *Clinical Nurse Specialist* 30 (1), 51–57
- Consumers International (2012) *The Relationship between Supermarkets and Suppliers: What Are the Implications for Consumers? Summary of the main report*. [online] available from <[http://www.europe-economics.com/publications/the_relationship_between_supermarkets_and_suppliers.p](http://www.europe-economics.com/publications/the_relationship_between_supermarkets_and_suppliers.pdf)
<http://www.europe-economics.com/publications/the_relationship_between_supermarkets_and_suppliers.p
>df>
- Corley, K.G. and Gioia, D.A. (2011) 'Building Theory About Theory Building: What Constitutes a Theoretical Contribution?' *Academy of Management Review* 36 (1), 12–32

- Cornelius, N., Todres, M., Janjuha-Jivraj, S., Woods, A., and Wallace, J. (2008) 'Corporate Social Responsibility and the Social Enterprise'. *Journal of Business Ethics* 81, 355–370
- Coventry University (2009) *Principles and Standards of Conduct on the Governance of Research* [online] available from <<http://www.coventry.ac.uk/life-on-campus/the-university/key-information/ethics/>>
- Cox, E. (2012) *Retail Analytics: The Secret Weapon*. Hoboken: John Wiley & Sons, Incorporated
- Creswell, J.W. (2007) 'Designing a Qualitative Study'. in *Qualitative Inquiry and Research Design: Choosing among Five Approaches*. 2nd edn. Thousand Oaks, CA: Sage Publications Inc., 35–41
- Crunchbase Inc. (2019) *Too Good To Go* [online] available from <https://www.crunchbase.com/search/funding_rounds/field/organizations/funding_total/too-good-to-go> [13 February 2019]
- DanChurchAid (2016) *Wefood* [online] available from <<https://donate.danchurchaid.org/wefood>> [7 December 2016]
- DanChurchAid (2020) *Wefood* [online] available from <<https://www.danchurchaid.org/join-us/wefood>> [12 May 2020]
- Dani, S. (2015) *Food Supply Chain Management and Logistics: From Farm to Fork*. London: Kogan Page
- Dant, T. (1999) *Material Culture in the Social World*. Buckingham: Open University Press
- Davies, A.R., Edwards, F., Marovelli, B., Morrow, O., Rut, M., and Weymes, M. (2017) 'Making Visible: Interrogating the Performance of Food Sharing across 100 Urban Areas'. *Geoforum* 86, 136–149
- DEFRA (2015) 'Food Statistics Pocketbook 2015'. *Department for Environment, Food and Rural Affairs* [online] 15. available from <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/423616/foodpocketbook-2014report-23apr15.pdf>
- Deloitte (2018a) *Too Good To Go ApS - Annual Report 2017* [online] Copenhagen. available from <[https://datacvr.virk.dk/data/visenhed?enhedstype=virksomhed&id=37561304&soeg=Too Good To Go&type=Alle&language=en-gb](https://datacvr.virk.dk/data/visenhed?enhedstype=virksomhed&id=37561304&soeg=Too%20Good%20To%20Go&type=Alle&language=en-gb)>
- Deloitte (2018b) *Too Good To Go Holding ApS - Annual Report 2017* [online] Copenhagen. available from <[https://datacvr.virk.dk/data/visenhed?enhedstype=virksomhed&id=37535699&soeg=Too Good To Go&type=Alle&language=en-gb](https://datacvr.virk.dk/data/visenhed?enhedstype=virksomhed&id=37535699&soeg=Too%20Good%20To%20Go&type=Alle&language=en-gb)>

- Deloitte (2014) *Comparative Study on EU Member States ' Legislation and Practices on Food Donation Executive Summary June 2014* [online] available from <http://ec.europa.eu/environment/eussd/pdf/bio_foodwaste_report.pdf%255Cnhttp://books.google.com/books?id=LQt2AwAAQBAJ&pgis=1%255Cnhttp://www.parliament.uk/documents/lords-committees/eu-sub-com-d/food-waste-prevention/154.pdf%255Cnhttp://www.oecd-ilibrary.org/do>
- Demaria, F., Schneider, F., Sekulova, F., and Martinez-Alier, J. (2013) 'What Is Degrowth? From an Activist Slogan to a Social Movement'. *Environmental Values* 22 (2), 191–215
- Devin, B. and Richards, C. (2018) 'Food Waste, Power, and Corporate Social Responsibility in the Australian Food Supply Chain'. *Journal of Business Ethics* 150 (1), 199–210
- Doherty, B., Haugh, H., and Lyon, F. (2014) 'Social Enterprises as Hybrid Organizations: A Review and Research Agenda'. *International Journal of Management Reviews* 16 (4), 417–436
- Donoghue, S. (2000) 'Projective Techniques in Consumer Research'. *Journal of Family Ecology and Consumer Sciences* [online] 28 (1), 47–53. available from <<http://www.ajol.info/index.php/jfecscs/article/view/52784>>
- Dover District Council (2018) *Dover District Overview* [online] available from <<https://www.dover.gov.uk/Corporate-Information/Facts-and-Figures/Dover-District-Overview.aspx>> [17 April 2018]
- Dover District Council (2017a) *State of the District 2017 - Population Profile* [online] available from <<https://www.dover.gov.uk/Corporate-Information/Facts-and-Figures/PDF/State-of-the-District-2017-Population-Profile.pdf>>
- Dover District Council (2017b) *State of the District 2017 - Economy, Business and Employment* [online] available from <www.dover.gov.uk/Corporate-Information/PDF/Corporate-Plan-2016.pdf>
- Duell, M. (2017) '10p Supermarket That Sells "damaged" Food and Groceries Nearing Their Best-before-Dates Goes National with an Online Store Where Savvy Shoppers Can Fill Their Cupboards for a Fiver'. *Daily Mail* [online] 10 January. available from <<https://www.dailymail.co.uk/news/article-4105338/10p-supermarket-selling-damaged-food-groceries-nearing-best-date-goes-national-online-store-savvy-shoppers-cupboards-fiver.html>>
- Ellen MacArthur Foundation (2019) *Cities and Circular Economy for Food* [online] available from <https://www.ellenmacarthurfoundation.org/assets/downloads/Cities-and-Circular-Economy-for-Food_280119.pdf%0Ahttps://www.ellenmacarthurfoundation.org/assets/downloads/Cities-and-Circular-Economy-for-Food_EMF.pdf>

- Elliott, R. and Timulak, L. (2005) 'Descriptive and Interpretive Approaches to Qualitative Research'. in *A Handbook of Research Methods for Clinical and Health Psychology* [online] 147–157. available from <http://www.google.co.uk/books?hl=en&lr=&id=kmZ3Yt5pY0YC&pgis=1>
- EU Fusions (2016) *Social Innovation Projects* [online] available from <https://www.eu-fusions.org/index.php/social-innovations/social-innovation-inventory/213-sii-european-map> [20 May 2019]
- European Commission (2018) *Date Marking and Food Waste* [online] available from https://ec.europa.eu/food/safety/food_waste/eu_actions/date_marking_en [6 February 2019]
- European Commission (2015) COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS *Closing the Loop - An EU Action Plan for the Circular Economy*. Brussels: EUROPEAN COMMISSION
- European Commission (2011) COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS *Roadmap to a Resource Efficient Europe*. Brussels: EUROPEAN COMMISSION
- Eurostat (2017) *Self-Perceived Health Statistics* [online] available from http://ec.europa.eu/eurostat/statistics-explained/index.php?title=Self-perceived_health_statistics [7 June 2018]
- Eurostat (2014) *Tobacco Consumption Statistics* [online] available from http://ec.europa.eu/eurostat/statistics-explained/index.php/Tobacco_consumption_statistics [7 June 2018]
- Evans, A.B. and Miele, M. (2012) 'Between Food and Flesh: How Animals Are Made to Matter (and Not Matter) within Food Consumption Practices'. *Environment and Planning D: Society and Space* 30, 298–314
- Evans, D. (2014) *Food Waste. Home Consumption, Material Culture and Everyday Life*. London, New York: Bloomsbury Publishing Plc
- Evans, D. (2011) 'Blaming the Consumer Once Again the Social and Material Contexts of Everyday Food Waste Practices in Some English Households'. *Critical Public Health* 21 (4), 429–440
- Evans, D., Campbell, H., and Murcott, A. (2013) 'A Brief Pre-History of Food Waste and the Social Sciences'. in *Waste Matters: New Perspectives of Food and Society*. ed. by Evans, D., Campbell, H., and Murcott, A. John Wiley & Sons, 5–26

- Evans, D., Welch, D., Swaffield, J. (2017) 'Constructing and mobilizing "the consumer": Responsibility, consumption and the politics of sustainability'. *Environment and Planning A* 49 (6), 1396-1412
- FAO (2013) *Food Wastage Footprint. Impacts on Natural Resources. Summary Report* [online] available from <<http://www.fao.org/docrep/018/i3347e/i3347e.pdf>>
- FAO (2011) *Global Food Losses and Food Waste* [online] Düsseldorf. available from <<http://www.fao.org/docrep/014/mb060e/mb060e00.pdf>>
- FAO, IFAD, and WFP (2012) *The State of Food Insecurity in the World*. Rome: FAO
- FAO; UNEP, and WRAP (2014) *Prevention and Reduction of Food and Drink Waste in Businesses and Households - Guidance for governments, local authorities, businesses and other organisations, Version 1.0*. Paris: UNEP
- Farr-Wharton, G., Choi, J.H.-J., and Foth, M. (2014) 'Food Talks Back : Exploring the Role of Mobile Applications in Reducing Domestic Food Wastage'. *Proceedings of the 26th Australian Computer-Human Interaction Conference* 352–361
- Feldman, S. (2019) *The Happiest Countries in the World* [online] available from <<https://www.statista.com/chart/17428/happiest-countries-in-the-world/>> [5 June 2019]
- Fell, D., Austin, A., Kivinen, E., and Wilkins, C. (2009) *The diffusion of environmental behaviours; the role of influential individuals in social networks. Report 1: Key findings. A report to the Department for Environment, Food and Rural Affairs* . Brook Lyndhurst. London: Defra
- Filimonau, V. and Gherbin, A. (2017) 'An Exploratory Study of Food Waste Management Practices in the UK Grocery Retail Sector'. *Journal of Cleaner Production* 167, 1184–1194
- Firat, A., Kutucuoğlu, K., Arıkan Saltık, I., and Tuncel, O. (2013) 'Consumption, Consumer Culture and Consumer Socialization'. *Journal of Community Positive Practices* 13 (1), 182–203
- Fisher, R. and Ury, W. (1991) *Getting to Yes. Negotiating Agreement Without Giving In*. 2nd edn. Boston, MA: Houghton Mifflin & Co.
- Fitzpatrick, J., Davies, C., Hart, S., McCarthy, K., Monaghan, P., Ritchie, M., Simpson, D., Smith, A., Smith, T., Evans, L., Harris, V., and Butts, S. (2017) *Environment, Food and Rural Affairs Oral evidence: Food waste, HC 429*. London: House of Commons
- Flyvbjerg, B. (2006) 'Five Misunderstandings About Case-Study Research'. *Qualitative Inquiry* 12 (2), 219–245
- Food Ethics Council (2009) *Food and Fairness Inquiry. Dossier 3. Fair say*. Brighton: Food Ethics Council
- Foodsharing.de (2019) *Foodsharing* [online] available from <<https://foodsharing.de>> [18 October 2019]

- FoodWIN (2017) *Network* [online] available from <<https://www.foodwin.org/network/#inno>> [22 March 2017]
- Ganglbauer, E., Fitzpatrick, G., Subasi, Ö., and Güldenpfennig, F. (2014) 'Think Globally, Act Locally: A Case Study of a Free Food Sharing Community and Social Networking'. in *Proceedings of the 17th ACM Conference on Computer Supported Cooperative Work & Social Computing*. held 2014. 911–921
- Garrone, P., Melacini, M., and Perego, A. (2014) 'Surplus Food Recovery and Donation in Italy: The Upstream Process'. *British Food Journal* 116 (9), 1460–1477
- Garthwaite, K. (2016) 'Stigma, Shame and "People like Us": An Ethnographic Study of Foodbank Use in the UK'. *Journal of Poverty and Social Justice* 24 (3), 277–289
- Gibbs, D. and O'Neill, K. (2016) 'Future Green Economies and Regional Development: A Research Agenda'. *Regional Studies* [online] available from <<http://rsa.tandfonline.com/action/journalInformation?journalCode=cres20>>. DOI: 10.1080/00343404.2016.1255719
- Gil, N. (2018) *The Food Waste-Saving Apps That Could Revolutionise Your Dinner & Save You Money* [online] available from <<https://www.refinery29.com/en-gb/2018/05/198051/food-waste-app-save-money>> [20 May 2019]
- Gioia, D.A., Corley, K.G., and Hamilton, A.L. (2013) 'Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology'. *Organizational Research Methods* 1 (16), 15–31
- Glanfield, E. (2016) "I Could Stock My Food Cupboard for a Fiver!" Shoppers Delighted as 10p Supermarket Officially Opens Its Doors Promising to Cut Your Shopping Bill by Two Thirds'. *Daily Mail* [online] 5 July. available from <<https://www.dailymail.co.uk/news/article-3674712/Forget-pound-stores-10p-supermarket-Shoppers-flock-store-weekly-groceries-just-3-50-officially-opens-doors.html>>
- Glaser, B.G. (2002) 'Conceptualization: On Theory and Theorizing Using Grounded Theory'. *International Journal of Qualitative Methods* 1 (2), 23–38
- Global Footprint Network (2016) *World Footprint* [online] available from <http://www.footprintnetwork.org/ar/index.php/GFN/page/world_footprint/> [1 May 2016]
- Göbel, C., Langen, N., Blumenthal, A., Teitscheid, P., and Ritter, G. (2015) 'Cutting Food Waste through Cooperation along the Food Supply Chain'. *Sustainability (Switzerland)* 7 (2), 1429–1445
- Goldsmith, R.E. (2012) 'New Developments in the Diffusion of Innovations'. in *Handbook of Developments in Consumer Behaviour*. ed. by Wells, V. and Foxall, G. Edward Elgar Publishing Ltd, 246–284

- Gollnhofer, J.F. and Schouten, J.W. (2017) 'Complementing the Dominant Social Paradigm with Sustainability'. *Journal of Macromarketing* 37 (2), 143–152
- Google (2018) *Google Maps* [online] available from <<https://www.google.com/maps>> [7 June 2018]
- Gordon, A. (2017) '10p "social Supermarket" Selling Groceries Nearing Their Best before Dates Has Saved 120 Tons of Food Waste in Just Three Weeks since Launching an Online Store'. *Daily Mail* [online] 3 February. available from <<https://www.dailymail.co.uk/news/article-4188660/Social-supermarket-saves-120-tons-food-waste.html>>
- Graham-Rowe, E., Jessop, D.C., and Sparks, P. (2014) 'Identifying Motivations and Barriers to Minimising Household Food Waste'. *Resources, Conservation and Recycling* 84, 15–23
- Grant, S. (2008) 'Contextualising Social Enterprise in New Zealand'. *Social Enterprise Journal* 4 (1), 9–23
- Greenhalgh, T., Robert, G., Bate, P., Macfarlane, F., Kyriakidou, O., and Donaldson, L. (2007) *Diffusion of Innovations in Health Service Organisations: A Systematic Literature Review* [online] 1st edn. John Wiley & Sons, Incorporated. available from <<https://ebookcentral.proquest.com/lib/coventry/detail.action?docID=351070>>
- Green Key (2018) *Too good to go opens a store in Frederiksberg* [online] available from <<https://www.greenkey.dk/en/news/from-denmark/2018/08/too-good-to-go-opens-a-store-in-frederiksberg/>> [9 June 2020]
- Grewal, D., Krishnan, R., Levy, M., and Munger, J. (2010) 'Retail Success and Key Drivers'. in *Retailing in the 21st Century (Second Edition): Current and Future Trends*. Springer Berlin Heidelberg, 15–30
- Guest, G., Bunce, A., and Johnson, L. (2006) 'How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability'. *Field Methods* 18 (1), 59–82
- Hair, J.F., Celsi, M., Money, A., Samouel, P., and Page, M.J. (2016) *Essentials of Business Research Methods*. 3rd edn. New York: Routledge
- Halloran, A. and Magid, J. (2014) 'Addressing Food Waste Reduction in Denmark'. *JOURNAL OF FOOD POLICY* [online] 49 (November), 294–301. available from <<http://dx.doi.org/10.1016/j.foodpol.2014.09.005>>
- Hantula, D.A. (2012) 'Consumers Are Foragers, Not Rational Actors: Towards a Behavioral Ecology of Consumer Choice'. in *Handbook of Developments in Consumer Behaviour*. ed. by Wells, V. and Foxall, G. Edward Elgar Publishing Ltd, 549–578
- Hargreaves, T. (2011) 'Practice-Ing Behaviour Change: Applying Social Practice Theory to pro-Environmental Behaviour Change'. *Journal of Consumer Culture* 11 (1), 79–99

- Hasselgren, B. and Beach, D. (1997) 'Phenomenography — a "Good-for-nothing Brother" of Phenomenology? Outline of an Analysis'. *Higher Education Research & Development* 16 (2), 191–202
- Hawkins, G. (2006) *The Ethics of Waste: How We Relate to Rubbish*. Oxford, UK: Rowman & Littlefield Publishers, Inc.
- Hebrok, M. and Boks, C. (2017) 'Household Food Waste: Drivers and Potential Intervention Points for Design – An Extensive Review'. *Journal of Cleaner Production* 151, 380–392
- Hebrok, M. and Heidenstrøm, N. (2019) 'Contextualising Food Waste Prevention - Decisive Moments within Everyday Practices'. *Journal of Cleaner Production* 210, 1435–1448
- Henige, D. (2008) 'Are You Getting Enough Culture? Moving from Social to Cultural History in Eighteenth-Century Britain'. *History Compass* 6 (1), 91–108
- Hill O'Connor, C. and Baker, R. (2017) 'Working with and for Social Enterprises: The Role of the Volunteer Ethnographer'. *Social Enterprise Journal* 13 (2), 180–193
- HLPE (2014) *Food Losses and Waste in the Context of Sustainable Food Systems. A Report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security*. Rome: HLPE
- Hofstede Insights (2019) *Hofstede Insights* [online] available from <<https://www.hofstede-insights.com/product/compare-countries/>> [12 March 2019]
- Holtan, A., Strandbu, A., and Eriksen, S.H. (2014) 'When Emotions Count in Construction of Interview Data'. *Nordic Social Work Research* 4 (2), 99–112
- Horrigan-Kelly, M., Millar, M., and Dowling, M. (2016) 'Understanding the Key Tenets of Heidegger's Philosophy for Interpretive Phenomenological Research'. *International Journal of Qualitative Methods* 15 (1), 1–8
- Hyett, N., Kenny, A., and Dickson-Swift, V. (2014) 'Methodology or Method a Critical Review of Qualitative Case Study Reports'. *International Journal of Qualitative Studies on Health and Well-Being* 9, 1–12
- ICO (2016) *Key Definitions of the Data Protection Act* [online] available from <<https://ico.org.uk/for-organisations/guide-to-data-protection/key-definitions/>> [12 December 2016]
- Innovation Fund Denmark (2017) *Popular App Tackles Food Waste in Denmark* [online] available from <<https://stateofgreen.com/en/partners/innovation-fund-denmark-innovationsfonden/news/popular-app-tackles-food-waste-in-denmark/>> [27 June 2019]
- Institute for Global Environmental Strategies, Aalto University and D-mat ltd. (2019) *1.5-Degree Lifestyles: Targets and Options for Reducing Lifestyle Carbon Footprints. Technical Report*. Hayama, Japan: Institute for Global Environmental Strategies

- Institute of Food Technologists (2015) 'The Difference between "Use-By" "Sell-By" and "Best-By" Dates'. *Science Daily* [online] 15 April. available from <<https://www.sciencedaily.com/releases/2015/04/150415203336.htm>>
- International SOS (2016) *Travel Risk Map 2017* [online] available from <<https://www.internationalsos.com/risk-outlook>> [12 December 2016]
- IPCC (2018) *Special Report: Global Warming of 1.5 °C* [online] available from <<https://www.ipcc.ch/sr15/>> [28 January 2019]
- Iyengar, S.S. and Lepper, M.R. (2000) 'When Choice Is Demotivating: Can One Desire Too Much of a Good Thing?' *Journal of Personality and Social Psychology* 79 (6), 995–1006
- Jackson, P. and Viehoff, V. (2016) 'Reframing Convenience Food'. *Appetite* 98, 1–11
- Jackson, T. (2005) *Motivating Sustainable Consumption - a Review of Evidence on Consumer Behaviour and Behavioural Change*. Surrey: Centre for Environmental Strategy, University of Surrey
- Jackson, T. and Papathanasopoulou, E. (2008) 'Luxury or "Lock-in"? An Exploration of Unsustainable Consumption in the UK: 1968 to 2000'. *Ecological Economics* [online] 68 (1–2), 80–95. available from <<http://dx.doi.org/10.1016/j.ecolecon.2008.01.026>>
- Johanisova, N., Crabtree, T., and Fraňková, E. (2013) 'Social Enterprises and Non-Market Capitals: A Path to Degrowth?' *Journal of Cleaner Production* 38 (January), 7–16
- Karma (2019) *View What Is Currently Selling for ½ Price near You* [online] available from <<https://karma.life/>> [20 May 2019]
- Kati, S. (2010) *Retail Selling Skills*. 1st edn. Mumbai: Himalaya Publishing House
- Kharuhayothin, T. and Kerrane, B. (2018) 'Learning from the Past? An Exploratory Study of Familial Food Socialization Processes Using the Lens of Emotional Reflexivity'. *European Journal of Marketing* 52 (12), 2312–2333
- Kneafsey, M., Cox, R., Holloway, L., Dowler, E., Venn, L., and Tuomainen, H. (2008) *Reconnecting Consumers, Producers and Food*. Oxford, New York: Berg
- Kneafsey, M., Dowler, E., Lambie-Mumford, H., Inman, A., and Collier, R. (2013) 'Consumers and Food Security: Uncertain or Empowered?' *Journal of Rural Studies* 29, 101–112
- Knowles, T., Moody, R., and McEachern, M.G. (2007) 'European Food Scares and Their Impact on EU Food Policy'. *British Food Journal* 109 (1), 43–67
- Kolandai-Matchett, K. (2009) 'Mediated Communication of "Sustainable Consumption" in the Alternative Media: A Case Study Exploring a Message Framing Strategy'. *International Journal of Consumer Studies* 33 (2), 113–125
- Lazell, J. (2016) 'Consumer Food Waste Behaviour in Universities: Sharing as a Means of Prevention'. *Journal of Consumer Behaviour* 15, 430–439

- Lebersorger, S. and Schneider, F. (2014) 'Food Loss Rates at the Food Retail, Influencing Factors and Reasons as a Basis for Waste Prevention Measures'. *Waste Management* [online] 34 (11), 1911–1919. available from <<http://dx.doi.org/10.1016/j.wasman.2014.06.013>>
- Lee, D.T.F., Woo, J., and Mackenzie, A.E. (2002) 'The Cultural Context of Adjusting to Nursing Home Life: Chinese Elders' Perspectives.' *The Gerontologist* 42 (5), 667–675
- Lienert, F. (2018) *Too Good To Go mit eigenem Laden - Dänemark macht es vor* [online] available from <<https://toogoodtogo.de/de/blog/too-good-to-go-mit-eigenem-laden-danemark-macht-es-vor>> [9 June 2020]
- Lim, W.M. (2017) 'Inside the Sustainable Consumption Theoretical Toolbox: Critical Concepts for Sustainability, Consumption, and Marketing'. *Journal of Business Research* [online] 78 (April 2016), 69–80. available from <<http://dx.doi.org/10.1016/j.jbusres.2017.05.001>>
- Lincoln, Y.S. and Guba, E.G. (1985) *Naturalistic Inquiry*. Newbury Park, CA: Sage Publications
- Loebnitz, N., Schuitema, G., and Grunert, K.G. (2015) 'Who Buys Oddly Shaped Food and Why? Impacts of Food Shape Abnormality and Organic Labeling on Purchase Intentions'. *Psychology and Marketing* 32 (4), 408–421
- Lorek, S. and Fuchs, D. (2013) 'Strong Sustainable Consumption Governance - Precondition for a Degrowth Path?' *Journal of Cleaner Production* [online] 38, 36–43. available from <<http://dx.doi.org/10.1016/j.jclepro.2011.08.008>>
- Lowe, S. (2016) *NCMP Results 2015/2016*. Birmingham: Birmingham City Council
- MarketLine (2015) *Food Retail in Denmark*. London: MarketLine
- Mason, M. (2010) 'Sample Size and Saturation in PhD Studies Using Qualitative Interviews.' *Forum: Qualitative Social Research* [online] 11 (3), 1–19. available from <<http://nbn-resolving.de/urn:nbn:de:0114-fqs100387>>
- Matondi, P.B., Havnevik, K., and Beyene, A. (eds.) (2011) *Biofuels, Land Grabbing and Food Security in Africa*. London: Zed Books Ltd
- McDonald, S., Oates, C.J., Thyne, M., Timmis, A.J., and Carlile, C. (2015) 'Flying in the Face of Environmental Concern: Why Green Consumers Continue to Fly'. *Journal of Marketing Management* 31 (13–14), 1503–1528
- Medina Munro, M. and Belanger, C. (2017) 'Analyzing External Environment Factors Affecting Social Enterprise Development'. *Social Enterprise Journal* 13 (1), 38–52
- Mena, C., Adenso-Diaz, B., and Yurt, O. (2011) 'The Causes of Food Waste in the Supplier-Retailer Interface: Evidences from the UK and Spain'. *Resources, Conservation and Recycling* 55, 648–658

- Merriam, S.B. (2009) *Qualitative Research. A Guide to Design and Implementation*. 3rd edn. San Francisco: Jossey-Bass
- Midgley, J.L. (2014) 'The Logics of Surplus Food Redistribution'. *Journal of Environmental Planning and Management* [online] 57 (12), 1872–1892. available from <<http://dx.doi.org/10.1080/09640568.2013.848192>>
- Miller, D., Jackson, P., Thrift, N., Holbrook, B., and Rowlands, M. (1998) *Shopping, Place and Identity*. Abingdon: Routledge
- Milne, R. (2013) 'Arbiters of Waste: Date Labels, the Consumer and Knowing Good, Safe Food'. in *Waste Matters: New Perspectives of Food and Society*. ed. by Evans, D., Campbell, H., and Murcott, A. John Wiley & Sons, 84–101
- Moisio, R., Arnould, E.J., and Price, L.L. (2004) 'Between Mothers and Markets: Constructing Family Identity through Homemade Food'. *Journal of Consumer Culture* 4 (3), 361–384
- Moizer, J. and Tracey, P. (2010) 'Strategy Making in Social Enterprise: The Role of Resource Allocation and Its Effects on Organizational Sustainability'. *Systems Research and Behavioral Science* [online] 27, 252–266. available from <www.interscience.wiley.com>
- Morse, J.M. (1994) 'Designing Funded Qualitative Research.' in *Handbook of Qualitative Research*. 2nd edn. ed. by Denzin, N.K. and Lincoln, Y.S. Thousand Oaks, CA: Sage Publications Inc., 220–235
- Mourad, M. (2016) 'Recycling, Recovering and Preventing "Food Waste": Competing Solutions for Food Systems Sustainability in the United States and France'. *Journal of Cleaner Production* 126, 461–477
- Murcott, A. (1983) 'Cooking and the Cooked: Notes on the Domestic Preparation of Meals'. in *The Sociology of Food and Eating: Essays on the Social Significance of Food*. ed. by Murcott, A. Aldershot: Gower
- Nair, P. (2017) 'The Country Where Unwanted Food Is Selling Out'. *BBC* [online] available from <<http://www.bbc.com/future/story/20170124-the-country-where-unwanted-food-is-selling-out?ocid=fbfut>>
- Nandagiri, V. and Philip, L. (2018) 'The Impact of Influencers from Instagram and YouTube on Their Followers The Impact of Influencerinfluencers from Instagram and YouTube on Their Followers View Project'. *International Journal of Multidisciplinary Research and Modern Education* [online] 4 (1), 61–65. available from <www.rdmodernresearch.org>
- Napoleon sp. z o.o (2019) *Instagram Users in Denmark* [online] available from <<https://napoleoncat.com/stats/instagram-users-in-denmark/2018/11>> [22 May 2019]
- Naturally Birmingham Limited (2018) *Plant Based Natural Bar + Kitchen* [online] available from <<http://www.naturalbar.co.uk/>> [24 January 2019]

- Nifties (2017) *Niftie's* [online] available from <<https://www.dontwastethetaste.co.uk/>> [5 May 2017]
- Noë, A. (2007) 'The Critique of Pure Phenomenology'. *Phenomenology and the Cognitive Sciences* 6, 231–245
- Nordic (2016) *Too Good To Go Raies Investment* [online] available from <<https://nordic9.com/news/too-good-to-go-raies-investment-news5221701418/>> [4 October 2018]
- O'Reilly, M. and Parker, N. (2013) "Unsatisfactory Saturation": A Critical Exploration of the Notion of Saturated Sample Sizes in Qualitative Research'. *Qualitative Research* 13 (2), 190–197
- Oates, C.J. and McDonald, S. (2014) 'The Researcher Role in the Attitude-Behaviour Gap'. *Annals of Tourism Research* [online] 46 (41), 168–170. available from <<http://dx.doi.org/10.1016/j.annals.2014.01.003>>
- Office for National Statistics (2019) *Population Estimates for UK, England and Wales, Scotland and Northern Ireland* [online] available from <<https://www.ons.gov.uk/filter-outputs/be03e33d-92bc-4cb2-87c0-06ea08dbac10>> [3 November 2019]
- Office for National Statistics (2017) *Nomis - Official Labour Market Statistics* [online] available from <http://www.nomisweb.co.uk/reports/lmp/la/1946157186/subreports/ea_compared/report.aspx?allInGB=yes&pivot=5&&sort=1&ascending=>> [17 April 2018]
- Olio (2019) *What Is Olio* [online] available from <<https://olioex.com/about/#about>> [23 October 2019]
- Oxford University Press (2016) *Oxford Dictionaries* [online] available from <<https://en.oxforddictionaries.com/definition/vulnerable>> [12 December 2016]
- Papargyropoulou, E., Lozano, R., Steinberger, J.K., Wright, N., and Ujang, Z.B. (2014) 'The Food Waste Hierarchy as a Framework for the Management of Food Surplus and Food Waste'. *Journal of Cleaner Production* [online] 76, 106–115. available from <<http://eprints.whiterose.ac.uk/79194/>>
- Papargyropoulou, E., Wright, N., Lozano, R., Steinberger, J., Padfield, R., and Ujang, Z. (2016) 'Conceptual Framework for the Study of Food Waste Generation and Prevention in the Hospitality Sector'. *Waste Management* 49, 326–336
- Parboteeah, K.P., Addae, H.M., and Cullen, J.B. (2012) 'Propensity to Support Sustainability Initiatives: A Cross-National Model'. *Journal of Business Ethics* 105, 403–413

- Payton, M. (2016) 'Denmark Opens First Food Waste Supermarket Selling Surplus Produce'. *Independent* [online] 23 February. available from <<https://www.independent.co.uk/news/world/europe/denmark-food-waste-supermarket-we-food-copenhagen-surplus-produce-a6890621.html>>
- Pearson, S., Hansen, B., Sørensen, T., and Baker, J. (2010) *Overweight and Obesity Trends in Copenhagen Schoolchildren from 2002 to 2007* [online] available from <<https://www.ncbi.nlm.nih.gov/pubmed/20528793>> [7 June 2018]
- Pink, S. (2015) *Doing Sensory Ethnography*. 2nd edn. London: SAGE Publications Ltd
- Pirani, S.I. and Arafat, H.A. (2016) 'Reduction of Food Waste Generation in the Hospitality Industry'. *Journal of Cleaner Production* 132, 129–145
- Pirani, S.I. and Arafat, H.A. (2014) 'Solid Waste Management in the Hospitality Industry: A Review'. in *Journal of Environmental Management*. vol. 146. 320–336
- PitchBook (2019) *Too Good To Go* [online] available from <<https://pitchbook.com/profiles/company/167210-56>> [13 February 2019]
- Porpino, G., Parente, J., and Wansink, B. (2015) 'Food Waste Paradox: Antecedents of Food Disposal in Low Income Households'. *International Journal of Consumer Studies* 39, 619–629
- Pyne, H. (2018) *A Solution in Your Pocket: Our Top Five Apps Tackling Food Waste* [online] available from <<http://www.eastlondonlines.co.uk/2018/04/a-solution-in-your-pocket-our-top-five-apps-tackling-food-waste/>> [20 May 2019]
- Quested, T., Ingle, R., and Parry, A. (2013) *Household Food and Drink Waste in the UK* [online] available from <<http://www.wrap.org.uk/content/household-food-and-drink-waste-uk-2009>>
- Rabiee, F. (2004) 'Focus-Group Interview and Data Analysis'. *Proceedings of the Nutrition Society* 63 (4), 655–660
- Ragin, C.C. (1994) *Constructing Social Research*. ed. by Ragin, C., Griswold, W., and Griffin, L. Thousand Oaks, CA: Pine Forge Press
- RobecoSAM (2019) *Country Sustainability Ranking* [online] available from <<http://www.robecosam.com/en/sustainability-insights/about-sustainability/country-sustainability-ranking/#>> [4 June 2019]
- Robertson, T.S. (1967) 'The Process of Innovation and the Diffusion of Innovation'. *Journal of Marketing* 31 (1), 14–19
- Robson, C. and McCarten, K. (2016) *Real World Research*. 4th edn. London: Wiley
- Rogers, E.M. (2003) *Diffusion of Innovations*. 5th edn. New York: Free Press
- Rogers, E.M. (2001) 'Innovation, Theory Of'. in *International Encyclopedia of the Social & Behavioral Sciences*. 1st edn. ed. by Smelser, N.J. and Baltes, P.B. Oxford: Elsevier Science Ltd, 7540–7543

- Rogers, E.M. (1983) *Diffusion of Innovations*. 3rd edn. New York: Free Press
- Roller, M.R. and Lavrakas, P.J. (2015) *Applied Qualitative Research Design*. New York: Guilford Publications
- Rosenthal, S.B. and Bourgeois, P.L. (1980) *Pragmatism and Phenomenology: A Philosophic Encounter*. Amsterdam: B.R. Grüner Publishing Company
- Roy, P. (2019) 'The 9 Best Food Waste Apps To Make Sustainable Eating Easier'. *Vogue* [online] April. available from <<https://www.vogue.co.uk/gallery/best-food-waste-apps>>
- Sakarya, S., Bodur, M., Yildirim-Öktem, Ö., and Selekler-Göksen, N. (2012) 'Social Alliances: Business and Social Enterprise Collaboration for Social Transformation'. *Journal of Business Research* 65 (12), 1710–1720
- Saldana, J. (2016) *The Coding Manual for Qualitative Researchers*. London: SAGE Publications Ltd
- Sanson-Fisher, R.W. (2004) 'Diffusion of Innovation Theory for Clinical Change'. *The Medical Journal of Australia* 180, S55–S56
- Saunders, M., Lewis, P., and Thornhill, A. (2016) *Research Methods for Business Students*. 7th edn. Harlow: Pearson Education Limited
- Saxena, D.L.P. and Tornaghi, D.C. (2018) *The Emergence of Social Supermarkets in Britain: Food Poverty, Food Waste and Austerity Retail*. Coventry: Centre for Agroecology, Water and Resilience, Coventry University
- Scalable Impact (2020) *Too Good To Go* [online] available from <<http://scalable-impact.com/too-good-to-go/>> [12 May 2020]
- Schneider, F., Scherhauser, S., BOKU University, Montoux, H., Gheoldus, M., O'Connor, C., and Derain, A. (2015) *Advancing Social Supermarkets across Europe. WP4 – Testing Social Innovation. Feasibility Study Final Report* [online] Vienna and Paris: FUSION available from <[http://www.eu-fusions.org/phocadownload/feasibility-studies/Supermarkets/Advancing social supermarkets report.pdf](http://www.eu-fusions.org/phocadownload/feasibility-studies/Supermarkets/Advancing%20social%20supermarkets%20report.pdf)>
- Schneider, U.A., Havlík, P., Schmid, E., Valin, H., Mosnier, A., Obersteiner, M., Böttcher, H., Skalský, R., Balkovič, J., Sauer, T., and Fritz, S. (2011) 'Impacts of Population Growth, Economic Development, and Technical Change on Global Food Production and Consumption'. *Agricultural Systems* 104 (2), 204–215
- Schor, J.B. and Fitzmaurice, C. (2015) 'Collaborating and Connecting: The Emergence of the Sharing Economy'. in *Handbook of Research on Sustainable Consumption* [online] ed. by Reisch, L. and Thøgersen, J. Cheltenham, UK: Edward Elgar Publishing Ltd, 410–425. available from <<http://www.scopus.com/inward/record.url?eid=2-s2.0-84911393688&partnerID=tZOtx3y1>>
- Schwartz, B. (2004) *The Paradox of Choice. Why More Is Less*. London: HarperCollins e-books

- Segrè, A. and Gaiani, S. (2012) *Transforming Food Waste into a Resource*. Cambridge : Royal Society of Chemistry
- Sekulova, F., Kallis, G., Rodríguez-Labajos, B., and Schneider, F. (2013) 'Degrowth: From Theory to Practice'. *Journal of Cleaner Production* [online] 38, 1–6. available from <<http://dx.doi.org/10.1016/j.jclepro.2012.06.022>>
- Shaw, D., McMaster, R., and Newholm, T. (2016) 'Care and Commitment in Ethical Consumption: An Exploration of the "Attitude–Behaviour Gap"'. *Journal of Business Ethics* 136 (2), 251–265
- Sidali, K.L., Spiller, A., and von Meyer-Höfer, M. (2016) 'Consumer Expectations Regarding Sustainable Food: Insights from Developed and Emerging Markets'. *International Food and Agribusiness Management Review* 19 (3), 141–170
- Siggelkow, N. (2007) 'Persuasion with Case Studies'. *Academy of Management Journal* 50 (1), 20–24
- Sirieix, L., Lála, J., and Kocmanová, K. (2017) 'Understanding the Antecedents of Consumers' Attitudes towards Doggy Bags in Restaurants: Concern about Food Waste, Culture, Norms and Emotions'. *Journal of Retailing and Consumer Services* [online] 34 (August 2016), 153–158. available from <<http://dx.doi.org/10.1016/j.jretconser.2016.10.004>>
- Smith, A.. (2020) 'The Perfect Storm: A History of Food Waste'. in *The Routledge Handbook of Food Waste*. ed. by Reynolds, C., Soma, T., Spring, C., and Lazell, J. Abingdon: Routledge, 24–37
- Sokolowski, R. (1999) *Introduction to Phenomenology*. New York: Cambridge University Press
- Soron, D. (2010) 'Sustainability, Self-Identity and the Sociology of Consumption'. *Sustainable Development* 18, 172–181
- Southerton, D. (2003) "'Squeezing Time" Allocating Practices, Coordinating Networks and Scheduling Society'. *Time & Society* [online] 12 (1), 5–25. available from <www.sagepublications.com>
- Southerton, D., Díaz-Méndez, C., and Warde, A. (2011) 'Behavioural Change and the Temporal Ordering of Eating Practices: A UK-Spain Comparison'. *The International Journal of Sociology of Agriculture and Food* 19 (1), 19–36
- Spaargaren, G. (2011) 'Theories of Practices: Agency, Technology, and Culture. Exploring the Relevance of Practice Theories for the Governance of Sustainable Consumption Practices in the New World-Order'. *Global Environmental Change* 21 (3), 813–822

- Springmann, M., Clark, M., Mason-D’Croz, D., Wiebe, K., Bodirsky, B.L., Lassaletta, L., de Vries, W., Vermeulen, S.J., Herrero, M., Carlson, K.M., Jonell, M., Troell, M., DeClerck, F., Gordon, L.J., Zurayk, R., Scarborough, P., Rayner, M., Loken, B., Fanzo, J., Godfray, H.C.J., Tilman, D., Rockström, J., and Willett, W. (2018) ‘Options for Keeping the Food System within Environmental Limits’. *Nature* [online] 562 (7728), 519–525. available from <<http://dx.doi.org/10.1038/s41586-018-0594-0>>
- Sriwannawit, P. and Sandström, U. (2014) ‘Large-Scale Bibliometric Review of Diffusion Research’. *Scientometrics* 102 (2), 1615–1645
- Stancu, V., Haugaard, P., and Lähteenmäki, L. (2016) ‘Determinants of Consumer Food Waste Behaviour: Two Routes to Food Waste’. *Appetite* 96, 7–17
- StatBank Denmark (2019) *Full-Time Unemployed Persons in per Cent of the Labour Force by Sex, Age, Region and Time* [online] available from <<https://www.statbank.dk/AULKP01>> [27 June 2019]
- statista (2018) *Organic Food Market in the United Kingdom* [online] available from <<https://www.statista.com/study/21709/organic-food-market-in-the-uk-statista-dossier/>>
- Stenmarck, Å., Hanssen, O.J., Silvennoinen, K., Katajajuuri, J.-M., and Werge, M. (2011) *Initiatives on Prevention of Food Waste in the Retail and Wholesale Trades*. Copenhagen: Nordic Council of Ministers
- Stenmarck, Å., Jensen, C., Quested, T., and Moates, G. (2016) *Estimates of European Food Waste Levels*. Stockholm: FUSIONS
- Stop Spild Af Mad (2017) *Doggy Bags and REFOOD Certification to Less Food Waste* [online] available from <<http://www.stopspildafmad.dk/doggybags.html>> [30 March 2017]
- Stuart, T. (2009) *Waste*. London: Penguin Books Ltd
- Swaffield, J., Evans, D., and Welch, D. (2018) ‘Profit, Reputation and “Doing the Right Thing”: Convention Theory and the Problem of Food Waste in the UK Retail Sector’. *Geoforum* 89, 43–51
- Szmigin, I., Carrigan, M., and McEachern, M.G. (2009) ‘The Conscious Consumer: Taking a Flexible Approach to Ethical Behaviour’. *International Journal of Consumer Studies* [online] 33, 224–231. available from <<http://oro.open.ac.uk/15153/>> DOI: 10.1111/j.1470-6431.2009.00750.x
- Tanner, C. and Kast, S.W. (2003) ‘Promoting Sustainable Consumption: Determinants of Green Purchases by Swiss Consumers’. *Psychology and Marketing* 20 (10), 883–902
- The City of Copenhagen (2019) *Copenhagen Facts* [online] available from <<https://international.kk.dk/artikel/copenhagen-facts>> [3 May 2019]

- The Guardian (2016) 'Danish Supermarket Selling Expired Food Opens Second Branch'. *The Guardian* [online] 27 November, 1–2. available from <<https://www.theguardian.com/environment/2016/nov/27/food-waste-denmark-buy-expired-produce-copenhagen-wefood>>
- Thøgersen, J. (2010) 'Country Differences in Sustainable Consumption: The Case of Organic Food'. *Journal of Macromarketing* 30 (2), 171–185
- Thorsøe, M. and Kjeldsen, C. (2016) 'The Constitution of Trust: Function, Configuration and Generation of Trust in Alternative Food Networks'. *Sociologia Ruralis* 56 (2), 157–175
- Toma, L., Costa Font, M., and Thompson, B. (2017) 'Impact of Consumers' Understanding of Date Labelling on Food Waste Behaviour'. *Operational Research* 17 October, 1–18
- Too Good To Go (2020) *Kleiner Hinweis, großer Impact* [online] available from <<https://toogoodtogo.de/de/campaign/oft-laenger-gut>> [14 May 2020]
- Too Good To Go (2016) *All about Too Good To Go* [online] available from <<http://toogoodtogo.co.uk/about/>> [3 January 2017]
- Too good to waste (2011) *The Doggy Box* [online] available from <<http://www.toogoodtowaste.co.uk/the-box/overview/>> [30 March 2017]
- Truong, V.D. (2014) 'Social Marketing: A Systematic Review of Research 1998-2012'. *Social Marketing Quarterly* 20 (1), 15–34
- Tukker, A. and Tischner, U. (2006) 'Product-Services as a Research Field: Past, Present and Future. Reflections from a Decade of Research'. *Journal of Cleaner Production* 14, 1552–1556
- Tuomisto, H.L., Hodge, I.D., Riordan, P., and Macdonald, D.W. (2012) 'Does Organic Farming Reduce Environmental Impacts? - A Meta-Analysis of European Research'. *Journal of Environmental Management* [online] 112 (834), 309–320. available from <<http://dx.doi.org/10.1016/j.jenvman.2012.08.018>>
- Vanham, D., Bouraoui, F., Leip, A., Grizzetti, B., and Bidoglio, G. (2015) 'Lost Water and Nitrogen Resources Due to EU Consumer Food Waste'. *Environmental Research Letters* [online] 10 (8), 084008. available from <<http://iopscience.iop.org/1748-9326/10/8/084008/article/>> DOI: 10.1088/1748-9326/10/8/084008
- Verplanken, B. and Wood, W. (2006) 'Interventions to Break and Create Consumer Habits'. *Journal of Public Policy & Marketing* 25 (1), 90–103
- Vinegar, R., Parker, P., and McCourt, G. (2016) 'More than a Response to Food Insecurity: Demographics and Social Networks of Urban Dumpster Divers'. *Local Environment* [online] 21 (2), 241–253. available from <<http://dx.doi.org/10.1080/13549839.2014.943708>>

- Virgin Media Business Ltd (2018) *Welcome to Voom* [online] available from <<https://www.virginmediabusiness.co.uk/voom/>> [26 November 2018]
- Visschers, V.H.M., Wickli, N., and Siegrist, M. (2016) 'Sorting out Food Waste Behaviour: A Survey on the Motivators and Barriers of Self-Reported Amounts of Food Waste in Households'. *Journal of Environmental Psychology* 45, 66–78
- Waite, R. (2009) *Household Waste Recycling*. London: Taylor and Francis
- Wang, X., Yu, C., and Wei, Y. (2012) 'Social Media Peer Communication and Impacts on Purchase Intentions: A Consumer Socialization Framework'. *Journal of Interactive Marketing* 26 (4), 198–208
- Wang, Y., Olde III, W., Eleazer, W., and Bariaz, M. (1997) 'Methane Potential of Food Waste and Anaerobic Toxicity of Leachate Produced during Food Waste Decomposition'. *Waste Management & Research* 15 (2), 149–167
- Warde, A. (1999) 'Convenience Food: Space and Timing'. *British Food Journal* 101 (7), 518–527
- Water Footprint Network (2009) *What Is a Water Footprint?* [online] available from <<http://waterfootprint.org/en/water-footprint/what-is-water-footprint/>> [6 December 2016]
- Watson, M. and Meah, A. (2013) 'Food, Waste And Safety: Negotiating Conflicting Social Anxieties Into The Practices Of Domestic Provisioning'. *Sociological Review* 60 (2), 102–120
- WCED (1987) *Our Common Future* [online] available from <<http://www.un-documents.net/our-common-future.pdf>>
- Webb, C. (1992) 'The Use of the First Person in Academic Writing: Objectivity, Language and Gatekeeping'. *Journal of Advanced Nursing* 17 (6), 747–752
- Welch, D., Swaffield, J., and Evans, D. (2018) 'Who's Responsible for Food Waste? Consumers, Retailers and the Food Waste Discourse Coalition in the United Kingdom'. *Journal of Consumer Culture* 0 (0), 1–21
- Wells, L. (2019) *Lidl Introduces 'Too Good To Waste' Fruit and Veg Boxes* [online] available from <<https://www.talkingretail.com/news/industry-news/lidl-introduces-good-waste-fruit-veg-boxes-27-03-2019/>> [1 April 2019]
- West Midlands Growth Company (2019) *Students* [online] available from <<https://visitbirmingham.com/things-to-see-and-do/recommended-for/students>> [3 May 2019]
- Whetten, D.A. (1989) 'What Constitutes a Theoretical Contribution?'. *Academy of Management Review* 14 (4), 490-495

- White, K., Hardisty, D.J., and Habib, R. (2019) 'The Elusive Green Consumer'. *Harvard Business Review* [online] (July-August). available from <<https://hbr.org/2019/07/the-elusive-green-consumer>>
- Whitehead, P., Parfitt, J., Bojczuk, K., and James, K. (2013) *Estimates of Waste in the Food and Drink Supply Chain*. WRAP [online] available from <[http://www.wrap.org.uk/sites/files/wrap/Estimates of waste in the food and drink supply chain_0.pdf](http://www.wrap.org.uk/sites/files/wrap/Estimates%20of%20waste%20in%20the%20food%20and%20drink%20supply%20chain_0.pdf)>
- Wonderful Copenhagen (2019) *Wefood* [online] available from <<https://www.visitcopenhagen.com/copenhagen/wefood-gdk1100825>> [20 May 2019]
- Wong, K. (2017) 'Tackling Food Waste around the World: Our Top 10 Apps'. *The Guardian* [online] 6 February. available from <<https://www.theguardian.com/sustainable-business/2017/feb/06/food-waste-apps-global-technology-leftovers-landfill>>
- World Population Review (2019) *World Population Review* [online] available from <<http://worldpopulationreview.com/world-cities/copenhagen-population/>> [17 April 2018]
- Woskow, D. (2014) *Unlocking the Sharing Economy: An Independent Review* [online] available from <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/378291/bis-14-1227-unlocking-the-sharing-economy-an-independent-review.pdf>
- WRAP (2018a) *WRAP Restates UK Food Waste Figures to Support United Global Action* [online] available from <<http://www.wrap.org.uk/content/wrap-restates-uk-food-waste-figures-support-united-global-action>> [19 July 2019]
- WRAP (2018b) *The Courtauld 2025 Baseline and Restated Household Food Waste Figures* [online] available from <<http://www.wrap.org.uk/content/courtauld-2025-baseline-and-restated-household-food-waste-figures>> [20 September 2019]
- WRAP (2017a) *What We Do* [online] available from <<http://www.wrap.org.uk/about-us/what-we-do>> [15 February 2017]
- WRAP (2017b) *Wrap and the Circular Economy* [online] available from <<http://www.wrap.org.uk/about-us/about/wrap-and-circular-economy>> [18 January 2017]
- WRAP (2016) *Preventing Food Waste. A Myth Buster for Legislation in the Hospitality and Food Service Sector*. [online] UK: WRAP. available from <[http://www.wrap.org.uk/sites/files/wrap/Preventing food waste - A myth buster for legislation in the Hospitality and Food Service Sector.pdf](http://www.wrap.org.uk/sites/files/wrap/Preventing%20food%20waste%20-%20A%20myth%20buster%20for%20legislation%20in%20the%20Hospitality%20and%20Food%20Service%20Sector.pdf)>
- Yeow, P., Dean, A., and Tucker, D. (2014) 'Bags for Life: The Embedding of Ethical Consumerism'. *Journal of Business Ethics* 125 (1), 87–99

- Yin, R.K. (2014) *Case Study Research. Design and Methods*. 5th edn. Los Angeles: Sage Publications, Inc.
- Yin, R.K. (1994) *Case Study Research - Design and Methods*. 2nd edn. Thousand Oaks, CA; London, UK; New Delhi, India: Sage Publications Inc.
- Young, W., Hwang, K., McDonald, S., and Oates, C.J. (2010) 'Sustainable Consumption: Green Consumer Behaviour When Purchasing Products'. *Sustainable Development* 18, 20–31

Appendices

Appendix Chapter 4

A) Interview questions

The interviews were semi-structured, meaning that the interview guide was applied in a flexible way. Thus, depending on the situation, not all questions were asked or were asked in a different way. The aim was to cover the topics outlined in the guide while allowing the participant to direct the conversation and decide which topics to focus on more. Rather than being a formal interview, the conversation was meant to flow naturally. In the following the full list of interview questions as well as introduction and closing are presented (Tables A1, A2).

Introduction:

Hi, again. I am Lisa, thanks for taking the time talking to me. I am a PhD student and research market-based solutions to food waste. Therefore, I am also interested in the perceptions of consumers (/ people working at the business) and have a few questions. The interview will take no longer than 30 minutes and is very informal, more like a conversation. Feel free to ask questions at any time. Can I record our conversation? I am using any data anonymously as explained in the documents you signed earlier.

Table A1: Interview guide consumers and customers (author)

Participant	Topic	Question	Issues
Customers	Consumer back-ground and shopping habits	<p>Tell me a bit about you. (employment, marital status, age, attitude, etc)</p>	
		<p>Please tell me about your shopping habits.</p> <ul style="list-style-type: none"> - Where and why - What's important to you when shopping / eating out (for TGTG) - Do you take takeaways? - When do you shop? / How often - Who for? / Who does the shopping? (if for family / partner: do they share same attitude?) - EXAMPLE: last (exemplary/standard) shopping 	
		<p>Do you buy items from the reduced section, the ones that are close to expiry date and thus are reduced? Why ?</p>	
		<p>Either show pictures of different products (brand, cheap, organic, imperfect perfect):</p> <p>Which items do you choose? Please explain;</p> <p>Or ask:</p> <p>When you go shopping and you are buying cereal and some of the packages are slightly damaged or open and some are not. Which do you choose?</p>	

		In the case of tins, do you mind if the tin is slightly dented?	
		Show pictures of 3 trolleys with the same items but different types (cheap, brands, organic). Which trolley would be yours? Please explain. What kind of people would the other trolleys belong to? What would they be like?	
	Consumer experience at shop	Please tell me the story of you shopping here. - How find out - Why try - Why continue and how often - When do you usually come? Why some days, why others not? - What would motivate you to do more of your shopping here? - Likes and dislikes (e.g. choice, convenience, shelf life)	
		Did you tell anybody about the shop? (Who did you tell what by which means?)	
		How is shopping here different from other supermarkets you shop at? What's the 'feel' of shopping here? / How is buying food here different from other takeaways you go to? (e.g. shelf life, choice, imperfect items, trendy)	
		How is the quality of the food here? What did you buy today, what do you	

		buy usually, what not? (less, same, food safety)	
		Are you worried about food safety?	
		When you go to your normal supermarket and let's say it's 6pm or a bit later and some of the stuff that you would usually get is not there anymore, the shelves have gone quite empty and also it doesn't look as pretty anymore. Some of the stuff that's there is the pretty stuff but also some imperfect items, some 'ugly' apples or slightly damaged packaging. How would you feel?	
	Food waste behaviour	Do you have any idea about how much food gets thrown away? (If they do not know I tell them the FAO (2013) statistics, 1/3 of all food produced for human consumption is lost or wasted)	
		What are your thoughts about that?	
		Now, that you know how big and serious a problem food waste is, does that change your opinion about shopping at XXX / shopping habits?	It is very easy to just confirm the question. But I enforced by asking for an honest answer and admitted that the formulation of that question was not ideal,

			but that I am looking for real honest not positive answers.
		What food do you mostly throw away / In which situations do you have to throw food away?	
	Valuation of food	How do you feel about that?	
		If you bought a loaf of bread / reduced bread and you realised at home that a small spot at the one end has gone mouldy, what do you do? (value)	
		Do you eat products that have reached or passed their best before date?	
		And what about the food you buy here? Do you manage to consume that in time or do you often find yourself throwing it away?	
		If you are throwing it away, how do you feel about that? / If you have to throw away a high quality item and something you bought here (case business) or at the reduced section, does it feel differently?	
		When you eat at a restaurant do you sometimes have leftovers? What do you do with them?	
	Climate Change /	What do you think about issues such as climate change, resource depletion, species extinction, deforestation?	

	environ- mental education	(real / unreal, problem or not)	
		Who is responsible for tackling them?	
		Do you believe your actions affect the situation? How?	
Consumers only		Have you heard of XXX (case business)? How have you heard about it? (If it is unknown, explain concept)	
		Would you ever shop there?	
		What would you think if your friend / partner recommended it to you?	
		What stops you from trying it? / What convinces / motivates you to try it out?	
		Who do you think shops there? (What kind of people)	

Table A2: Interview guide business representatives (author)

Participant	Topic	Question	Issues
Business representatives	Background	Tell me about your role and what your normal activities are, working in the business.	
		How come you set up this business / this business was set up? (Why, when, how, funding, what was your idea?)	
	Business Model	What do you want to achieve with this business?	
		What really matters to you in your day-to-day business?	

		<p>How are you going to make money?</p> <p>(Funding? Profit/loss/zero sum = covering cost)</p>	
		<p>Where do you source your products from?</p>	
		<p>Have you had any problems around dates (best before, use by)?</p>	
	Challenges and Drivers	<p>What works well?</p>	
		<p>What doesn't work well?</p> <p>What problems or barriers are you dealing with? (e.g. supply, selling in time, attracting customers, logistics, funding)</p>	
		<p>What takes up most of your time?</p>	
	Business Development	<p>Would you like to see this idea elsewhere?</p>	
		<p>Would you like to grow your business, e.g. by opening more shops? Yourself?</p>	
		<p>What would be the barriers?</p>	
		<p>Where do you see your business going?</p> <p>(1 year, 5 years)</p>	
	Customers and Marketing	<p>How do you let people know that you are here?</p>	
		<p>What do you do to attract customers and sell more?</p> <p>(marketing strategy, Ps)</p> <p>How does that work?</p>	

		Please describe the people, who shop here. (repeat customers?)	
		Why do you think they shop here?	
		What do customers expect when coming here?	
		Do you think most of what people buy gets used?	
		What sells best / worst? Please elaborate / can you give an example?	
		What about the layout of the shop? Why did you choose to do it this way?	
	Waste	Do you waste a lot of food? (daily / weekly) Does most of it get used / not?	
		What kind of food do you mostly waste?	
		What do you do with your waste?	
	Research	What kind of insight / research would be useful for your business?	
		Does insight into consumer perception of your business, why they buy or not buy surplus food benefit your business? (Do you struggle to attract customers?)	
TGTG partners	Background	Please tell me a bit about the restaurant and your role. (A la carte, etc.)	restaurant staff won't have much time
		How come you are participating?	

	Business Development	How has it been going so far? - Growing number of leftover pick-ups - Workload	
		Do you manage to sell all your leftovers? / Do you have less food waste since you joined TGTG?	
	Challenges and drivers	What are challenges you are facing in selling the leftovers? What doesn't work well / take up a lot of your time?	
		What do you think really helps selling more leftovers? What works well?	
		What tends to be most popular; least popular among customers? Are there things that work better than others in selling the surplus food of the restaurant?	
	Waste	What are you doing with the rest / the leftovers you couldn't sell?	
		Are there any legal restrictions?	
	Marketing	Do you promote your participation? How?	
		Do you feel any effect from participating (and promoting it)? Has anything changed for the business? (Media interest, more/ fewer	

		customers, more profit, less waste, more work)	
	Business Development	(If not answered before) Is selling leftovers with TGTG profitable for your business or does it just cover cost or do you even make a loss?	
		Do you believe you'll continue selling at TGTG or could you imagine you'll leave soon?	
	Customers	What kind of people buy your leftovers? (Are they restaurant customers or new faces, young / old, class?)	
		Why, do you think, do they buy the leftovers?	
		Do people usually buy just 1 – 2 or multiple portions?	
		How do TGTG customers react when they pick up their portion?	
	If not yet answered:	Are people worried about food safety?	
		Do they question the quality of the food?	
		What's your opinion about joining TGTG? How is the feeling among staff about it?	

Closing:

Thanks a lot for your time and all the information; that was very interesting!

Do you have any questions or comments? If I had another question could I contact you?

Thanks so much! It was a pleasure to talk to you!

B) Use of pictures in interviews

To understand participants' shopping habits very well and to check for any attitude-behaviour gaps, I used pictures during the interviews conducted in the UK. In order to be able to visually represent various shopping habits, I had pictures of fruit and vegetables (frozen, cheap, branded, organic, tinned), meat, fish, ready meals and toilet paper. The pictures showed different versions of the same products: cheap, organic, high quality brand, reduced, packaged, loose, perfect condition, imperfect condition (see Figures A1, A2). If the price was not indicated in the picture, I noted it by hand on the hard copy. I informed the participants that I was going to show them some pictures of different types of the same product and that I would like them to indicate which type they would usually buy if they bought that product at all. Then I checked if they were buying the next product I wanted to show, so I asked, for example: *'Do you usually buy carrots?'* If the participant did not usually buy carrots, I moved on to the next item. If they did buy carrots, I let them choose which type they usually purchased or, if they bought a different type not represented by a picture, I asked them to describe their regular product choice. The last pictures I showed participants were the three shopping trolleys (Figure A3). I asked them to select the shopping trolley that would most likely be theirs and to describe the potential owners of the other trolleys. For all pictures, I asked participants to explain their choice so that I could comprehend the reason behind it. An attitude-behaviour gap could not be detected.



Figure A1: Perfect vs imperfect items (author)



Figure A2: Different types of peppers (organic, wonky, standard) (author)



Figure A3: Shopping trolleys with different types of the same products (cheap, organic, brands) (author)

C) Observation Guide

Limitation:

Denmark: language, won't understand what customers are saying

Plan:

- No interaction with customers, only observe, to not engineer the situation / observation, to watch the ordinary
- Make grid of things to observe to enable cross-comparison
- Take pictures of layouts, products, meals
- Talk observations into my phone recorder (pretend to talk on the phone)
- Observation is a kind of ethnographic research
- Ask businesses about observations: 'I noted that...', can you tell me more about that?

What to observe:

Shop

- Setting of shop inside
- Setting shop outside
- Marketing mix

Products

- What is offered – product range
- Consumers' reactions to products, price
- What do people buy?
- What do people look at / touch and don't buy?
- What are people drawn to / attracted by? What attracts attention?

Movement

- How do people move around? (functional, mooching, etc.)?
- How long do people spend where?
- Common shopping behaviour, pattern
- Reactions from passers-by

Interaction

- Interaction with employees
- Interaction with other shoppers

Who

- Who shops there?
- Who enters (but doesn't buy anything)?

Personal observations

- Personal feeling
- Difference at different days and times

TGTG:

- Interaction with restaurant employees
- Interaction with other customers
- Attitude of customers
- Reaction when receive food – what do they do?
- How is the procedure?
- What do they get?
- What is leftover?

Note while observing (Robson and McCarten 2016) :

- Distinguish comments, quotes and meanings
- Be concrete: who, what when
- Personal impressions and feelings
- Reminder to look for more information
- Thoughts, memories after
- Write report within 24h
- Be aware of biases
- Selective attention, encoding, memory, interest, expectation, experience – can influence my observations!
- Interpersonal relations
- ⇒ Reflect, be objective, be critical towards me

D) Participants

The following table (Table A3) provides an overview of the participants in this research. They are grouped into 'business', 'consumer' or 'business and consumer', which indicates if the participant was interviewed as a representative of a case business, as a consumer (or customer) or if the participant responded as both a consumer and as a business representative. Sometimes Wefood volunteers or staff of TGTG partners also used TGTG themselves, for example, so they represented both groups. The data field 'Group interview' shows if the participant was interviewed individually or if it was a group or focus group interview. Furthermore, I noted demographic data whenever I collected them during the interviews. The main focus was not on participants' demographics, but as purchasing decisions are driven by life circumstances, and therefore might be affected by one's demographic background (Jackson 2005; Kneafsey et al. 2013), some basic demographic information was recorded (employment, gender, age, nationality (indicating if the participant is national to the research country or a foreigner, 'international')). When it was not considered important, demographic data were not collected ('unassigned' / 'ua'). The field 'Type' provides information about the affiliation of the participant ('C W' abbreviates Wefood customer, 'C N' Niftie's customer, 'C T' TGTG customer, 'NC' consumer and 'biz' business representative). 'Status' indicates either the role of the business representative or the family status of the customer or consumer if it was known. Participants who did not mention a partner or family when talking about their background, living situation and shopping habits were classified as 'single', as no other person seemed to directly influence their shopping behaviour. For reasons of confidentiality participants' names are fictive and indicated in the field 'Synonym'.

The number of participants does not match the number of interviews, as some participants were interviewed twice (in 2017 and 2018) and because business representatives of restaurants and cafés that did not partner with TGTG and refrained from being recorded, with whom interviews were very brief, are not included individually, they are counted as 1 interview in Denmark and the UK each. The number of participants in this table also does not reflect the actual number of people, as group interviews are represented as one unit in this table, while in reality two or more people participated. In those cases, the field 'gender' might indicate 'mixed'. This presentation was chosen because it illustrates the interview process in a clearer way.

Table A3: Overview of participants (author)

	Synonym	Group	Group interview	Employment	Gender	Age	Nationality	Type	Status
1	Stuart	business	no	unassigned (ua)	male	ua	national	Food-sharing	organiser
2	Carla	business	no	ua	female	ua	national	Food-sharing	organiser
3	Salim	business and consumer	no	ua	male	25-29	national	non TGTG business (biz)	employee and TGTG customer (C T)
4	Elmar, Emma	business	yes	ua	mixed	ua	national	non TGTG biz	employee
5	Gina, Giselle	business and consumer	yes	ua	female	ua	national	non TGTG biz	employee and C T
6	Ralph	business	no	ua	male	ua	international	non TGTG biz	owner
7	Frederic	business	no	ua	male	ua	national	supermarket	store manager
8	Ralf	business	no	ua	male	ua	national	supermarket	store manager
9	Emil	business	no	ua	male	ua	international	supermarket	store manager
10	Betty	business	no	ua	female	ua	national	TGTG biz	store manager
11	Darius	business	no	ua	male	ua	international	TGTG biz	store manager

	Synonym	Group	Group interview	Employment	Gender	Age	Nationality	Type	Status
12	Edgar, Elias	business and consumer	yes	ua	male	ua	national	TGTG biz and C T	employee
13	Christian	business	no	ua	male	ua	ua	TGTG biz	store manager
14	Else	business	no	ua	female	ua	international	TGTG biz	employee
15	Cedric	business	no	ua	male	ua	international	TGTG biz	store manager
16	Inga	business	no	ua	female	ua	national	TGTG biz	store manager
17	Bart	business	no	ua	male	ua	international	TGTG biz	employee
18	Carina	business	no	ua	female	ua	national	TGTG biz	owner
19	Tom	business	no	ua	male	ua	national	Green-market	employee
20	Tim	business	no	ua	male	ua	national	Green-market	employee
21	Pan	business	no	ua	male	ua	national	Green-market	volunteer
22	Nico, Karsten, Stefan	business	yes	ua	male	ua	national	Green-market	volunteer
23	Valeria	business	no	ua	female	ua	national	Green-market	volunteer
24	Marcus, Martin, Fiona	business	yes	ua	mixed	ua	international	Green-market	volunteer
25	Vera	business and consumer	no	ua	female	ua	international	Green-market and C T	volunteer

	Synonym	Group	Group interview	Employment	Gender	Age	Nationality	Type	Status
26	Valentina	business	no	ua	female	ua	national	Danish Charity (DC)	volunteer
27	Selina, Henry	business	yes	ua	mixed	ua	national	DC	volunteer
28	Vanessa	business	no	ua	female	ua	national	Green-market	volunteer
29	Jana	consumer	no	student	female	30-34	international	consumer (NC)	single
30	Patrick	consumer	no	employed	male	50-54	national	customer Green-market (C W)	family
31	Peter	consumer	no	employed	male	44-49	national	C W	family
32	Rita	consumer	no	student	female	18-24	national	C W	single
33	Esther	consumer	no	student	female	18-24	national	C W, C T	single
34	Sara, Hans	consumer	yes	student	mixed	ua	international	C W	couple
35	Gemma	consumer	no	student	female	25-29	national	C W	single
36	Harriet	consumer	no	student	female	18-24	international	C W	single
37	Hector	consumer and business	no	student	male	ua	national	C W and TGTG (biz)	single
38	Belinda	consumer	no	employed	female	18-24	national	C W	single
39	Sonya	consumer	no	employed	female	34-39	national	C W	family

	Synonym	Group	Group interview	Employment	Gender	Age	Nationality	Type	Status
40	Sina, Harry	consumer	yes	student	mixed	18-24	mixed	C W	couple
41	Maya, Rupert	consumer	yes	student, employed	mixed	25-29	international	consumer (NC)	single
42	Theo	consumer	no	employed	male	35-39	national	NC	single
43	Hanna	consumer	no	employed	female	ua	international	NC	single
44	Wanda	consumer	no	employed	female	35-39	national	NC	family
45	Finn, Rosa, Arnas	consumer	Yes	student, employed	mixed	25-29	international	NC	family
46	Martin, Jana, Silvia, Stuart	consumer	yes, focus group	student, employed	mixed	26-45	mixed	NC	1 family, couples / singles
47	Bernd	consumer	no	employed	male	35-39	international	NC	family
48	Max	consumer	no	employed	male	30-34	international	NC	single
49	Helge	consumer	no	student	male	30-34	national	C T	single
50	Carl	consumer	no	employed	male	50-54	national	C T	couple
51	Susan	consumer	no	employed	female	45-49	national	C T	family
52	Henry, Finn, Steven	consumer	yes	student	male	ua	international	C T	single
53	Susi, Herbert	consumer	yes	student	mixed	18-24	international	NC	single
54	Nico	business	no	ua	male	ua	national	Niftie's	owner
55	Madleine	business	no	ua	female	ua	international	TGTG	employee

	Synonym	Group	Group interview	Employment	Gender	Age	Nationality	Type	Status
56	ua (several restaurants, unrecorded)	business	no	ua	mixed	ua	ua	non TGTG biz	employee
57	ua (no quotes used)	business	no	ua	male	ua	ua	non TGTG biz	store manager
58	ua (no quotes used)	business	no	ua	female	ua	ua	non TGTG biz	employee
59	Hannes	business	no	ua	male	ua	ua	TGTG biz	owner
60	Hadar	business	no	ua	male	ua	ua	TGTG biz	store manager
61	Jordon	business	no	ua	male	ua	ua	TGTG biz	employee
62	Hella	consumer	no	0-hour-contract	female	40-44	national	C N	single
63	Stella	consumer	no	un-employed	female	ua	national	C N	single
64	Martin	consumer	no	retired	male	ua	national	C N	single
65	Mia	consumer	no	employed	female	40-44	national	C N	family
66	ua (no quotes used)	consumer	no	ua	male	ua	national	NC	ua
67	Pepe, Gianluca	consumer	yes	employed	male	27-41	international	C N	family, single
68	Jacob	consumer	no	employed	male	ua	national	NC	family

	Synonym	Group	Group interview	Employment	Gender	Age	Nationality	Type	Status
69	ua (no quotes used)	consumer	no	employed	male	ua	national	NC	family
70	Sarah	consumer	no	employed	female	ua	national	C T	ua
71	Amir	consumer	no	student	male	18-24	international	NC	single
72	Conny	consumer	no	employed	male	25-29	international	NC	family
73	Helmut	consumer	no	unemployed	male	ua	national	C T	single
74	Mark	consumer	no	employed	male	ua	international	NC and C T	family

E) Code structure

Table A4: Final code structure (author) (see next page)

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
business perspective					
	business				
		development or plan			
		location			
		marketing			
		model			
		start			
	business success				
		challenge			
			amount of sales		
			education perception		
			food quality		
			get supply, external		
			lack of capital		
				facilities	
				mental exhaustion	
				no or slow investments	
				volunteers	
					expertise
					lack of staff
			lack of information		
			location		
			TGTG		
				app needed	

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
				disappointing customers or updating app	
				extra work	
				food quality or type of leftover not attractive	
				loss of sales	
				size or spread	
				still have leftovers	
		goes well			
			doing good		
			easy app		
			expensive food price originally, C saves money		
			good business partner		
			good food quality known		
			happy customers		
			having volunteers		
			layout shop		
			less food waste and more sales		
			location		

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
			marketing media support		
			personal connection relation		
			pricing or being cheaper		
			products that sell well		
			professional staff		
			repeat customers		
			rising number of sales or selling everything		
			win TGTG C as customers		
			win win situation		
	cost or profit or funding				
	perception of business purpose by biz rep				
		doing good			
		making money			

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
		social experience			
	reducing food waste				
		as business			
		have no waste			
	role of charity				
	stock or supply				
	super-markets				
	volunteers				
		incentives			
		motivation			
communi- cation					
	discovered by working at case biz or partner				
	discovered by internet				
	discovered by media as TV or newspaper				
	discovered by passing by				
	discovered by word of mouth				

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
	shared				
consuming surplus food					
	selling surplus food successfully				
contradictions					
data collection					
external factors					
	culture				
		caring culture			
		culture Copenhagen			
		doggy bag			
		poverty culture			
		upbringing			
	environmental education and attitude				
		climate change not man made			
		food waste is an issue awareness			
		no opinion or knowledge			

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
		others are responsible			
		responsibility to tackle environmental issues			
	location				
food waste at home or business					
	food waste bin				
	food waste business				
	food waste consumer				
perception surplus food					
	better or good quality for cheaper				
	cheap				
	dedicated for waste or saved from waste				
	expired, not willing to consume or buy				

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
	less valuable, lower quality, not fresh, as cheaper				
	not cheap enough				
	same as normal, fresher, more expensive food				
	shorter shelf life, need consume faster or become waste				
	still good to eat, to buy				
	unhealthy				
	worth to be frozen, kept and consumed longer				
reasons consumers					
	attitudes				
		best before date, eating stuff out of date			

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
		buys second-hand clothes			
		buying from reduced section			
		dumpster diving			
			direct open description		
			indirect mentioning		
			reasons to dumpster dive		
		environmentalism, ecology			
			buys organic		
			vegan or vegetarian		
		health			
		takes take-aways			
	awareness of shop				
	convenience				
		being busy			
		C mentions range as issue of convenience			
		knowing shop and offer			

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
		opening time			
		personal connection			
		proximity			
	experience				
		confusion			
		doing good			
		easy or simple			
		empowerment			
		experience as main motivation to use case biz			
		first impressions			
			first impression words		
		having time			
		inspiration and surprise			
		like normal cheaper supermarket or not different special			
		nice staff and social feel friendly atmosphere			
		normal			

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
		normal supermarket experience			
	food quality				
		appearance of food			
			contradictions		
			meaning appearance of food		
		freshness of food			
		not minding older or imperfect stuff			
			meaning imperfect		
	food safety				
	good idea concept				
		good idea but not use it			
	price				
		meaning price			
			accepting		
			bargain		
			empowering enabling upgrading		
			good		
			happiness		

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
			irresistible		
			not appealing		
		price as motivation to use case biz			
		price is important for shopping in general			
	quotes focus group				
	range of stock				
		having choice			
	reducing food waste as consumer				
		food waste reduction as main motivation to use case business			
	self-identity C				
		self-identity NC			
	shopping habit				
		not suitable with case concepts			

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
		suitable with case concepts			
	stigma				
	valuation of food				
	willingness to try or try again or try regular				
		high			
		is a regular			
		low			
		medium			
sensory data					
	feel				
		emotions			
			angry		
				angry about business as business rep	
				angry about environmental condition	
				C angry	
			content		
				culture more content people	
			disappointed		

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
				avoiding disappointing C	
				disappointed by C	
				disappointed C	
				never disappointed	
			happy		
				C have expectation for staff to be happy	
				happy about development case business	
				happy about more C	
				happy C, about surplus food, easy cheap access to good food	
				happy staff	
				happy supplier	
				happy to help	
			laughing		

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
				ironic or sarcastic laughing, with a negative touch	
				laughing at idea of using surplus food	
				laughing both	
				laughing from embarrassment	
			passionate		
				entrepreneurs or staff are passionate about food waste	
				passionate about environmental and health concerns	
			sad		
				feeling sad about case business	

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
				feeling sad for climate change happening and people not doing more	
			smiling		
		evaluating and choosing food by feeling it			
		feeling about and in case business eg when shopping there			
		feeling about surplus food			
		feeling bad for doing something			
		feelings of business representatives			
		feelings of consumers from business perspective			

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
		feelings when wasting food			
	look at				
		evaluating and choosing food by looking at it			
		evaluating food by its look			
		looking cheap			
		looking for			
		looking good			
		taking a look			
	see				
	smell				
		smell as a negative thing			
		smell to evaluate and choose food			
		things that override importance of smell			
	taste				
		being able to taste as positive experience or treat			

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
		loss of taste does not matter			
		taste causing a good or bad feeling			
		taste to evaluate and choose food			
		things that override importance of taste			
	touch				
shopping frequency					
	every day or every second day at least				
	less than weekly				
	more often than weekly				
	weekly				
TGTG					
type consumer					

Appendix Chapter 5

A) Sales records Wefood

The table on the next page (Table A5) shows the sales according to product group of the Wefood store in Nørrebro from November 2016 to September 2017. The most sold product groups are beverages, sauces, fruit and vegetables and bread (highlighted in the table). Data from the Wefood store in Amager are similar, also indicating that fruit and vegetables and bread are the most sold product groups. It has to be considered that volunteers at the cashier select the product groups manually. New products sometimes have not been entered into the cashier system and are booked as 'Diverse' (miscellaneous). Therefore, this category forms a big part.

Navn	%
Afskrivninger	0
Aviser og blade	0.05
Babymad	0.31
Brød	7.05
Brød Frost	1.46
Bøger	0.09
Chips/popcorn	0.83
Chokolade og Slik	6.24
Chutney/pesto/dressing/Sauce	12.88
Diverse (miscellaneous)	11.82
Drikkevarer (beverages)	14.97
Dyr	0.02
Frost	3.99
Frugt og grønt(fruit & veg)	12.44
Frugtbar/proteinbar	0.1
Færdigretter	0.43
Færdigretter Frost	0.05
Is/Dessert Frost	0.07
Kaffe Og The	2.35
kager	0.03
Kager Frost	0.02
Kiks/Kager/Søde sager	0.75
Konserves	2.16
Krydderier	0.47
Kød Og Fisk	0.01
Læskedrikke	0.63
Marmelade/Honning	0.52
Møjeri/mælkeprodukter	0.6
Mel, sukker og bagning	2.72
Momsfrit - Folkeaktier Wefood	0.16
Morgenmadsprodukter	2.36
Non-food Varer	5.92
Nødder/Kerner	1.49
Olie/smør	0.95
Pasta Og Ris	2.24
Poser	0.32
Sodavand	0.64
Surt/syltet	0.39
sæbe	0
Tørret frugt/nødder	2.22
Ældre varer	0.05
Øl	0.18

Table A5: Sales records Wefood (Wefood)

Personal development: Overview of participation at conferences, seminars, workshops and events during the PhD

2017

Conferences

- 04.04.2017 Coventry University Faculty of Business and Law, Postgraduate Researcher Symposium (poster)
- 03.07.2017 Academy of Marketing Conference, Doctoral Symposium in Hull (presentation, won a bursary)
- 11.07.2017 Coventry University Centre for Business in Society Conference 'The Circular Economy: Transitioning to Sustainability?' (co-organiser, poster, won 1st poster prize awarded by the Academy of Marketing)
- 14.11.2017 Coventry University Centre for Agriculture, Water and Resilience, '8th Annual Conference of the AESOP' (volunteer, participant)

Seminars, workshops and events

- 02.02.2017 Coventry University Sustainability seminar (participant)
- 23.05.2017 Coventry University Academic practitioner seminar (participant)
- 20.06.2017 Coventry University Centre for Business in Society seminar (presenter)
- 05.09.2017 Coventry University Woolworth Farming seminar (participant)
- 07.09.2017 UK Policy Forum Food Waste in London (participant)
- 13.09.2017 Economic and Social Research Council event in Lambeth (co-organiser)
- 15.11.2017 MM UK Flowers Sustainability department (visitor)
- 07.12.2017 Coventry University Final Workshop on Austerity Retail research project (participant)

2018

Conferences

- 06.04.2018 Coventry University Faculty of Business and Law,
Postgraduate Researcher Conference (poster)
- 24.04.2018 Coventry University Doctoral Capability and Development Conference
(poster)
- 27.06.2018 Future Earth Knowledge Action Network 'Systems of Sustainable
Consumption and Production' Working Group 'Communicating for
Sustainable Consumption and Production' Communication workshop
(participant, since then active member of the working group)
- 28.06. –
- 30.06.2018 SCORAI Conference (presenter, since then active SCORAI member)

Seminars and events

- 11.01.2018 Coventry University Household Food Waste seminar (participant)
- 16.01.2018 Coventry University Three Minute Thesis Competition (finalist)
- 01.05.2018 Keele University Food, Community and Sustainability Seminar (presenter)
- 14.11.2018 Coventry University Sustainability seminar (participant)
- 19.11.2018 Coventry University Circular Economy seminar (participant)

2019

Conferences

- 01.05.2019 Coventry University Doctoral Capability and Development Conference (presentation)
- 23.05.2019 Coventry University Faculty of Business and Law, Postgraduate Researcher Conference (poster, won 3rd prize)
- 20.06.2019 University of Nottingham 'The Future of Food Surplus, Food Waste, and New Models of Social Eating' (presenter)

Seminars and webinars

- 03.04.2019 New Economy and Social Innovation Forum 2019 webinar 'Healthier, more equitable and environmentally friendly food systems' (participant)
- 10.04.2019 Refresh webinar 'A collaborative approach to reduce food waste along the whole supply chain' (participant)
- 14.05.2019 Future Earth Knowledge Action Network Webinar on Belmont Forum White Paper (participant)
- 15.05.2019 Coventry University Centre for Business in Society seminar 'A Multilevel and Multidimensional Demand-side Approach to User Engagement in Green Technologies' (participant)

Former Certificate of Ethical Approval



Certificate of Ethical Approval

Applicant:

Lisa Ruetgers

Project Title:

Selling Surplus Food

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their project has been confirmed and approved as Medium Risk

Date of approval:

20 February 2017

Project Reference Number:

P51455