



The Renaissance of Reusable Food Packaging

Design Thinking as Basis for Creating Sustainable Service Models in Tampere

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ABSTRACT

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The Renaissance of Reusable Food Packaging
Design Thinking as Basis for Creating Sustainable Service Models in Tampere

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The purpose of this thesis was to create service model recommendations for reusable food packaging services in Tampere using customer-centric design thinking to identify consumer needs, values and pain points. The inspiration for the thesis topic came from the Waste Hierarchy used in the European Waste Directive, where waste reduction and reuse are seen as the highest priorities. The research was conducted in Tampere during the spring of 2022.

The research was conducted using a qualitative research method. 11 research participants were found by advertising in local social media groups and were interviewed using semi-structured interviews. The interviews were held remotely and one-on-one, and the data was analysed through thematic and basic content analysis. The interview participants' shopping habits, experiences with habit formation, and recycling habits were investigated. They were further requested to give their preferences or opinions on various topics related to products, sustainability, and reusable packaging.

According to the research results, the interview participants shared a common motivation to recycle and make sustainable purchases, even if the extent in which they succeeded in these behaviours was not uniform. They held differing views on some of the researched topics, but were largely unanimous in their views on sustainability, and their interest in reusable food packaging; all of the participants found the concept of reusable packaging to be an attractive idea with strong potential. The results of the research were gathered to form recommendations for elements that possible new, reusable food packaging services should include in their value propositions.

Keywords: circular economy, reusable food packaging, design thinking

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1 INTRODUCTION

The objective of this research is to create service model recommendations for reusable food packaging businesses in Tampere. This thesis will utilize customer-centric design thinking as basis for sustainability innovation, and thus develop viable recommendations for existing and future service businesses. In order to find practical solutions implementable in the industry today, the research scope will be limited to the Tampere and nearby area and to reusable food packaging related services.

The thesis is not done for a commissioner. The results of the thesis are intended for public use. The model recommendations will be based on analyses of existing scientific literature and primary qualitative research. The aim of the thesis research is to develop a complete picture of both the practical limitations and possibilities in a reusable food packaging service model, as well as the perceptions and needs of the selected consumer demographic, i.e., Tampere area residents, and to use these insights in creating knowledge-based and practical recommendations.

In addition to the thesis introduction, theoretical framework, research methodology, data analysis and recommendations, the thesis will include an introduction of reusable food packaging, the concepts of circular economy, service design and design thinking, and investigation of the relationships between these different concepts regarding the thesis goals.

This thesis topic is closely related to the key concepts of sustainability and circular economy, both of which are highly important - even urgent - as the gap between the current global sustainability measures and the sustainable development goals is widening. In the hierarchy of waste often cited in literature discussing waste recycling methods, prevention of waste is placed at the top, followed by, consecutively, preparing for reuse, recycling, energy recovery, and finally, disposal as the least preferred option. Many of today's sustainability campaigns focus solely on the lower tiers of this hierarchy, i.e., on recycling or energy recapture. The regrettable downside of these solutions is that resources and

energy are still being wasted in the production of new goods, and recycling and repurposing processes. Focusing on prevention and reduction of waste has a significantly bigger positive impact when assessing the entire life cycle of goods.

The thesis outcome - a reusable food packaging service model draft and related recommendations - will be public and free to be used by any business or organisation wishing to create a new service based on this outcome or elements of it. Additionally, the findings of this thesis may be used by existing businesses that wish to develop their services using a circular economy approach, and to move away from single-use packaging and switch to reusable packaging. This thesis aims to enable businesses to create sustainable services based on the circular economy approach of utilizing reusable food packaging. These services and products will hopefully become more accessible to consumers on a large scale, transforming the public opinion and, ultimately, assist in making reusable packaging the default option for industries in the future.

2 THESIS PLAN

This thesis plan includes a description of the thesis topic, the thesis purpose, and objectives – i.e., what will be the practical outcomes and goals of the thesis – as well as an introduction about the concepts and theory related to the thesis topic. Explanations about the concepts and theory will aid the reader in forming an understanding of the meanings, relevance and co-relations of different concepts and research methods. The thesis methods and an outline of the thesis project are also described in the thesis plan.

2.1 Thesis topic

The topic of this thesis is the development of service model recommendations for reusable food packaging related businesses in Tampere. This topic is inspired by a current and increasingly prominent issue: the sustainability challenges related to single-use plastic packaging. Reduction of single-use plastic waste is seen as a priority by the European Union, who have taken measures to both reduce the use of single-use plastics and to improve recycling processes to decrease the amounts in which the waste plastics end up in the environment (European Economic and Social Committee 2020, 10-12).

Food packaging is one of largest contributing sectors to plastic waste, which makes finding alternative solutions to single-use food packaging a goal with a potentially very high sustainability impact (Package-Heroes 2021). Reusable packaging is one of the possible solutions to the plastic waste problem (European Economic and Social Committee 2020, 24-27). This thesis aims to find ways that reusable food packaging can become more mainstream and, hopefully, a default option for the related industries in the future.

2.2 Thesis purpose, objectives, and research questions

The purpose of this thesis is to create recommendations for a new innovative service model for reusable food packaging services in Tampere. The model recommendations will be based on theories from and analyses of existing scientific literature, reviews of relevant specialist or industry articles, and qualitative research in the form of interviews. The thesis will utilize these findings in ideating and developing new service model recommendations. At the end of the thesis, certain measured speculations as to how such innovative service models could be adopted in food packaging services, can be made.

The aim of the thesis is to form an overview of both the practical limitations and possibilities of reusable food packaging services, as well as the perceptions and needs of the selected consumer demographic, i.e., Tampere residents, and to use these insights in creating knowledge-based and practical recommendations. Thus, the thesis will have a multifaceted approach: the aim is, on one hand, to provide useful insights and recommendations for reusable, sustainable food packaging services; on the other hand, to develop these recommendations with the benefit and needs of the consumers close at heart. Overarching these individual points of view is the key concept of sustainability, which is crucial for both industry and consumers to embrace as the need for finding sustainable solutions is universally recognised as beneficial to all, and more pressing now than ever.

What will also be given sufficient attention to is the role of consumers' attitudes regarding sustainability and the impact they perceive sustainable behaviours to have. Thus, in the research of this thesis, it will be important to address the question whether consumers feel cynical or optimistic about the sustainability impact of their behaviours. The research will also strive to find out what would need to happen either in the consumers' personal views, the service, or the circumstances, for them to begin using such a service habitually. Identifying obstacles that lie between consumers and their adoption of new sustainability-enhancing services is one of the goals this thesis aims to accomplish.

Based on all that has been stated above, the main research question of this thesis is formed as follows:

“What kind of reusable food packaging service model would be the most sustainable, successful, and attractive to consumers in the Tampere region?”

Additional research questions which help further define the research focus are:

“What properties and characteristics of food packaging and related services do consumers value?”

“What are the practical limitations and possibilities when developing a service model based on reusable food packaging?” and,

“What are the factors that influence consumers’ willingness and ability to adopt new sustainable habits?”

The main research question helps define the focus of the research and maintain the correct focus when moving forward in the thesis research. The main research question incorporates the practical aspects of product-related service model creation, the importance of getting to know the consumer perspectives, and combining these into sustainable solutions. The additional research questions help to further identify areas where attention should be paid, such as the consumer perceptions of food packaging services and how other factors may inhibit or aid the success of such services.

2.3 Concepts and theory

In this section, the relevant concepts are explained which form the foundation for the thesis outcome: recommendations for a new, sustainable service model related to reusable food packaging. The concepts are related to sustainability and circular economy, design thinking and service design, and the psychology of new habit formation. These concepts open essential aspects of reusable products and related services as well as the end user -related factors impacting their success. They give invaluable insights for creating a practical, viable and consumer-centred service model.

2.3.1 Circular economy

The primary focus of this thesis is to discover more sustainable solutions in the form of reusable food packaging services. One of the central concepts within sustainable development is circular economy (CE). Circular economy as a concept began forming in the 1990s (Charter (ed.) 2018, 1-2) as the ideologies of resource efficiency and eliminating waste first became popular, one example of these models being the Japanese lean methodology (Lean Enterprise Institute n.d.).

CE currently lacks a universally agreed definition (Kirchherr, Reike and Hekkert 2017, 221) but can be described as a model aiming for minimization of waste in all its forms and maximizing the lifetime of a material or product to keep its resources in use for as long as possible (Ellen MacArthur Foundation n.d.). CE can be defined also by comparing it against its counterpart, linear economy (LE). In LE – currently the default framework in the global economy – resources are taken from the environment, manufactured into materials or products, used, and then disposed of, whereas in CE materials and products are returned to the cycle through e.g., reuse, repurposing, or remanufacturing with the least possible loss to resources (Ellen MacArthur Foundation 2022).

These strategies of circular economy are visualized for example in the 9R Framework adapted by Kirchherr et al. (2017, 224) (Figure 1). The 9R framework is one of the more nuanced frameworks modelling circular economy strategies,

and not as common as the simpler 3R framework with the now ubiquitous slogan 'Reduce, Reuse, Recycle'. The 9R Framework visualizes the differences between CE and LE and highlights the impact of each strategy toward circularity. In this framework the differences between the circularity level of Recycling and that of Reuse become obvious: Reuse is ranked close to the top at level R3, while Recycle sits in level R8, just above energy recovery through incineration. This difference is explained by the energy and resource expenditure that goes into processing and remanufacturing recyclates – a process which is currently highly energy-intensive and results in materials with largely lower quality and limited lifetime (Allwood 2010, 446).

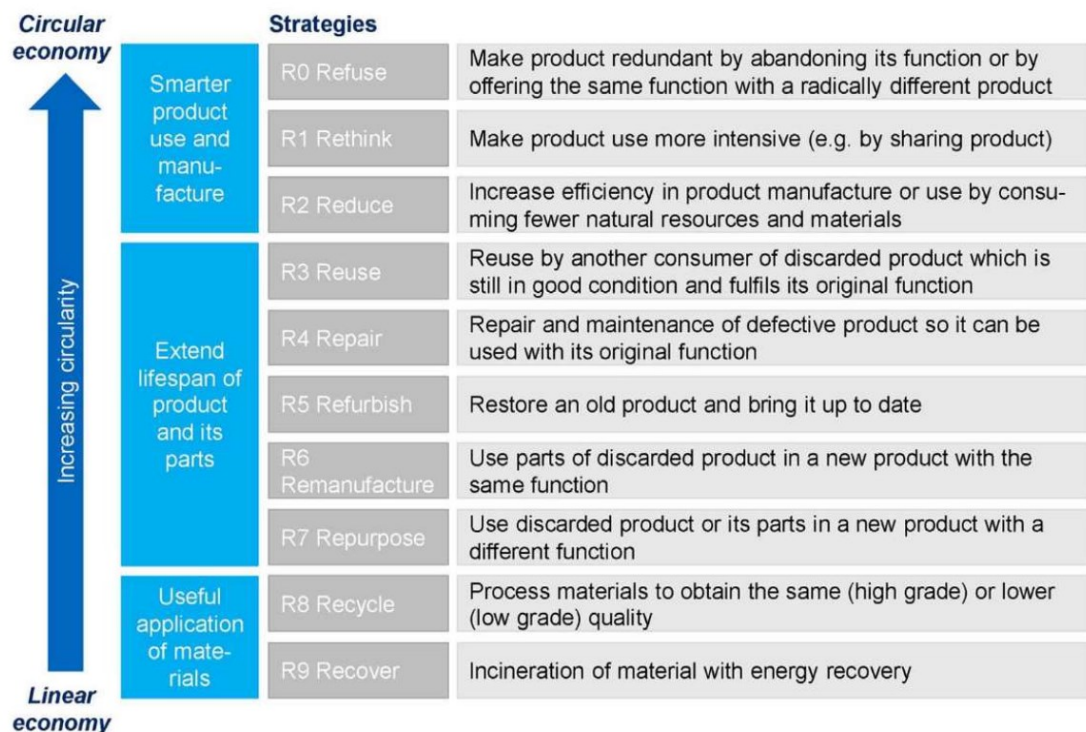


FIGURE 1. The 9R Framework (Kirchherr et al. 2017, 224)

Design for circularity can be seen as an essential part of CE. Current sustainable development efforts often focus solely on the end of a product's life cycle, causing the materials to still be quickly downgraded and resources and energy thus wasted (Ellen MacArthur Foundation n.d.).

Ellen MacArthur Foundation (2017) identifies three core principles in CE: designing out waste and pollution, keeping products and materials in use, and regenerating natural systems. According to Ellen MacArthur Foundation (2017),

up to 80 percent of products or materials' environmental impacts result from decisions made in the design stage. CE can be realized by designing products in ways that not only maximize their lifetime, but also minimize the waste caused by their manufacturing, use and eventual disposal. (Ellen MacArthur Foundation 2017.)

Reusable packaging, being a solution in accordance with CE principles, is the packaging type for which this thesis aims to develop feasible service model recommendations. When observing the earlier mentioned CE frameworks, the circular economy value of reusability over recyclability is clear, thus making reusable packaging a justifiable choice when developing new innovations within the food packaging industry.

Circular economy principles can and should be considered in design processes as well; the goals of waste minimization and process optimization give a vantagepoint from which products or services can be designed with their entire lifetime in mind, enabling the designer to plan for circularity in every stage of the products' life cycle. Utilizing design in CE problems is indeed becoming increasingly common (Guldmann, Bocken & Brezet 2019, 40).

It is vital to note that while this thesis focuses on the service model and consumer needs perspective, circularity of the new product must be considered together with the development of the new service model; a reusable food packaging related service business cannot be in line with CE goals without their product design following the same principles.

2.3.2 Design thinking

This thesis will utilize the concept of design thinking to create innovative solutions based on a deep understanding of the consumer needs and perspectives. Design thinking characteristically combines customer-centric ideation with iterative testing of hypotheses (Tschimmel 2012, 3) and – while originally being developed in the design industry – is nowadays used in numerous fields ranging from service design to organizational development or engineering (e.g., Tschimmel 2012, 2).

The Design Thinking framework presented by Luchs (2015, 4) contains two main phases: 'Identify' – recognizing the problem worth solving, and 'Solve' – using creativity to find innovative solutions to the identified problem (Figure 2).

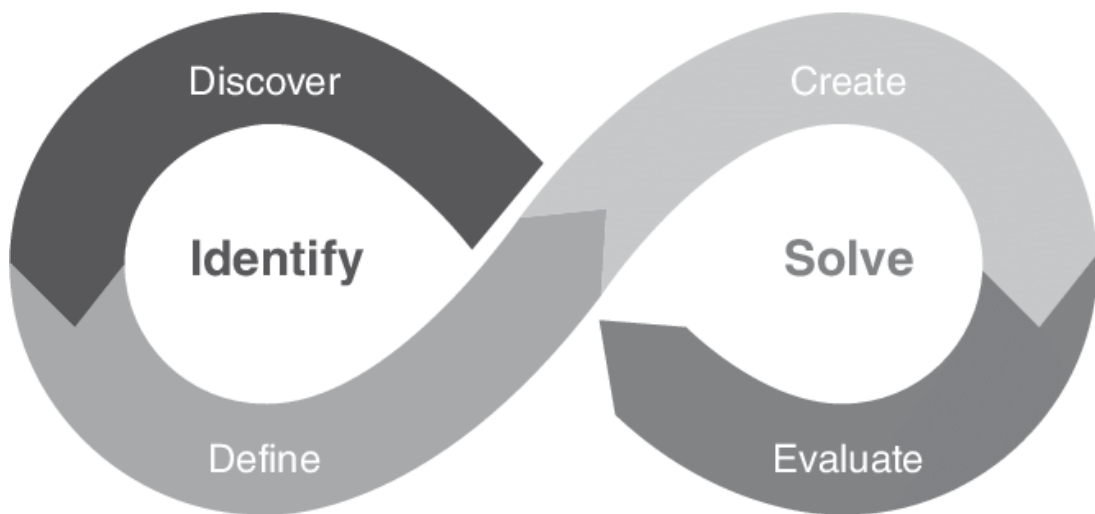


FIGURE 2. A framework for design thinking (Luchs 2015, 4)

As stated by Luchs (2015, 4), teams working on such projects often overlook the phase of correct problem identification, thus missing the most powerful aspect of design thinking. The correct identification of the problem correlates strongly with empathy or human-centeredness in modern design thinking (Tschimmel 2012, 4): understanding the customer and empathizing with them is the soil from which all later phases can properly grow and bear fruit.

While there are many forms of design thinking processes, with varying emphases and strengths (e.g., Tschimmer 2015, 6-10), there are some models that are especially useful in interdisciplinary projects, such as the Double Diamond model created by the British Design Council (Design Council 2015) (Figure 3). The benefits of this model include a visual, comprehensive model, and clearly defined design stages which are well suited also for non-designers. The model also emphasizes well the iterative nature of the process, as well as the importance of stakeholder engagement and leadership (Design Council 2015).

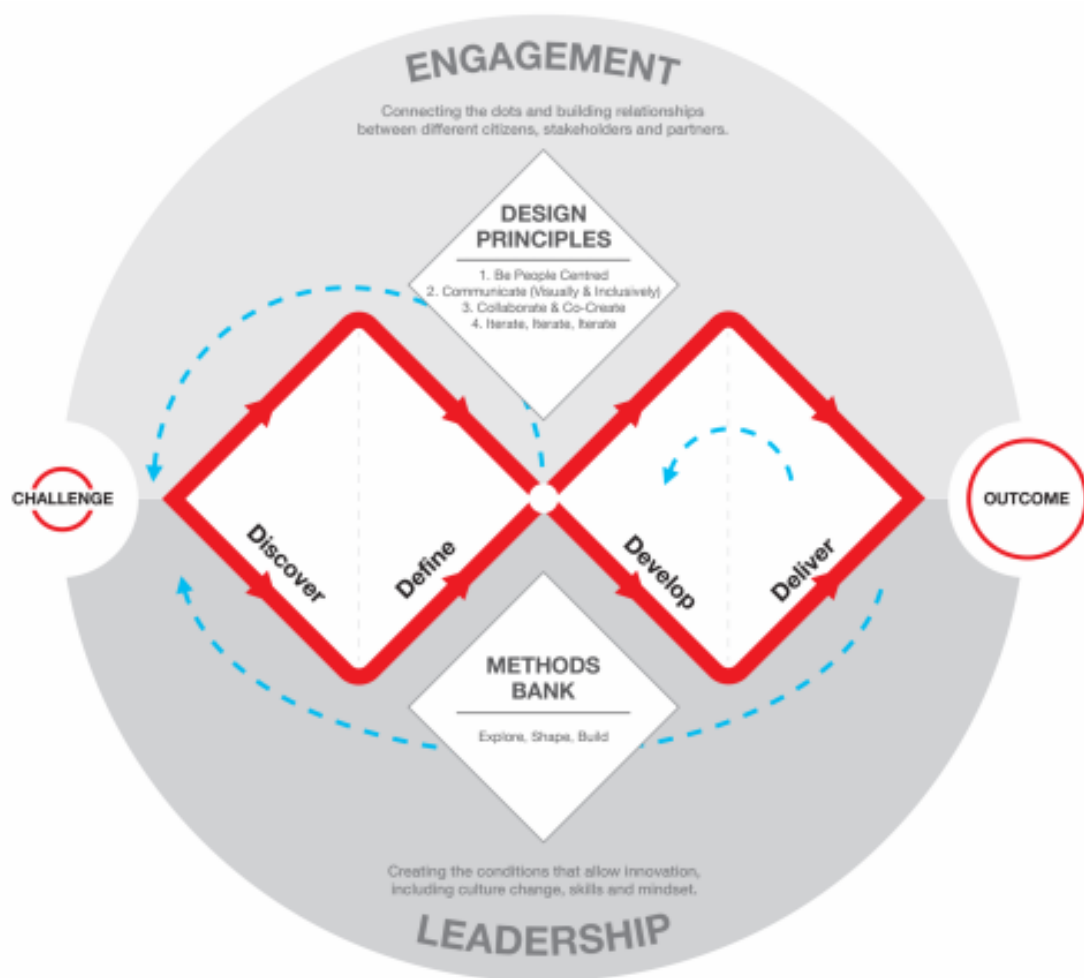


FIGURE 3. The Double Diamond model (Design Council 2015)

The Double Diamond process stages are shown in two diverging and converging lines, forming the distinctive diamond shapes, and presenting the four different stages, each either 'spanning out' as new ideas or possibilities are explored, or 'coming together' when certain solutions are chosen for further development.

In the first 'Discover' phase, the main objective is to gain an understanding of the issues people face by discussing with them or otherwise gaining information from them. The second phase, 'Define', is done by using the knowledge and understanding gained in the first phase to clearly define the issue. In the third 'Develop' phase, new answers are sought to the defined challenge, by searching for new ideas or through interdisciplinary cooperation. The fourth 'Deliver' phase sees these different solutions being tested, cut, and modified, and finally one chosen solution being delivered. The process may have multiple iterations of different phases, as solutions may be e.g., taken back to better understand the problem or to solve issues raised in the later stages. (Design Council 2015.)

In this thesis, the design thinking concept will act as a practical framework for planning the thesis' consumer research, data analysis and later service model ideation and development. It will enable the thesis work to be focused on 'the right problems', i.e., issues identified through careful investigation of the consumer research data. Some level of iteration and proof-of-concept testing focusing on the 'Discover' and 'Define' phases of the Double Diamond process may be done during qualitative interviews for the thesis, but a full design innovation project will need to be conducted by any business aiming for a real-life service offering in the future.

2.3.3 Service design

The concept of service design closely resembles the framework of design thinking: designing from the human viewpoint, to create value for the customers and other stakeholders in the best possible way (Kurokawa 2015). According to Polaine, Løvlie and Reason (2013, vii), however, service design is more action-oriented and more focused on implementation. Service design spans the entire customer experience. It is a method of developing services from a holistic point of view, aimed at solving both the customers' and service providers' issues and pain points, and ideating, testing, and improving on the service experience as a whole (Interaction Design Foundation n.d.).

According to Polaine et al. (2013, 19-22), one of the big challenges for companies striving to improve their services is that the customer may experience the service in pieces; siloed operations in a company may cause even good service given at one point of the customer journey to be experienced as fragmented and disjointed. Polaine et al. (2013, 22) also point out that even companies that see selling products as their main activity also often have services as a main value proposition visible to the customer. Therefore, a holistic service design perspective is needed when developing new services, even if the value proposition is product oriented.

2.3.4 Habit formation

An important addition to the thesis' theoretical framework, maximizing the solutions' chances to be successful in real-world adaptations, will be the focus on consumer behaviours and new habit formation. Using insights from this psychological concept to understand consumer behaviours and changes in them will provide a more profound foundation on which to develop a successful sustainable service model, especially as such a reuse-based service may require consumers to adopt completely new behaviours for it to be successful.

In their study on the relationship between habit formation and self-control, van der Weiden, Benjamins, Gillebaart, Ybema, and de Ridder (2020) describe that when a behaviour is first performed, the behaviour starts with a certain context – an internal or external stimulus – triggering a specific action. Once the action is completed, it is followed by a reward. This model has been popularized, among others, by Charles Duhigg (e.g., 2013) in his books on habits. For a behaviour to become a habit, it requires repetition of this cue-behaviour-reward system. The study by van der Weiden et al. (2020) found a strong correlation for habit strength and the consistency of repetition. Each time performing the behaviour, the neural networks connected to the cue, action and its subsequent reward are strengthened. Once a habit is formed, maintaining it requires less cognitive effort and is performed on a certain level of automation. (van der Weiden et al. 2020.)

A new habit does not necessarily form easily; a person may typically have several other sets of automatic behaviours in place, which can be resistant to change. Adopting new behaviours, such as purchasing and returning reusable packaging, would require the consumers to change the ways they have acted before. More sustainable actions may also require additional work or effort from the consumers, which may make the new behaviours even more difficult to sustain. A habit-forming method named 'Tiny Habits' by behavioural scientist Fogg (2019) approaches this issue by incorporating new behaviours with existing automated habits. According to Fogg (2019, 13) incorporating a small new behaviour to an existing habit includes three stages: an anchor moment – an existing habit which acts as a cue for the new action; behaviour, or the performing of the new action; and finally, celebration – celebrating or congratulating oneself for successfully

performing the new action. The anchor moment in this method acts as the external stimulus which was described by van der Weiden et al. (2020). In his book, Fogg further describes human behaviour to, essentially, be a combination of three elements: motivation, ability, and prompt. The Fogg Behaviour Model based on these elements – whether the individual has motivation and the ability to perform a specific behaviour, and whether they are at that moment also prompted to do the behaviour by some internal or external reminder – highlights the need for all three parts to be in place before a behaviour can occur (Fogg 2019, 19).

Another important aspect in new habit formation is how the habit correlates with one's identity (Verplanken & Sui 2019). According to Verplanken and Sui (2019, 8-9), behaviours that are more closely connected to a person's identity or values may be more likely to be successfully maintained. This was especially true for people who see their habits in general as more closely representative of their self-identity. Therefore, new habits related to sustainability are more likely to be embraced if the target consumers see themselves as sustainably behaving people, and if they see the new habits as supportive of that identity.

2.4 Working methods and data

The working methods of this thesis are decided on based on the requirements of the thesis objective: finding out customer needs and views in order to develop recommendations for an innovative service model. The defined target group are consumers in the Tampere region.

The service model creation process requires that we first look at the consumers: understanding consumer needs and identifying problems and wishes from their point of view will provide the grounds for further ideation and development. To know the customers, qualitative research will be conducted in the form of consumer interviews. For the purposes of this thesis, it was concluded that qualitative research is preferable over quantitative research, even when weighed against loss of quantifiable data; the qualitative research approach will be able to provide a deeper understanding of the consumers' perspectives, hopes, and

needs regarding reusable food packaging, as well as to allow for emerging ideas or yet unidentified experiences and opinions to be collected during individual interviews. The interviews will be conducted using a semi-structured interview format. In semi-structured, individual interviews the participants will be able to share their thoughts freely without being restricted by a closed question format, while still being partially guided by the interview questions.

2.5 Thesis process

The thesis begins with an introduction of the topic in the first chapter. The second chapter contains the thesis plan, where the thesis topic's objectives, purpose, and goals are explained, and the central concepts and literature related to circular economy, design thinking, service design, and habit formation are introduced. The chapter goes on to describe the thesis research methods and the thesis process.

The third chapter will take a closer look at food packaging, including a more detailed view on packaging waste issues. The chapter will continue to focus on reusable packaging and the opportunities and challenges specifically related to reusable food packaging. In the fourth chapter, the research method and research process including analysis will be described. The fifth chapter will look at the data and findings gained from the research and will present analysis of the data. Finally, the sixth chapter will include conclusions and recommendations based on the research.

3 REUSABLE FOOD PACKAGING

In this chapter, the definitions and characteristics of reusable food packaging are explained, along with a general introduction of food packaging. The reader is also given an overview of food packaging -related environmental concerns and legislation, especially regarding the single-use plastic packaging so ubiquitous in the industry today. In connection with reusable food packaging, the concept of reverse supply chains is introduced, which should be given special consideration when developing new reuse-based services.

3.1 Food packaging, overview

The use of packaging is prevalent in most food categories and products (e.g., Robertson 2016, 1-3). Packaging is commonly divided into four classes: primary packaging, which is directly in contact with the contents; secondary packaging, which is used to transport and sometimes display the primary packaging; tertiary packaging, which includes e.g., pallets used to transport multiple units of secondary packaging; and quaternary packaging, typical example of which are the large metal containers used in long distance or international transport (Robertson 2016, 2). This thesis focuses on primary packaging, i.e., packaging which is directly in contact with the contents.

Packaging can be further divided into single-use and reusable packaging. Single-use plastic packaging – designed to be used once and then discarded – has in the past few decades taken over as the food packaging option of choice due to its cheap price, convenience, superb protective properties, durability, and adaptability to a multitude of different uses; this popularity now shows in the vast amounts of plastic waste produced annually (e.g., World Economic Forum 2016, 6; Statista n.d.). Food safety regulations in the European Union determine what kinds of materials can be used in such packaging, as well as to the levels of chemical migration – the rate at which chemicals may be transferred from the packaging material onto the food due to direct contact (Regulation (EC) No 1935/2004; EFSA n.d.).

3.2 Reusable food packaging

Reusable packaging is defined by the European Parliament and Council in their directive as “packaging which has been conceived, designed and marketed to carry out multiple trips in its lifetime by being refilled or reused for the same purpose for which it was conceived” (Directive 94/62/EC 1994).

Reusable food packaging solutions are not yet very widely in use, although various reuse- or no waste -based services exist around the world. Some businesses also in Finland offer reuse-related services: there are a number of restaurants where customers are welcome to buy food into their own containers, and restaurants which offer reusable lunch boxes for a deposit and can then get them returned by the customers (e.g., KamuPak 2021; Ravintola Factory n.d.). Globally there exist a wide range of service model approaches, such as no waste shops, where customers are expected to bring their own containers, and subscription-based services where products are delivered to customers in reusable packaging and later collected through the same service.

When designing services based on reuse, special attention should be given to the requirements arising from reverse supply chains: supply chains directed from the consumer back to e.g., the service provider or manufacturer (Ferguson & Souza (eds.) 2010, 68). In the research of this thesis, reverse supply chains are considered to the extent that they are visible to, or relying on, the customers. Special consideration is given to how the service models may be developed, so that customers will be best able to prepare the packaging for reuse and thus close the loop.

3.3 Issues and legislation related to food packaging

There are severe environmental concerns related to single-use plastic packaging: In the EU area, approximately 35 kg of plastic waste is produced annually per capita, less than 15 kg of which gets recycled (Eurostat 2022). The world economies have begun to realize the severity of the issues this ubiquitous packaging material has caused, as the landfills and the environment have filled

up with non-degrading plastic waste. The need to find new solutions to this issue, reuse among them, is declared urgent by many and has been set as a high priority goal also on the European Union level (e.g., Directive 94/62/EC 1994).

The thesis topic, reusable food packaging services, was inspired by the Waste Hierarchy used by the European Commission in their Waste Framework Directive (Figure 4). It is an urgent goal of the EU to find ways to reduce plastic waste, and this is especially relevant when it comes to single-use plastics. Reuse of products or packaging offers one very effective solution to this problem by directly reducing the amount of plastic waste produced. (European Commission n.d.)



FIGURE 4. Image of waste hierarchy (European Commission n.d.)

In this model of hierarchy of waste, prevention of waste is placed at the top, followed by, consecutively, preparing for reuse, recycling, energy recovery, and finally, disposal as the least preferred option. Many of today's sustainability campaigns focus solely on the lower tiers of this hierarchy, i.e., on recycling or energy recapture. The regrettable downside of these solutions is that resources and energy are still being wasted in the production of new goods, and recycling and repurposing processes.

4 DATA COLLECTION

In this chapter, the chosen research method of this thesis is introduced, and the process and ways of collecting the data are explained in further detail. The objective of this research was to discover which reusable food packaging -related service models or value propositions may hold the most potential to be successfully introduced to consumers in the Tampere area. Data collection and analysis of that data needed to be conducted to find answers to this research question. Primary data was gathered in the form of one-on-one interviews during April 2022. The data analysis and results of the research are presented in the fifth chapter.

4.1 Justification for qualitative research

The research for this thesis was conducted as qualitative research. Qualitative research formed over several decades as a method complimenting quantitative research methods (Bailey 2014, 169-178). Whereas quantitative research gathers and analyses numerical and statistical data to come to conclusions, qualitative research aims to find information and insights which could not be collected through strictly framed questionnaires.

There are different ways to describe the goals of qualitative research. It can be said that qualitative research answers the questions of 'what a subject matter is', while quantitative research is used merely to measure the magnitude of that subject matter (Wertz, Charmaz, McMullen, Josselson, Anderson, & McSpadden 2011, 2). One example of such qualitative knowledge would be phylogenetics, classification of animal species and their interrelatedness. Wertz et al. (2011, 2) see qualitative knowledge – knowing what something is – as the foundation upon which quantitative research can be built. According to Wertz et al. (2011, 3), the qualitative knowledge we obtain through everyday experience and learning may often be taken for granted, and this may even risk our ability for objective

research: not questioning what we know about a subject, its structure or its significance may lead to prejudice or assumptions about the subject under scrutiny.

On the other hand, many sources (e.g., Busetto, Wick & Gumbinger 2020) see qualitative research as, rather, answering the questions of *why* and *how* the subject matter is seen in a certain way. What may be concluded from these slightly differing viewpoints is that qualitative research aims to deeply understand the subject matter and its essence, retaining a stance of self-criticism and openness, without relying on assumptions.

Due to the nature of this thesis' goals – seeking a deeper understanding of consumer perceptions and looking for novel solutions for services that are not currently well-established – a qualitative research method was deemed to be best suited for the project. Furthermore, for the goals of this thesis, the methods of thematic analysis (e.g., Braun & Clarke 2006, 79-80; Nowell, Norris, White, & Moules 2017) and, to a limited extent, content analysis (e.g., Drisko & Maschi 2016, 1-6) were chosen as best serving the purpose of gathering genuine consumer insights. Thematic analysis is generally used to search for and identify themes or patterns in the research data (Braun & Clarke 2006, 79). Basic content analysis is used to, e.g., measure the prevalence of certain key words or phrases in the data (Drisko & Maschi 2016, 3). In this thesis, basic content analysis was used to identify certain ideas, thoughts, or concepts which were mentioned more often than others, thus offering a more comprehensive view of the interviewees' collective values.

4.2 Interviews as data collection method

One natural and commonly used method of data collection for qualitative research are interviews. When preparing to conduct qualitative research as interviews, the question of how to choose the sample size, i.e., the number of interviewees for the research, is one often asked among students and academic professionals alike (e.g., Baker & Edwards eds. n.d., 3).

A commonly shared view is that data saturation is perhaps the most useful measure for determining sufficient sample size. This was, for example, stated by Harry Wolcott in his response to Baker et al. (ed.s, n.d., 3-4): “The old rule seems to hold that you keep asking as long as you are getting different answers, and that is a reminder that with our little samples we can’t establish frequencies, but we should be able to find the RANGE of responses.” In this light, for this thesis it was determined that the interviews would be conducted for as long as new kinds of responses kept arising. The number of interviews was also naturally limited by the time constraints of the thesis process, as well as the willingness of people to take part in a long one-on-one interview. In the end, 11 interviews were held for the research, which provided a wide range of responses sufficient for further analysis. The interviews were conducted in a flexible and conversational manner, allowing the interviewees to respond more openly, and the interviewer to gather more information about different topics as they might arise.

4.3 Interview setting

The interviewees were offered a chance to take part either via online or video interviews, in-person interviews in the city centre, or telephone interviews. The purpose for the range of options was to ensure that participants would not refuse to take part due to too strictly limited interview settings, as well as to ensure participants had access to as flexible times for interviews as possible; meeting the researcher in person may, for many, be both more time consuming and more difficult to arrange than a video meeting or phone call.

All the 11 interviews were, in the end, conducted remotely. Almost all the participants opted for a video interview. One interviewee requested for a telephone interview, and two others had to be changed from video to telephone interviews due to issues with audio connections during the video meetings. The interview durations ranged between approximately 40 and 90 minutes. The interviews were audio recorded to create text transcripts of the interviews.

4.4 Data protection measures

All the data collected in the process was stored securely in data storage locations protected by two-factor authentication. The interview participants were informed that the interviews and the participants' data would be handled anonymously. The interviewees were informed that they have the right to request for their data be removed and their participation in the research cancelled at any point before, during or after the interviews. The interviewees were told that an audio recording would be taken of the interviews. All the interviewees were asked and gave their consent to take part in the research before starting the interviews.

4.5 Research reliability and target group

The research was designed to discover solutions to services for consumers in the Tampere region. For this reason, the interviewees were sought among Tampere and nearby area residents through social media, i.e., Facebook. The interview invitations were published in three different local Facebook groups to reach a variety of target group demographics. The chosen Facebook groups were the three largest groups with Tampere as their special focus. The predominant language in two of them was Finnish, and one English. The interviewees were sought among both Finnish- and English-speaking populations in order to gather data also from international residents; although the percentage of foreign citizens in Tampere is not high – slightly over 3 % (Tilastokeskus n.d.) – designing service solutions with both native and non-native residents in mind will both enable the services to reach a multicultural audience at the early stages, and provide better opportunities for internationalization at later stages in the solutions' development.

The qualifying factors for participants were determined as:

1. People who are Tampere area residents
2. People who usually do their household's grocery shopping
3. People who are at least somewhat interested in sustainability.

Based on these qualifying factors, and the style of the written language generally suitable for social media audiences, the interview invitation was published in each of the three groups either in English or Finnish in the style shown in Figure 5.



FIGURE 5. Interview invitation Facebook advertisement in English

The three qualifying questions were included in the interview adverts to limit responses only to the defined target group. Additionally, the invitations intentionally contained phrasing which encouraged participation also among people who may not always make sustainable choices. As the objective of this thesis was to make new sustainable services feasible and most likely to be embraced by consumers in real-life situations, the insights of those consumers who may consider themselves ‘imperfect’ regarding sustainability actions were an invaluable addition.

The interviewees who took part in this research represented different age groups, genders, nationalities, employment and family statuses, and were as such sufficiently representative of the whole target group. Additionally, the author

made extensive effort to remain objective and thorough when conducting the research. Therefore, the research and its outcomes can with confidence be seen as reliable.

4.6 Interview design

The interviews were conducted as one-on-one, in-depth interviews with a semi-structured interview guide (Appendix 1) used as basis for discussion. The interview questions were designed to find out information and consumer opinions on three key areas of interest: current habits, existing values, and views on reusable packaging. These areas or themes are described in more detail in the sixth chapter.

The questions were planned so that they would progress from more general questions to specific: From questions about everyday shopping habits, to values related to shopping and purchase choices, then to perceptions about recycling and recycling habits, then to views and preferences on aspects related to reusable food packaging. The order of the questions was designed so that it would allow interviewees to think about each area without being influenced or unintentionally guided by, for instance, specific reuse-related questions at the early stages of the interview. Each interview followed roughly the same interview structure, with only minor changes made between interviews, and some minor things in e.g., question phrasing being edited for clarity.

At the beginning of each interview, the participants were given a brief introduction explaining the interview format and describing the progression from general topics to more specific areas. The interviewees were also explained that the interview would have a format more closely resembling a conversation than a questionnaire and were told they were free to give long answers, divert from the original question or pause to think if needed. This seemed to be a beneficial approach, and at least one interviewee commented afterward that they had felt free to think more deeply about their answers due to this initial guidance.

5 RESEARCH ANALYSIS

This chapter describes analysis of the data acquired in the interviews. The data was analysed using thematic analysis as the main analysis method, while content analysis was used to study the prevalence of certain code words or phrases among responses to selected interview questions. The findings were organized around the key themes introduced in the previous chapter. The final recommendations are presented in the sixth chapter.

5.1 Analysis process and methods

In total, 11 interviews were held for the research, which provided a satisfactory range of responses. During the analysis process, the interviews were transcribed, and the interview responses then condensed and charted into a data sheet. Words and phrases corresponding to the key themes were highlighted and their meaning investigated. The themes were further studied following the thematic analysis principles (Nowell et al. 2017). During the data collection and analysis process, the author also wrote their own notes regarding the interview discussions, and their interpretations of specific sections of the interviews. While a certain amount of interpretation is characteristic of all qualitative data analysis (Willig 2017, 274), from the interview data it was possible to clearly identify concepts and themes relevant for the research, thus allowing for conclusions to be comfortably based on gathered evidence.

The first key theme – current habits – was chosen to observe the interviewees' existing habits and to identify how new behaviours may be integrated with them, in accordance with the Tiny Habits method by Fogg (2019). The questions related to this theme investigated the consumers' existing habits regarding shopping, recycling, and waste management. Habits related to their recycling and waste management habits as well as their everyday shopping habits were important areas of interest also due to the special nature of reusable packaging's reverse logistics network requirements (Ferguson & Souza 2010, 68-78). To discover potential service model solutions, it was necessary to identify how new reverse

logistics -related activities may be integrated with consumers' existing habits. Because of how reverse logistics function, it was not enough to know how consumers transport the items home; it was equally important to know how they transport items such as recycling or return bottles out of their home again. By getting information about interviewees' everyday recycling habits, it was possible to determine points in their existing habits where a new reuse-related return behaviour or cue might be best inserted.

The second key theme were values and value conflicts. Consumer habits and perceptions are, perhaps, too ingrained or automatic to allow for accurate expression of their value conflicts. This is because a consumer may well have an unfulfilled need, an underlying value conflict, but they may not believe that that conflict can be solved (Flores Letelier, Spinosa & Calder n.d., 5). Thus, consumers may not even think of asking for solutions to that need. It was therefore important to correctly identify these needs and unidentified value conflicts and discover viable solutions which could meaningfully resolve the consumer's value dilemma. To do this, it was essential to identify conflictions, found through keywords or phrases in the interviews reflecting values, such as 'responsible', 'respectable', or 'successful'; but also, other keywords that mirrored these values – words describing contempt, e.g., 'lazy', 'crazy', or 'failure'. Such keywords or phrases could reveal perceptions and attitudes of the interviewee, and more importantly, potential hidden conflicts between the interviewees' inner values (Flores Letelier et al. n.d., 5-7).

The third key theme were the interviewees' views on reusable packaging. This theme could be used to explain how the interviewees saw the concept of reusable packaging and related services, and to give preliminary insights as to which service elements were perceived as the most appealing by the interviewees. This information was collected through questions gauging interviewees' knowledge and experiences of buying reusable packaging, their preferences on potential product categories or packaging materials, and on which service model examples – or elements of them – the interviewees found most appealing.

5.2 Results

The data analysis was done based on the interview data gathered from 11 one-on-one interviews. In these results the interviewees are introduced as a group, and their views explained through observed views and concepts, and with the help of selected quotes from the interview transcripts. The interviewees quoted in this thesis are referenced only by assigned interviewee numbers to maintain their anonymity.

5.2.1 Interviewee group

The interview participants represented a heterogenous group of Pirkanmaa residents. The group consisted of both men and women from multiple nationalities, their ages ranging from 24 to 53. They reported most often working fulltime, but some were either studying, unemployed, working parttime or for their own business. 64 % of the interviews were held in Finnish and the remaining 36 % in English. The participants' households varied from single households to families with multiple children.

5.2.2 Current habits

When describing their usual grocery shopping habits, the interview participants most often stated that they usually shop at big supermarkets. Most participants do not plan the time of their shopping beforehand, but rather decide on the shopping trips when they recognise food or specific items are low in stock. For most, the typical shopping experience is not stressful, even though the COVID-19 pandemic has changed more than one participant's habits so that they have begun to avoid rush hour and crowded shops more carefully and have stopped spending 'unnecessary' time inside the shops. For many, it is only *one chore among others* (Interviewee 9).

A typical shopping trip most often happens from their home, although there was strong variation within the responses. Others prefer to do their shopping on the way home from work, especially if the shop is located near their route. Regardless of the routine, a theme of personal convenience emerged from the responses:

the participants had found different – sometimes drastically so – ways of shopping that suited their personal lifestyle and habits and reported that the task felt fairly easy and stress-free to them, regardless of the actual effort required from each individual. These ways of shopping ranged from some interviewees driving by car to do the shopping during quieter business hours, to one interviewee using a bicycle for all shopping trips and having to adjust their timetables and shopping lists to accommodate their method of transportation. This finding was consistent with the research of e.g., van der Weiden et al. (2020); the interview participants seemed to have formed varying habits which had become automatic to them, thus reducing the cognitive load connected with the behaviour. The interview responses also bore some resemblance to the habit-identity connection research by Verplanken and Sui (2019, 8-9): the interviewee who always used a bicycle did so out of principle and strongly connected the transition they had made from using a car to using a bicycle to their personal values and self-identity.

The participants' answers related to recycling and sustainable behaviours revealed that all the participants recycle most of their household waste. The responses were divided on plastic waste: most participants recycle plastic waste, some do not. One strong predictor for the extent of this behaviour was whether the participant has a plastic recycling bin nearby. This clearly demonstrates the impact of convenience and is also evidence of the inherent trade-off in the Fogg Behavior Model between motivation and ability: when a behaviour is more difficult to perform, the motivation needed to successfully do it increases considerably (Fogg 2019, 23-25).

Several of the participants also reported that they had begun to successfully sort their plastic waste when plastic recycling bins appeared in their housing company. Interestingly, these participants reported that the change in behaviour had been easy for them, and none reported having failed at plastic sorting since. This positive change did not only reach their homes, but it also extended to other areas of their lives: one participant took this new habit to their hiking trips and stopped burning their trash, and another began to educate their close network of the importance of correct waste sorting. The interviewees who reported having successfully adopted this sustainable habit said they did not see this new habit as difficult at any stage, nor ever consider giving it up. This fascinating success

in developing a new sustainable habit is perhaps evidence of the link between the interviewees' new sustainable behaviour and their identity (Verplanken & Sui 2019). It may also be fair to speculate that performing this new sustainable habit was a strong internal reward and motivating factor for the interviewees, adding positively to their self-identity, and thus motivated them to seek out additional rewarding behaviours.

When identifying possible existing habit cues which could act as prompts for the new sustainable behaviours (e.g., Fogg 2019, 19-20), it was necessary to get a solid understanding of the participants' current recycling and waste management habits. The recycling habits of the interview participants were reportedly quite similar: nearly everyone stated they sort all the major types of waste such as paper, glass, biowaste, or metal. Most said they have the recycling bin facilities close to their home and take out trash and recycling when the bins get full, or when the biowaste begins to smell. Learning regular waste management habits can be challenging. Most participants said they notice either the visual trigger of a full bin, or the smell from the biowaste. Before the visual or olfactory triggers, however, almost all the participants said they check the trash when they are about to go outside. The cue of preparing to go out, for most of the interviewees, led to the behaviour of checking the trash. This context cue holds perhaps the strongest potential for a new return activity of reusable packaging to be included.

Certain examples of habit cues and struggles to establish them were brought up by two interviewees: one remembered that they own reusable fruit mesh bags, but they often forget to take them to the shop. They succeed only some of the time, if they have placed the bags inside their shopping tote bag which removes for them need to remember. The behaviour of packing the fruit bags, however, has failed to become a habit, and therefore has remained an only occasionally occurring activity. In this example, the behaviour itself is easy to do and the interviewee is somewhat motivated to do it, but the habit is missing the needed prompt described by Fogg (2019, 19-20).

Another interviewee told a story of how they had tried to recycle plastic waste when the recycling point was still accessible only by car. The habit had failed because the plastic bags were stored out of sight in the garden shed, waiting to

be put in the trunk of the car. In the end, they rarely remembered to take the bags out of the shed when the car was in place and would eventually throw the accumulated plastic bags in the mixed waste. This behaviour sequence – sorting the waste, storing it first in a shed and then in the trunk of the car, and transporting it to the final location – had more than one failure point and lacked essential prompts to move the plastic bags to the next stage in the recycling process.

A distinct negative concept identified in the interviewees' accounts about recycling were feelings of powerlessness: this was on one hand experienced from seeing the public not doing the right things regarding recycling, on the other hand caused by an inner conflict between the interviewee wanting to recycle in the correct way but not having the possibility to do so, either due to lack of opportunities or to difficulties finding information. More than half of the participants shared similar sentiments, such as *people could be educated about this [waste sorting], there is no need to put everything in the same bin... .. some have said that 'it doesn't matter, there is no point for you to sort [the trash] because they will end up in the same incineration facility anyway'* (Interviewee 7). Others told they are also themselves confused about the correct sorting methods and are at times doubtful of the value of their recycling efforts. Some identified the lack of transparency regarding the life cycle, especially the end-of-life stage, of recycled waste to be a large factor in these feelings.

5.2.3 Values and value conflicts

When asked what things influence their purchase decisions, the interview participants mentioned multiple factors, which were analysed using basic content analysis methods (Drisko & Maschi 2016, 3). The most common factors mentioned were price, whether the product is locally produced, ease of cooking or convenience, whether the product is organic, quality, and eco-friendliness. Of these, price was clearly the most common factor influencing purchase choices. The strong influence price had on the interviewees' purchase decisions contradicted many of their other highly valued factors, most of which are related to sustainability but, at the same time, often cause a product to have a higher price. This conflict of having to choose between price and sustainability is a battle that, according to the interviewees, is often won by money. Some interviewees

said they cope with this inner conflict by reminding themselves of all the other sustainable choices they make, thus allowing them to be more forgiving toward themselves in this instance. These coping strategies mentioned by the interviewees can be viewed as points where innovative improvements can be made; according to Flores Letelier et al. (n.d., 7), improving on such only partially working coping mechanisms can allow a business to create truly valuable service offerings for their customers. The internal struggle of the consumers should also be considered when planning the pricing of new services, as even the highly sustainably motivated consumers were more likely to choose a less sustainable option if it was considerably cheaper. Additionally, the consumers' internal feelings of guilt when faced with such choices may influence how they experience the new services.

The second largest factor influencing purchase choices was whether the product is domestically produced; several participants specifically mentioned this to be motivated by their desire to reduce emissions from long-distance transport. The theme of personal responsibility within the global economic system was restated in different ways during discussions about sustainability: interviewees valued social responsibility and ethical sourcing, saw themselves as responsible actors within the environment, and expressed their motivation to minimize waste in its different forms, either through reduced consumption or consideration of sustainable product life cycles. Notably, approximately half of the interviewees specifically mentioned reducing plastic waste as one of their sustainability aims.

What could be drawn from these findings was that many of the 'orienting values' of the interviewees, as defined by Flores Letelier et al. (n.d., 2), were related to environmental and sustainability issues. The interviewees said they value 'doing the right thing for the environment' and being personally responsible, and therefore strive to take individual action in sustainability matters. This was also seen as a matter of conscience by several interviewees: some used words such as 'guilt', 'lazy' or 'inconsiderate' to describe what they deemed to be their less sustainable behaviours, highlighting how strongly they feel that acting sustainably is, for them, a part their character and moral code.

When the participants described their shopping experiences, many of them had noticed being more likely to make less healthy, less sustainable, or unnecessary purchase decisions when stressed or tired. One interviewee mentioned that *when tired, you don't have the energy to just think, then you just pick stuff into the bag.... ... might be that you are just seeking a kind of momentary pleasure* (Interviewee 5). This phenomenon further validates the need for sustainable products and services to be created in ways which support making sustainable choices and do not require consumers to make complex decisions in fast-paced or stressful situations; the diminished ability of people to make cognitively demanding decisions under stress has been described also in the research of e.g., van der Weiden et al. (2020) and Neil, Wood & Drolet (2013).

5.2.4 Views on reusable packaging

In the last part of the interviews, the participants were asked questions related to reusable food packaging. Some of the interviewees could not think of any reusable food packaging brands or services without being reminded with examples by the interviewer. Others mentioned reusable fruit bags and shopping bags, and some remembered seeing reusable lunch boxes being used. Several participants also mentioned having seen or used services where customers could bring their own food container and expressed their wish to see these services be introduced in Tampere more widely. After some examples of reusable packaging-related services were given, many interviewees remembered seeing e.g., reusable coffee cups or lunch boxes, while not having been regular users of such services themselves.

The interview participants found the idea of reusable food packaging services to be very interesting and promising. Their preferences on the different aspects of such service models, such as whether the package should be cleaned by the consumer or a service provider, had variation. Majority of the interviewees, however, were in the end in favour of a returnable packaging service which would work with a deposit, much like the bottle return system commonly seen in shops all around Finland (Suomen Palautuspakkaus Oy 2015). The interviewees were also largely of the opinion that multiple different foods currently sold in single-use

plastic packaging in supermarkets could be sold, instead, in reusable packaging. Some stated they would be happy to see all food in such packaging.

There was some variation in the participants' opinions on which material they would most like to see in such reusable packaging. Several said they think reusable containers could be made from some recyclable plastic, several others favoured glass, and some mentioned they would like to see some other biobased, possibly biodegradable materials being used. Hygiene of the packaging, existence of a deposit, and widely available return points for the returnable containers were seen as the most important elements to include in a reuse-based service by most of the participants.

6 CONCLUSIONS AND RECOMMENDATIONS

As can be concluded from the research analysis in the previous chapter, the interviewed consumers found the idea of reusable food packaging generally very appealing and were excited by the potential they saw in such services. The author's initial hypothesis that the concept of habit formation can either assist or hinder the adoption of reuse-based services seemed to be confirmed by the interview data and the individual accounts regarding sustainable habits. Rather unexpectedly, the interviews also revealed a strong awareness among the interviewees of the importance of local food production, as well as an awareness of the participants' own roles as responsible consumers and the correlation of these with feelings of frustration and powerlessness.

While the research findings cannot be used to form wide assumptions about the Pirkanmaa population, certain recommendations as to what kind of service model elements are likely to be highly attractive to consumers in the Tampere area can be made. Recommendations for one such service model are listed below, with accompanying comments explaining the reasoning behind each element. It should be remembered that varying combinations of these elements can be used to develop different kinds of services in Tampere, and the following recommendations represent only one possible service offering.

6.1 Recommendations for a reusable food packaging service

Based on the consensus among the interview participants, the service model should be based on returnable, reusable food packaging which is offered in exchange of a deposit. The interviewees saw that a deposit system's financial incentive may ensure more of the packaging is returned instead of thrown away or kept by customers. Additionally, when considering the purchase situations and the cognitive load on the consumer, the convenience of ready-packed food packaging which the consumers can pick up from the shelf will likely be more attractive to the customers than services where empty containers would be filled on request. Reusable packaging was shown by the interview results to be an

attractive choice for consumers who are at least somewhat interested in sustainability. The service model could be benchmarked using the already thriving bottle return system in Finland (Suomen Palautuspakkaus Oy, 2015).

According to the interview results, packaging return points should be located in grocery stores, close to existing bottle return machines. Similarly, the return point network should be made widely accessible to consumers in order for the service to become successful. Grocery stores are familiar, frequently visited places for consumers, and as such it will be easy for them to include the packaging return routine to their daily shopping habits. The locations next to bottle machines will be logical and the return behaviours well-established to consumers, thus increasing the chances of the new packaging return habits being successful.

The service should have standardized, universal packaging. According to the interview results, consumers do not want to return various packaging to multiple scattered return points. Additionally, using standardized packaging will make transportation and storing of both empty and full containers easier for consumers.

Piloting of a new service should start with locally or domestically produced foods. Based on the thesis interviews, locally produced food is highly valued by sustainably oriented consumers, thus making the initial consumer interest toward the new service stronger. On the same grounds, the service logistics network should be designed to be local, with minimal transportation and processing of food or packaging. The sustainability message of the business will be clearer and easier to communicate when the flagship products can be shown to also reduce transport emissions.

The life cycles of both the service and packaging should be made fully transparent. This recommendation is based on the interview findings which showed strong feelings of powerlessness and frustration among the interview participants. Consumers are often frustrated with the lack of information regarding products, their packaging, or their life cycle impact; by being transparent, the business will ease the customer frustration, help them feel empowered and make the sustainability impact of their individual actions visible

to them and help build customer loyalty. Such an approach would also be in accordance with the holistic service design concept described by Polaine et al. (2013, 19-22).

Furthermore, as established in the previous chapter, consumers seemed to adopt a new habit more easily when it coincided with their values or identities. The link between identity and habits has also been demonstrated by e.g., Verplanken & Sui (2019). Therefore, a business developing such a service model should create their value proposition and communication strategy in a way that relates to the customers' identities as sustainably acting, empowered consumers.

Finally, the service model would likely benefit from including customized return transportation equipment, such as a customized canvas tote for returning the reusable packaging. The tote bag should be designed in a way that it can easily be e.g., hung from a door handle, and the customers should be guided to store the equipment at the exit of their home. Providing this kind of a readymade solution to customers' return logistics issues may make adoption of the new returning behaviour easier for them. A custom-designed tote could be both a practical container for the return packaging and a visual reminder for customers to close the product loop.

6.2 Suggestions for further research

The research sample used in this thesis was small, and as such the findings cannot be directly used to represent the wider population in the Tampere area. Further research is needed especially on possible packaging materials; consumer preference regarding material was not clear from this research, and choices of materials should be based on further research and analysis of e.g., technical and chemical properties. Whichever the material, special consideration should be given to packaging hygiene which was among the highest priorities of the interview participants. Further research and iterative user testing should also be done when designing the reusable packaging.

The conflict between price and sustainability was strong among the research participants, often causing them to choose a less sustainable but more affordable option. Therefore, it would be advisable for developers of such services to carefully consider the pricing and strive to offer the products and services as affordably as possible, and in different ways communicate both the direct and indirect value of their services to the consumers.

Finally, it is strongly recommended that any kind of reusable food packaging related services would be developed using a complete design thinking process, with the help of models such as the Double Diamond described in the second chapter (Design Council 2015). The iterative design thinking process and the development of service and product prototypes to test the viability of the new services (e.g., Design Council 2015; Tschimmel 2012; Luchs 2015) will be invaluable steps in the journey toward making successful sustainable services in Tampere a reality.

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APPENDICES

1 (3)

Appendix 1. Interview guide

Interview guide

Introduce myself, introduce research (sustainability in services, consumer services)

Inform of interviewee rights to not answer, confidentiality

Background information?

- Do you consent to take part in this interview?
- Could you first give some background information, so your age, gender, place of residence?
- What is your work situation now, at home/retired/work/studies, many people in household?
- Do you handle most or at least half of the grocery shopping in your household?

What are their shopping habits?

- How often do you do grocery shopping per week, on average?
- What types of stores do you shop in? (Chain name/online stores/small vs. big etc.)
- Of these, which ones do you most often use?
- I want to know how the shopping experience usually goes for you; could you tell me about how one shopping experience usually goes? A typical shopping trip from start to end. (story/experience; where coming from / going to; mood/busyness; what you are thinking about etc.)
- Do you buy food as takeaway from other places like restaurants/cafes?

What properties and characteristics of food packaging and related services do consumers value?

- How do you choose the food products you buy? (Influencing factors, impressions, values...)
- Could you give me an example of a time you made a conscious choice to buy one food product over another. How was the decision process?
- Considering food packaging: What makes a good food packaging?
- (further questions)

How does their interest in sustainability show in their shopping actions?

- What does sustainability in general mean for you, what are your thoughts about it?
- In your opinion, what makes a sustainable product?

(continues)

- In your opinion, what makes a not-sustainable product?
- How does the awareness of sustainability show in your shopping?
- (If it has impact) If you remember such a situation when sustainability awareness showed in your shopping experience, could you tell me about that situation?

What are the factors that influence consumers' willingness and ability to adopt new sustainable habits?

- Tell me about a time when you remember making a sustainable purchase choice.
- Now tell me about a time when you chose a less sustainable option.
- What things influence whether you buy a more sustainable product?
- Tell me about a time when you successfully developed a new sustainable habit? Doesn't have to be about shopping.
- Tell me about a time you tried to develop a new sustainable habit and it did not succeed. (Issues, feelings?)

Recycling habits

- What are your thoughts and experiences about recycling and other ways of waste reduction?
- How does waste management and sorting happen in your household? (Thoughts about recycling etc.)
- Tell me about a typical situation when you take out the trash/recycling. (Situation, mood etc.)
- Tell me about what things influence whether taking out the trash/recycling goes well.

Thoughts about reusable food packaging

Now, we move on to a specific product category: reusable food packaging. Reusable food packaging is a packaging that can be reused multiple times without being broken down and remanufactured in between.

- What kinds of reusable food packaging examples do you know of?
- What kind of experiences do you have of buying or using reusable food packaging?
- Could you tell me about an example of when you bought reusable packaging?
- Imagine you could get any food product in a reusable packaging: which products would you most like to see in them?

There are different kinds of reusable packaging services that exist. There are for example bottles return systems where you return it for a deposit at a store; there are coffee cups that can be bought from a shop or café and owned permanently by the consumer; there are lunch boxes that are bought for a deposit from a partnering restaurant or café and can be returned to a partnering restaurant.

(continues)

There are also shops where you can go with your own container and get them refilled with a product.

-What are your thoughts about these different kinds of services?

Ideas about reusable packaging services

If we imagine any such reusable food packaging service,

-what kind of food product would you be most interested to buy in reusable packaging?

-what do you think a reusable food packaging service would need to be like for you to start using it?

-Which material would you most rather see in such a packaging?

Let's imagine the process of buying and using a reusable packaging. Imagine you have bought a food product with reusable packaging:

-How would you transport it?

-What would you do when it's empty?

-Where would you keep the empty packaging?

-How would you decide or notice it's time to reuse or return it?

-How and where would the return or reuse ideally happen?

-Why would it be good?

-What issues do you see in a such a system?

-Do you have any other thoughts, or something you would like to say?

Thank you!