EXPLORING (IN)CONSPICUOUS CIRCULAR FOOD PRACTICES OF LOW-INCOME INDIVIDUALS

A qualitative study of circular food practices of low-income individuals in the Zuidoost district of Amsterdam, the Netherlands

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In dedication to my uncle, who taught me to always make space for joy.

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ABSTRACT

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Purpose. This research aims to further the knowledge base around the food practices of low-income individuals that are either conspicuously or inconspicuously contributing to the circularity of the food system in the urban context. It does so by answering the following research question: *What (in)conspicuously circular food practices do low-income individuals in Amsterdam Zuidoost engage in and how can further adoption of circular food practices be encouraged among them?' By answering this research question, the study aims to provide insights for policymakers and others working on circularity in the food system into how to make the transition to an urban circular food system more inclusive, and thus more successful.*

Methods. Both low-income individuals and organizations active in the food space, with a link to circularity and inclusion, were interviewed in a semi-structured manner.

Results. The research results show that low-income individuals in Amsterdam Zuidoost engage in a wide range of circular food practices, with a focus on prevention of food waste and the reuse of food for human consumption. The majority of food practices engaged in are inconspicuously circular. Conspicuous circular food practices concerned the end-of-life stage of food, and/or were practiced by higher-educated individuals or those with a Surinamese background.

Implications. The following recommendations for increasing the adoption of circular food practices among low-income individuals in Amsterdam Zuidoost result from this research: First, food-related meanings such as health, cultural appropriateness, solidarity/community and the belief that food should not be wasted are very important to this group. Additionally, financial pressures are also experienced widely. Practitioners would do well ensuring that policies and interventions take both these meanings and the financial realities into account. Second, suggestions by the low-income individuals themselves showed a preferred focus on increasing access to materials and further developing competences that are part of circular food practices.

Keywords:
Circularity, food system, social practice theory, low-income individuals, Amsterdam Zuidoost

SAMENVATTING

Doel. Dit onderzoek is gericht op het vergroten van de kennisbasis rondom de voedselpraktijken van mensen met een laag inkomen, die bewust of onbewust bijdragen aan de circulariteit van het voedselsysteem in de stedelijke context. Dit wordt gedaan door de volgende onderzoeksvraag te beantwoorden: Welke (on)bewuste circulaire voedselpraktijken hanteren mensen met een laag inkomen in Amsterdam Zuidoost en hoe kan verdere adoptie van circulaire voedselpraktijken onder hen worden aangemoedigd? Door deze onderzoeksvraag te beantwoorden, wil de studie beleidsmakers en anderen die werken aan circulariteit in het voedselsysteem inzicht bieden in hoe de overgang naar een stedelijk circulair voedselsysteem inclusiever en dus succesvoller kan worden gemaakt.

Methoden. Zowel mensen met een laag inkomen als organisaties die actief zijn in de voedselsector, met een link naar circulariteit en inclusie, werden op een semi-gestructureerde manier geïnterviewd.

Resultaten. De onderzoeksresultaten laten zien dat mensen met een laag inkomen in Amsterdam Zuidoost een breed scala aan circulaire voedselpraktijken hanteren, met een focus op het voorkomen van voedselverspilling en het hergebruik van voedsel voor menselijke consumptie. De meeste voedselpraktijken zijn onbewust circulair. Bewust circulaire voedselpraktijken hadden betrekking op de 'end-of-life' van voedsel en/of werden gehanteerd door hoger opgeleide personen of personen met een Surinaamse achtergrond.

Implicaties. Dit onderzoek resulteert in de volgende aanbevelingen om de adoptie van circulaire voedselpraktijken onder personen met een laag inkomen in Amsterdam Zuidoost te vergroten: Ten eerste zijn voedselgerelateerde betekenissen zoals gezondheid, culturele geschiktheid, solidariteit/gemeenschap en het geloof dat voedsel niet verspild mag worden, erg belangrijk voor deze groep. Daarnaast wordt financiële druk ook breed ervaren. Professionals doen er goed aan ervoor te zorgen dat beleid en interventies rekening houden met zowel deze betekenissen als de financiële realiteit. Ten tweede lieten suggesties van de personen met een laag inkomen zelf een voorkeur zien voor het vergroten van de toegang tot materialen en het verder ontwikkelen van competenties die deel uitmaken van circulaire voedingspraktijken.

Trefwoorden:
Circulariteit, voedselsysteem, sociale praktijktheorie, laag inkomen, Amsterdam Zuidoost

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READING GUIDE

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This thesis is structured in the following way:

In **Chapter 1: Introduction**, the context of the research is elaborated upon. Both the research gap and social and scientific relevance of the research are identified. Finally, the problem statement and research questions are presented.

In **Chapter 2: Theoretical framework**, the theoretical underpinnings of the research are explained. Additionally, a working definition of circular food practices is provided, including examples of such practices. Both serve as input for the coding strategy later on. At the end, the novelty of the theoretical framework is argued.

In **Chapter 3: Methodology**, the methodological choices are explored. Explicitly, the adoption of a mono-method, qualitative, inductive research approach is justified. Next, the data collection and analysis methods are described. Furthermore, ethical considerations are elaborated upon.

In **Chapter 4: Results**, the results of the research are presented. First, the (demographic) characteristics of the research participants are reviewed. Then, each sub-research question is answered through examination of the research data.

In **Chapter 5: Discussion**, the results of the research are discussed and evaluated. Furthermore, the theoretical and practical contributions of the research, the research limitations, and recommendations for future research are examined.

Finally, in **Chapter 6: Conclusion**, the main research question is answered. To conclude the thesis, this final chapter also provides a short recap of the main highlights of the research.

Additionally, each chapter starts with a **chapter preview**, which contains information on the structure of the chapter and its main insights. To gain a quick, high level understanding of the research, these chapter previews can be read independently.

I wish you an enjoyable read!

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INTRODUCTION

INTRODUCTION

1

Chapter preview

This chapter consists of the following sections: firstly, the **research context** is elaborated upon. It is argued that cities play an essential role in lowering the overall impact of the food system, and that the transition to a circular food system is one of the ways to do so. However, the social aspects of circular food systems are underrepresented in research, which demonstrates a limited view on circularity. This is where the concept of circular society comes in, which differentiates itself through its special concern for social sustainability, social transformation, and ethics. A true circular society, it is argued, can only be reached if all societal groups are included.

This research adds another, more practical, argument for why the commitment and participation of all societal groups are crucial to a successful transition to circular food systems in the urban context: due to the fact that early forms of the circular economy are already centuries old, there is a high chance that valuable experience, knowledge, and skills regarding circularity exist in many different groups in society that so far have not had a strong voice in the circularity discourse. This leads to the **research gap**: this research focuses on circular food practices of low-income groups in the urban context, that have not been researched yet. Secondly, the **social and scientific relevance** of the research are identified. Thirdly, the **problem statement** and the **research questions** are presented, with the main research question being: '*What (in)conspicuously circular food practices do low-income individuals in Amsterdam Zuidoost engage in and how can further adoption of circular food practices be encouraged?*'

1.1 Research context

1.1.1. Circularity as a tool to reduce cities' negative food-related impacts

Cities are important nodes in today's food systems: due to increasing urbanization and changes in diets towards more processed foods and meat, the food requirements and impact of cities become ever larger (Muscat et al., 2021). City regions are expected to consume 80% of all food produced worldwide in 2050 (Ellen MacArthur Foundation, 2019). Unfortunately, this increased appetite comes with a plethora of negative consequences: the global food system is responsible for around 35% of global anthropogenic greenhouse gas emissions (Crippa et al., 2021). Moreover, it causes soil degradation, biodiversity loss, and pollution (De Bernardi & Azucar, 2020; Jurgilevich et al., 2016). Hence, the need for a more resource-conscious food system is large (Muscat et al., 2021), especially in urban areas.

One potential solution is the transition to a circular food system (Camacho-Otero et al., 2018; De Bernardi et al., 2023; Ellen Macarthur Foundation, 2013; Jurgilevich et al., 2016; Kirchherr et al., 2017; Rohenkohl do Canto et al., 2021; Sassanelli et al., 2019). By adopting circularity as a tool to diminish the pressure on resources, cities can play an essential role in lowering the overall impact of the food system. Especially so due to cities being large contributors to the system.

Box 1: what are circular food systems?

Circular food systems are simply put '*food systems that implement the circular economy's princi-ples*' (Rohenkohl do Canto et al., 2021, p. 2). While it is important to note that what exactly constitutes the circular economy is still debated (see for example Calisto Friant et al., 2020; Geissdoerfer et al., 2017; Nobre and Tavares, 2021), this research adopts the widely used Ellen MacArthur Foundation's approach.

This approach states that the circular economy is a restorative or regenerative economic system, intentio-nally designed in such a way that it can replace our current linear take-use-waste economic system. Impor-tant principles are production out of waste, resilience through diversity, the use of renewable energy sour-ces, systems thinking, and cascading flows of materials and energy (Ellen MacArthur Foundation, 2013). Following these principles, circular economic systems consist of regenerative and closed-loop product life cycles (Camacho-Otero et al., 2018; Jurgilevich et al., 2016; Kirchherr et al., 2017; Sassanelli et al., 2019; Geissdorfer et al., 2017).

The Ellen MacArthur Foundation approach is well-known for its visualization of the circular economy con-cept in the form of a butterfly diagram, which separates the biological and technical cycle (see Figure 1). Both cycles have a different operationalization of the circularity principles due to the nature of the resour-ces that make up that cycle. When considering the food sector, we see it differs from many other sectors because of its focus on the biological instead of the technical cycle (Rohenkohl do Canto et al., 2021). Addi-tionally, it is difficult to turn food products into services, also called the servitization of food (Rohenkohl do Canto et al., 2021). After all, it is difficult to, for example, rent food. The biological cycle focuses on the principle of regeneration, operationalized in practices like regenerative agriculture, nutrient recovery through composting or anaerobic digestion, and extraction of biochemical feedstock (Ellen MacArthur Foundation, 2013). Closer to the consumer, the biological cycle consists of cascading loops aiming to keep products and materials in use for as long as possible (see Figure 1).
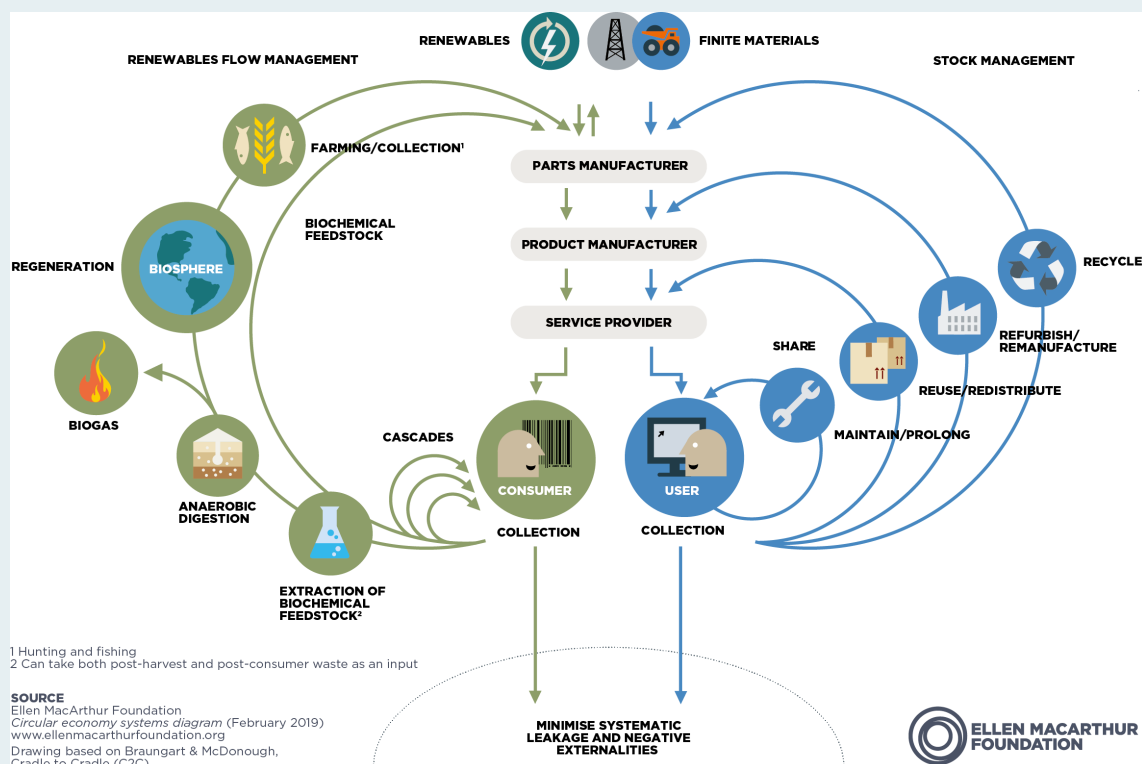

Figure 1: *The Butterfly Diagram, representing the separate biological and technical cycle within the circular economy (Ellen MacArthur Foundation, 2013). The food system resides largely in the biological cycle, except for (certain types of) packaging.*

1.1.2. The social dimension is under-considered

Traditionally, research on circular food systems has taken place in disciplines like agri-food sciences and engineering (De Bernardi et al., 2023). More recently however, circular food systems have become more popular in economic and social research fields as well (De Bernardi et al., 2023; Esposito et al., 2020; Mehmood et al., 2021). After all, food is inherently a social topic. It has a large social and cultural meaning in people's lives. Individuals and communities create habits, meanings, and traditions around food (Brons et al., 2020a). Nevertheless, much attention is still paid to the technical, environmental, and economic aspects of circularity within these research fields.

More regard for the social aspects of circular food systems in research is desirable, as the limited focus on social aspects might overlook the negative consequences of the circular economy and/or make assumptions about the social consequences (De Bernardi et al., 2023; Geissdoerfer et al., 2017; Jaeger-Erben et al., 2021; Nobre and Tavares, 2021; Rohenkohl do Canto et al., 2021). This is also noticeable in that the majority of circular economy definitions still focus mainly on the environmental and economic benefits of the concept (Geissdoerfer et al., 2017; Nobre and Tavares, 2021). If social benefits are included, they are limited to '*societal benefits from environmental improvements and certain add-ons and assumptions, like more manual labor or fairer taxation*' (Geissdoerfer et al., 2017, p. 14-15). How these benefits will be divided across society is often not considered at all.

1.1.3. Including all societal actors: a circular society

Partially to solve these oversights, authors have argued that the goal should not be a circular economy, but a circular society (Jaeger-Erben et al., 2021). The circular society concept adds special concern for social sustainability and social transformation to the idea of the circular economy (Jaeger-Erben et al., 2021). Just as with the circular economy, there is not one way to define the circular society concept. However, *'a common denominator of [circular society] concepts is that [circular economy] transitions are not possible without the commitment and participation of all societal actors'* (p. 1, Jaeger-Erben et al., 2021).

But why? The circular society discourse argues that '*[b]y paying particular attention to social justice, equity, and inclusion, circular futures need to build on the voices of the many*' (p. 2, Jaeger-Erben et al., 2021). While the concepts of social justice and equity are outside the scope of this research, ethical considerations are the main motivation behind the call for the inclusion of all societal groups. Without the inclusion of all, it is argued, a society cannot be truly circular (Jaeger-Erben et al., 2021).

When considering circularity in food systems, this inclusion of all societal stakeholders from the circular society concept carries over, both in policy (seen from the global to the local level, inclusion is incorporated in e.g. Doughnut Economics Action Lab, 2020; Gemeente Amsterdam, 2020; European Union, 2020; IenW & EZ, 2016; UNEP & UN-Habitat, 2021) and in research. Just like Jaeger-Erben et al. (2021), De Bernardi et al. (2023) and Rohenkohl do Canto et al. (2021) argue that the identification of the food system's stakeholders as indispensable problem-solving participants, not just as beneficiaries, is important. Collaborative relationships are considered essential to circular and sustainable transitions (De Bernardi et al., 2023). Moreover, locally developed circular food solutions in line with a local socio-cultural background will have a higher chance of becoming mainstream and need the input of local stakeholders (Jurgilevich et al., 2016). Finally, some authors connect inclusion explicitly to the urban physical and social environment by highlighting barriers and access needs for the most vulnerable groups, such as ethnic minorities and low-income groups (MacKendrick, 2014; Morgan & Sonnino, 2010).

1.1.4. Research gap: circular food practices of low-income groups in the urban context

In addition to the arguments of fairness and reaching a true circular society, I argue that there is another, very practical, argument for why the commitment and participation of all societal groups are crucial to a successful transition to circular food systems in the urban context. In contradiction to the recent attention by academic scholars for circularity as an innovation paradigm, early forms of the circular economy are already centuries old (De Bernardi et al., 2023). As a concept outside the academic and policy world, circularity is not novel at all, it might just not be known under that name specifically. So, there is a high chance that valuable experience, knowledge, and skills regarding circularity exist in many different groups in society that so far have not had a strong voice in the circularity discourse.

While the topic of food is relevant to everyone in society (after all, every human being needs food to sustain themselves and thus participates in the food system in one way or another), not all groups in society have been included in the circular food system research evenly. For example, explicit research into circular food practices of urban low-income groups (see Box 2) does not exist yet, to the best knowledge of the researcher, at the time of writing of this thesis. However, when considering the circular practices of for example cascading loops (e.g. through the use of leftovers) and waste minimization (Ellen MacArthur Foundation, 2013; Jurgilevich et al., 2016), low-income groups might hold a lot of experience, knowledge, and skills related to circularity. This research aims to bridge the gap between this practical experience, knowledge and skills and the academic world.

Box 2: what does low income mean in the context of this study?

While the inclusion of all societal groups is important for the transition to circular food systems in the urban context, this research focuses on low-income groups in Amsterdam Zuidoost (see Box 3, Chapter 3 for more information). Low-income groups are considered part of disadvantaged groups in society and low-income status often occurs together with other vulnerabilities (examples, in the Dutch context, are health issues (Van den Brakel & Knoops, 2009; RIVM, n.d.), immigrant background (Van Hulst et al., 2019), and/or low education level (CBS, 2019)).

Initially, it was considered to research low socio-economic status groups. However, it became clear early on in the research process that this would limit the research pool drastically. For example, multiple of the people who used the services of the food bank would not be considered low socio-economic status, as their education level was too high. So, it was decided to only select on the income level of the participants, as represented by the poverty line.

In the Netherlands, there are two main ways to calculate whether someone lives below the poverty line. First, there is the basic needs budget (basisbehoeftebudget), which only includes the necessary expenses, such as food, clothing, housing, and insurance. Additionally, and more widely used, there is the not-much-but-sufficient budget (niet-veel-maar-toereikendbudget). The latter also includes a minimum amount for relaxation and social participation. Such expenses are not necessary to survive but are considered highly desirable by many (Goderis et al., 2019). Both budgets were last calibrated in 2017. In between calibrations, the budgets are adjusted to expected inflation among others. In this research, I will use the not-much-but-sufficient budget as this is also the main budget used by the Dutch government.

Table 1: *The not-much-but-sufficient budget per month and the corresponding monthly and weekly food budgets for 2023, in Euros.*

	Monthly not-much-but-sufficient budget 2023 (Deinum & Griffioen, 2022)	Monthly food budget 2023 (Radstaak, 2023)	Weekly food budget 2023 (Radstaak, 2023)
Single	1533	254	59
Single with 1 child	1977	356	82
Single with 2 children	2283	445	103
Single with 3 children	2652	648	150
Couple	2100	462	107
Couple with 1 child	2498	469	108
Couple with 2 children	2836	591	136
Couple with 3 children	3126	767	177

The not-much-but-sufficient budget includes a certain amount for food expenses, based on the example budgets that are published every year by NIBUD (Radstaak, 2023). While the not-much-but-sufficient budget for 2023 is based on an inflation-corrected 2017 calibration, the food budgets are released yearly, based on the average costs of food products. The 2023 monthly food budgets were thus used to calculate the weekly budgets.

1.1.5. Social & scientific relevance

This research has societal relevance in the following way: it links circularity in the urban food system to societal questions around inclusion. It aims to add to the knowledge base around circular food practices of low-income urban inhabitants. By doing so, it intends to support the shift to a circular food system in the urban context, which is necessary in light of the world's sustainability needs. As argued above, exploring how this transition can be made more inclusive to low-income groups contributes to making this transition more successful.

Additionally, this research adds to the scientific knowledge base by focusing on one specific social aspect of circularity, namely the inclusion of low-income individuals in circular food systems in an urban context. In doing so, this research combines multiple calls for further research. First of all, not many studies on circular behavior consider the food sector (Rohenkohl do Canto et al., 2021). Secondly, on a methodological level, there is a need for more in-depth single-case studies on circularity and food, compared to generic, multi-sector insights (De Bernardi et al., 2023). As discussed in more detail in Chapter 3, this research focuses on Amsterdam Zuidoost, contributing to De Bernardi et al.'s (2023) call. Finally, Jaeger-Erben et al. (2021) recommend further research on '*the exchange and negotiation of multiple perceptions, belief systems and needs from different sectors, social groups, disciplines and cultures*' (p. 2), which this research contributes to through its focus on low-income individuals.

1.2 Problem statement

To summarize this introductory chapter, the circularity of the food system in the urban context is a hot topic, both in academia and policy. Additionally, the inclusion of all societal groups is essential for a successful transition to circularity of the food system. However, not all groups within society have an equally strong voice in this transition For example, low-income individuals might experience specific challenges with regard to circularity that are not yet being considered in policy. On the other hand, this group might also possess experience, skills and knowledge that can act as enablers for circular behaviors.

This research aims to contribute to the knowledge base around circular food practices of low-income individuals in the urban context, whether they are conspicuously or inconspicuously circular. This in turn can hopefully provide insights for policymakers and others working on circularity in the food system on how to make the transition to a circular food system in the urban context more inclusive and hence more successful.

1.3 Research questions

The main research question investigated in this study is:
What (in)conspicuously circular food practices do low-income individuals in Amsterdam Zuidoost engage in and how can further adoption of circular food practices be encouraged among them?

To answer the main research question, the following sub questions are formulated:

1. *What food practices do low-income individuals in Amsterdam Zuidoost engage in?*
2. *What practice elements (meanings, materials, and/or competences) do these practices consist of?*
3. *Are these food practices conspicuously or inconspicuously circular?*
4. *How can the adoption of circular food practices be encouraged among low-income individuals in Amsterdam Zuidoost according to individuals belonging to this demographic?*

THEORETICAL FRAMEWORK

THEORETICAL FRAMEWORK

Chapter preview

This chapter presents the theoretical framework underpinning this research. It is structured in the following way: first, a short **explanation of social practice theory** is provided, to set the stage for the presentation of the theoretical framework later. Then, the **operationalized theoretical framework** is introduced and its four underlying theoretical building blocks are explained. Each building block corresponds with one of the sub-research questions.

The **first building block** considers the definition of circular food practices in the context of this research, which is based on the Ellen MacArthur Foundation's approach to circularity. It is argued that all food practices that contribute to circularity are circular. An overview of circular food practices, identified in earlier research, is provided. This list serves as input for the a priori codes (see Chapter 3) used to answer the first sub-research question: *What food practices do low-income individuals in Amsterdam Zuidoost engage in?*

The **second building block** is that practices consist of three practice elements, namely meanings, materials, and competences. This building block corresponds directly with the second sub-research question: *What practice elements (meanings, materials, and/or competences) do these practices consist of?*

The **third building block** argues that practices do not need to be motivated by circular motives to contribute to circularity: they can be conspicuously or inconspicuously circular. It links to the third sub-research question: *Are these food practices conspicuously or inconspicuously circular?*

Next, the **fourth building block** explores that practices (can) change. This building block provides foundational background for the fourth sub-research question: *How can the adoption of circular food practices be encouraged among low-income individuals in Amsterdam Zuidoost according to individuals belonging to this demographic?*

Finally, the **novelty of the theoretical framework** is discussed.

2.0.0. What is social practice theory?

Before exploring the operationalized theoretical framework and the social practice theory building blocks it consists of in more detail, it is useful to understand what social practices and social practice theory are. Social practices have been defined as '*the routine habits and patterned behaviors that constitute most consumptive activities*' (Ahamed et al., 2023, p. 2) and '*actual behavioral practices, situated in time and space, that an individual shares with other human agents*' (Spaargaren, 2003, p. 688). Social practice theory focuses on the 'practice' as the object of study.

Simply put, social practice theory argues that practices are neither the result of individual factors and choices, nor of outside forces. Practices are the result of a combination of both the socio-material context and human routines and competences, and in turn influence other (interconnected) practices and social structures (Shove et al., 2012). Social practice theory explores the stability and transformation, in historically and culturally specific ways, within and between social practices, hoping to contribute to the explanation of social phenomena and to positively influence society by helping to tackle complex challenges (Shove et al.,

2012). It changes research questions '*from "How do we change individuals' behaviors?" to "How do we change social practices?"*' (Welch, 2017, p. 4).

Research applying a social practice perspective focuses on understanding the components that make up practices, how these components interact, and how practices interact. While doing so, social practice theory also pays attention to the importance of a specific context, which can influence what practices are engaged in and in what form through for example existing infrastructures, institutions, conventions, and resource access (Welch & Warde, 2015). Overall, '*theories of social practice offer a new theoretical perspective to behavior change, providing fresh insights and novel targets for intervention*' (Welch, 2016, p. 237).

2.1 Operationalized theoretical framework & its building blocks

Figure 2 shows how social practice theory is operationalized into the theoretical framework underpinning this research. The framework consists of four distinct building blocks, each of which corresponds with one of the sub-research questions presented in the last chapter.

The framework focuses on circular food practices, represented as a light blue circle. These practices consist of three elements: materials, meanings, and competences (Shove et al., 2012). These three elements and the connections between them are what makes up a (circular) food practice. Additionally, the framework shows that circular food practices can be either conspicuously or inconspicuously circular (adapted from Brons et al., 2020b). This part of the framework is placed at the meaning element, as the motivations that make up a practice are argued to determine whether a food practice is (in)conspicuously circular. Finally, the framework includes the notion that practices (can) change, and in three different ways (Shove et al., 2012). This provides substantiation for the fourth sub-research question, which focuses on how the adoption of circular food practices can be increased among low-income individuals.
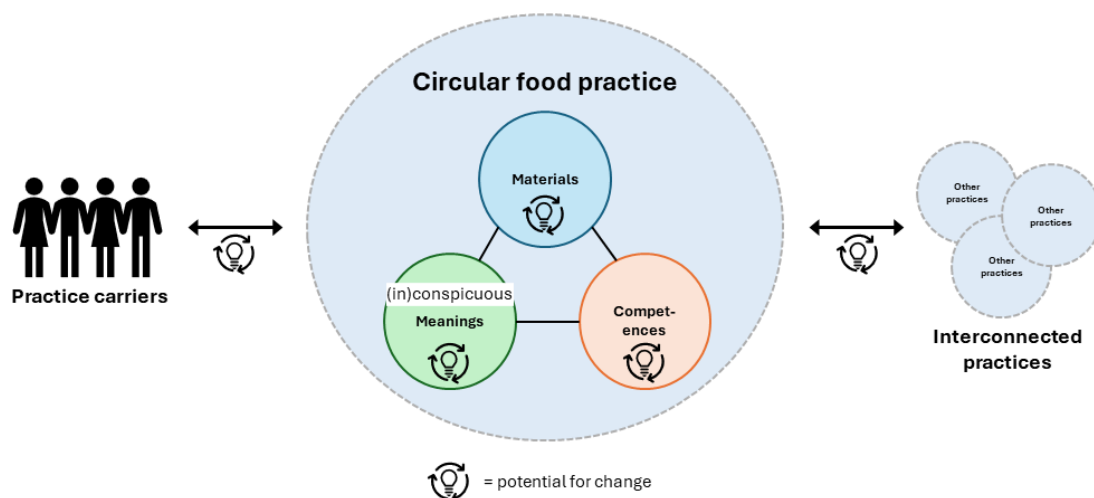
Figure 2: The theoretical framework applied in this research. Shove et al.'s (2012) three-element Social Practice Framework and the ways practices can change are at the core of the framework. Additionally, Brons et al.'s (2020b) conspicuous-inconspicuous approach to practices is adapted to circularity and added to this framework.

2.1.1. Theoretical building block 1: definition of circular food practices in this study

In this study, circular food practices are defined as food practices that, either conspicuously or inconspicuously, follow the Ellen MacArthur Foundation's (2013) approach to circularity (see also Box 1). More specifically, all food practices that contribute to a restorative or regenerative food system, for example through regeneration, systems thinking, the closing of product life-cycles, or cascading flows of materials and energy are considered circular. A contribution to these processes is argued to be enough to be considered circular for two reasons: first of all, an individual's food practices only make up a small part of the circular food system. Hence, their actions can contribute to circularity, but there is a whole system needed to ensure the actualization of true circularity. Secondly, as circular food systems are not yet a reality, it can be argued that many food practices can only contribute to circularity, not be a hundred percent circular.

2.1.1.1. Circular food practices in literature

The literature provides plenty of examples of different food practices that can be considered circular according to the definition in this research. In Table 2, a selection based on research by Massimiliano & Luigi (2022) and Rohenkohl do Canto et al. (2021) is highlighted, which analyzed circular food practices and circular food behaviors respectively. While this selection is not exhaustive, it does provide a broad range of examples of circular food practices from literature.

Both researchers took a different approach to come to these examples. Massimiliano & Luigi (2022) used a deductive approach to build a Circular Food Consumption Practices Framework and then filled it with examples. They combined multiple existing concepts and theories into one overarching framework: namely sub-practices (what part of food consumption does the practice cover, e.g. planning, shopping, storing, cooking, eating, and disposing), the elements of a practice (similar to Shove et al.'s (2012) three elements within a practice), what CE strategy the practice follows, whether a practice is single or interconnected, and the ease of transition. Contrarily, Rohenkohl do Canto et al. (2021) developed their framework of circular food behaviors inductively, by executing a semi-systematic literature review of peer-reviewed academic articles about circular food behaviors. Besides providing insight into many different circular food behaviors identified in peer-reviewed research, Rohenkohl do Canto et al's (2021) literature review resulted in a categorization of circular food behaviors into three distinct types: linear, transitioning, and circular. All three contribute to the circular economy, but the logic or motivation behind the behavior differs: from a traditional take-make-waste logic to a truly systemic view. This categorization shows similarities with Brons et al.'s (2020b) observation that food practices can be either conspicuously or inconspicuously sustainable, depending on the motivation behind the practice, which will be discussed in the third building block.

Table 2: Examples of circular food practices from literature (adapted from Massimiliano & Luigi (2022) and Rohenkohl do Canto et al. (2021)).

Circular food practice	Sub-practice	Sub-sub practice	Observed in Massimiliano & Luigi (2022)	Observed in Rohenkohl do Canto et al. (2021)
	Planning	Planning meals with foods that are about to go bad (periodically checking dates/	X	
		Planning food shopping (grocery list)	X	
		Bringing reusable packaging/bags when shopping	X	
	Obtaining	Purchasing less appreciated foods (e.g. imperfect fruits/veggies, surplus foods,	X	X
		Using reusable containers/bags or buying foods with less or renewable packaging	X	X
		Purchasing local or seasonal foods		X
		Dumpster diving		X
		Participating in alternative food networks (e.g packaging-free shops, CSA, short food chains, digital platforms fighting food waste)	X	X
	Storing	Storing in reusable containers	X	
		Knowing the difference between different dates/when food is safe to eat	X	
	Cooking	Not preparing too much food	X	
		Using/repurposing leftovers	X	X
		Being flexible regarding recipes and menu	X	
	Eating	Eating leftovers	X	
		Eating less or no animal products/meat		X
	Disposing	Waste separation	X	X
		Solidarity initiatives and food sharing	X	X
		Composting	X	
		Reuse of packaging	X	
		Consumers' food waste serving as food for animals that re-enter the food con-		X

2

2.1.2. Theoretical building block 2: practices consist of three elements

Within social practice theory, there are multiple ways of looking at practices. This research follows Shove et al.'s (2012) approach which considers that practices are shaped by three elements and the linkages between them. Practices '*emerge, persist, shift, and disappear when connections between elements of these three types are made*' (Shove et al., 2012, p.14). Practices consist of meanings, materials, and competences. Meanings, values, and norms encompass the perceptions of an individual or community informing a practice. Meanings can be things like symbolic meanings, ideas, and aspirations. Materials are the physical, objectively existing elements that inform a practice. Examples are tangible physical entities and technologies. Finally, competences focus on the skills and know-how of the individual or community that performs a practice (Shove et al., 2012; Spotswood et al., 2015). Understanding the three elements of a practice helps to understand the practice as a whole. For example, when we apply this framework to the practice of composting, an individual might have access to a compost bin in front of their home (materials), but not use it because they consider composting dirty (meaning) or feel unsure about what they can and cannot put in the compost bin (competences).

2.1.3. Theoretical building block 3: practices can be conspicuously or inconspicuously circular

Additionally, the theoretical framework underpinning this research includes the notion that circular food practices do not need to be driven by circular motivations or knowledge/skills. A similar concept can be seen in Brons et al. (2020b). Brons et al. studied the food practices of Dutch consumers with type 2 diabetes and showed that their food practices were sometimes sustainable, even though health was a driving factor behind the practices, not sustainability. I apply this notion to circularity and argue that the same is likely to occur with circular food practices of low-income groups. By applying this notion to this context, space is created to consider practices of low-income groups that contribute to circularity but are not motivated by circularity still circular (also see Box 3). For example, an individual might reuse leftovers, which contributes to the circularity of the food system, but do so because of financial motivations, not circular ones. As seen above, Rohenkohl do Canto et al. (2021) also argue that behaviors can still be circular, even though the underlying motivation and logic might be linear.

2.1.4. Theoretical building block 4: practices (can) change

Finally, the fourth building block of the theoretical framework is the notice that practices (can) change. According to Shove et al. (2012), this can happen in three distinct ways. Firstly, practices can change through changes in the elements that make up the practices. For example, when going back to the example of the practice of composting, a change in the type of composting facilities available (material element) might change the practice through the type of waste that will be composted. Industrial composting facilities for example can process very different waste types than an at-home composting pile. Secondly, practices can also change through a change in interconnected practices, practices that influence each other. For example, when there is a change in the practice of shopping for food, such as the adoption of planning meals in advance, this can induce a change in the amount of food that was not used being thrown away, causing changes in the practice of disposal. Thirdly, practices can change through changes in the population of carriers. When new carriers adopt a practice, they bring with them their own life experiences and contexts, which might cause changes in the practice. For example, when the practice of composting is adopted by apartment-dwellers instead of people with gardens, new ways of storing the food waste before bringing it to a composting point might emerge. The reason for including this fourth building block in the theoretical framework is as follows: it provides a foundational understanding that practices (can) change and of how they do so. This provides substantiation for the fourth sub-research question, which focuses on how the adoption of circular food practices can be increased among low-income individuals.

2.1.5. Novelty of the theoretical framework

While social practice theory has been used before to understand food behaviors (see for example Brons et al., 2020a; Brons et al., 2020b; Wertheim-Heck, 2017; Wertheim-Heck et al., 2019; Hebrok & Heidenstrom, 2019) and to understand circular behaviors (see for example Stehouwer et al., 2022; Holmes, 2018; Le et al., 2022), only more recently, research has also been conducted where the two overlap (e.g. Borello et al., 2017; Borello et al., 2020; Greene et al., 2023; Lethokunnas et al., 2020; Massimiliano & Luigi, 2022; Nobili & Cappellaro, 2021; Rado, 2022). Hence, a social practice approach is suitable for research into circular food practices, while also still relatively novel.

Besides the relative novelty of using a social practice lens to look at circular food behaviors, applying it specifically to low-income groups adds more novelty. To the researcher's best knowledge, no social practice studies focus on the interplay between circularity, food, and low-income groups at the time of writing this thesis.

The novelty of the specific theoretical framework that is applied in this research is its integration of the notion that practices can be conspicuously or inconspicuously circular into Shove et al.'s (2012) wider theory. While Shove et al. (2012) do consider the motivation and knowledge that shape practices (in meanings and competences respectively), they do not make a distinction between conspicuously or inconspicuously motivated practices. Partly, this is because Shove et al.'s (2012) theory encompasses social practices in general, while the incorporation of (in)conspicuousness asks for a specific 'class' of practice, like circular or sustainable. Only then can the motivation behind the practice be compared to its results. This is especially important in the context of low-income groups, where it is argued that there is a high chance that valuable experience, knowledge, and skills regarding circularity exist, that so far have not been connected to the circularity discourse.

Finally, by considering potential intervention ideas from the perspective of the low-income individuals themselves, this theoretical approach aims to counter one of the main arguments against social practice theory, especially when it is attempted to be implemented into policy. Practice theory is often considered too theoretically complex by policymakers, partly because of its exacting demands on the use of language and concepts (Hampton & Adams, 2018). By incorporating a space for practical insights based on the lived experiences of low-income individuals themselves in the framework, it strives to '*become more "practicable"- or deliver new insights on policy levers for influencing change towards more sustainable consumption practices*' (p. 27, Sahakian & Wilhite, 2014).

METHODOLOGY

METHODOLOGY

3

Chapter preview

This chapter describes the research methodology used to answer this study's research questions. The chapter's structure is inspired by Saunders et al.'s (2019) research onion, which supports a logical and systematic construction of a research methodology by 'peeling away' each layer of the research onion until the data collection and analysis methods at the core of the onion are reached (see Figure 3).
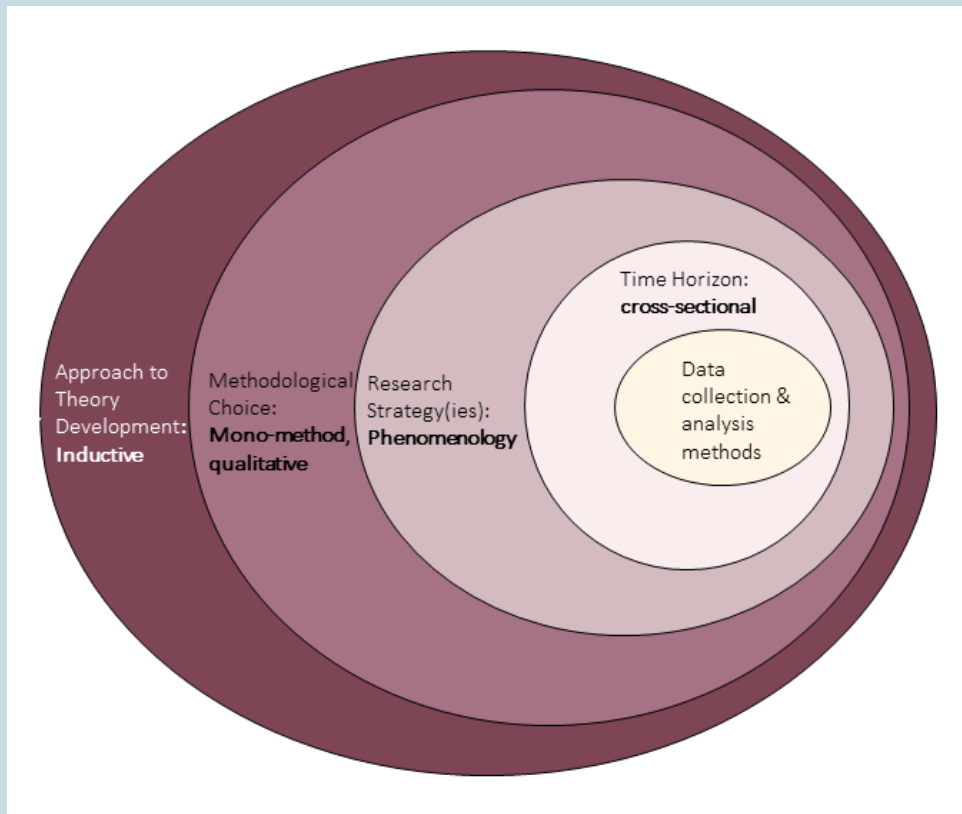
Figure 3: Adapted research onion (Original: Saunders et al., 2019, p. 130)

The first part of the chapter focuses on the **methodological considerations and research design**. The choice for an inductive, mono-method, qualitative, phenomenology-based, cross-sectional research setup is explained and justified in relation to the research questions and theoretical framework. In the second part of the chapter, the **data collection & analysis methods** that were employed are discussed in detail. Semi-structured interviews with both organizations and low-income individuals formed the core of the data collection: the sampling strategy and development of the interview guides are expanded upon. The next section of the chapter focuses on the analysis of the data: this section explains the data preparation, coding and analysis strategy per sub-research question, and management of the data. Finally, the **ethical considerations** of the research methodology are elaborated upon.

3.1 Methodological considerations & research design

3.1.1. Approach to theory development: inductive

An inductive approach to theory development was well suited to the research, considering the theoretical framework rooted in social practice theory and the explorative nature of the research questions. However, taking an inductive approach does not mean that a researcher needs to go in blind, without any knowledge of the theory surrounding the researched topic at all. '*An inductive approach is intended to allow meanings to emerge from data as you collect them in order to identify patterns and relationships to build a theory, but it does not prevent you from using existing theory to formulate your research question and even to identify concepts that you wish to explore in the research process*' (Saunders et al., 2019, p. 52). Later on in this chapter, this notion will re-emerge when discussing how the interview guides and the use of both a-priori and emergent codes for the analysis of the collected data were constructed.

3.1.2. Methodological choice: a mono-method, qualitative approach

With methodological choice, Saunders et al. (2019) refer to two choices: firstly, between a quantitative, qualitative, or mixed methods research design. And secondly, between a simple/mono-method or more complex/multi-method design. For my research, I concluded that a mono-method qualitative methodological approach is most suitable.

Although social practice theory does not come with its own unified methodological approach (e.g. Halkier et al, 2011; Wertheim-Heck, 2015), it does argue for the use of methods that allow for gaining a rich understanding of practices and their context (Spaargaren et al., 2016). This research aims to understand how circularity around food is perceived and potentially practiced by the research participants. Qualitative research '*aims to describe, interpret, and explain social reality through the medium of language*' (Beuving & de Vries, 2015, p. 19). Hence, a qualitative research design was suitable for this research and fulfilled the requirements of social practice theory.

Only one data collection technique was used, namely in-depth, semi-structured interviews, based on Hitchings' (2012) findings that people can talk about their practices. Additionally, this mono-method research approach allowed for the use of all limited resources available for a Master's thesis to gain an in-depth understanding of the participants' practices.

3.1.3. Research strategy: phenomenology

Phenomenology was adopted as the research strategy for this research. Phenomenologist research '*stud[ies] existence, focus[sing] on participants' lived experience; that is, the participants' recollections and interpretations of those experiences*' (Saunders et al., 2019, p. 149). In phenomenological studies, the goal is a '*rich, detailed description of a central phenomenon*' (Creswell & Creswell, 2018, p. 125), with a focus on the meaning and interpretations of the phenomenon for the participants. This research strategy aligned well with the research questions as they aimed to research how a certain phenomenon is practiced by a certain group of people.

3.1.4. Time-horizon: cross-sectional

Generally, research following social practice theory does include a time aspect. Practices emerge and are reproduced over time and within this reproduction, practices change. However, as the research's main focus is on understanding the current state of circular food practices among low-income individuals and only considers what they think might encourage them to adopt circular food practices, a cross-sectional research time horizon was chosen over stretching the limited available resources (mainly time) toward a longitudinal study setup.

3.2 Methods: data collection & data analysis

3.2.1. Data collection methods

In line with the methodological considerations elaborated on above, this research employed one type of data collection method: semi-structured interviews. To reduce the chance of only hearing one side of the story and to increase the credibility of the research results, in-depth interviews with both organizations working on the topics of food and inclusion with low-income groups, and low-income individuals themselves were conducted. This was also done to increase the access to low-income interview participants.

3.2.1.1. Sampling strategy

Before participants were recruited for the research, the desired sample size was determined. The call from both social practice theory and phenomenology for a rich description of practices and a central phenomenon respectively, supports the deployment of a small sample size. Creswell & Creswell (2018) provided a concrete answer: for phenomenological research, they advise a sample size of 3-10 participants. Other authors (Guest et al., 2006; Morgan et al., 2002) argue a sample size of 6-12 interviews is sufficient to reach saturation in qualitative research. Following these guidelines, a goal sample size of at least 6 organizations and 6 low-income individuals was set.

Organizations were reached out to before individuals. The motivation for this order was as follows: by interviewing organizational representatives before interviewing individuals, a better feeling and understanding of the phenomenon under research in its practical context was developed by the researcher. It increased the researcher's competence, credibility, and goodwill among the research participants (Saunders et al., 2019) and lowered the chance of the researcher making social faux passes by using 'outsider' language or overseeing important nuances. Moreover, it helped ensure that none of the participants were negatively affected by the research. Additionally, the organizations played an important role in contacting low-income individuals who might be interested in being interviewed.

Non-probability sampling (both convenience and snowball sampling) was used to find both organizations and individuals to interview. First, a list of organizations in Amsterdam active in the food space with additionally a relationship to inclusion was compiled through online searches and the researchers network. This resulted in a list of 58 organizations in Amsterdam, of which 13 were considered relevant to the research and active in Amsterdam Zuidoost (see Box 3). These organizations were contacted in multiple ways: via their website, email, phone number or by visiting. Where possible, the researcher's personal contacts were used to gain more direct contact.

Via these initial organizations, other relevant organizations and/or individuals were then found through snowball sampling. Snowball recruitment is particularly useful when aiming to study hard-to-reach groups and when the researcher is not part of this group (Browne, 2005). Additionally, multiple events, community dinners, and a food bank distribution point were visited or volunteered at to increase contextual understanding and meet potential participants. This helped with ensuring familiarity and incrementally developing access (Saunders et al., 2019).

Box 3: Why Amsterdam Zuidoost?

To ensure an in-depth understanding of circular food practices in a specific urban context, this research project focused on one district in the city of Amsterdam. The district that was selected was Amsterdam Zuidoost, as it has both the highest level of minima-households in Amsterdam (Gemeente Amsterdam, 2022) and hosts many organizations active in the food space with a relationship to circularity and inclusion.

Table 3 compares Amsterdam Zuidoost to Amsterdam as a whole on a selection of data indicative of the amount of low-income individuals. It shows that Amsterdam Zuidoost has, next to a higher percentage of minima households, also a higher percentage of inhabitants with a low socio-economic status and a higher percentage of social housing than Amsterdam on average. Moreover, when considering other vulnerabilities that often occur together with low-income status (see Box 2, Chapter 1), Amsterdam Zuidoost has a lower percentage of (very) healthy citizens, citizens without a migration background, and a higher percentage of lower-educated citizens. On all these data points, Zuidoost scores the worst of all districts in Amsterdam (besides Westpoort for % of citizens without a migration background).

Table 3: Indicative data for low-income status in Amsterdam Zuidoost compared to the Amsterdam average.

	Amsterdam Zuidoost	Amsterdam average	Reference year	Source
Minima households (households with both a low income and little financial assets: up to the asset limit for social benefits) (% of total households)	25	17	2021	Gemeente Amsterdam, 2022
Citizens with low socio-economic status (% of all citizens)	40	30	2022	OIS Amsterdam, 2024
Social housing (% of housing stock)	59	47	2023	OIS Amsterdam, 2024
(Very) healthy citizens (% of all adult citizens)	56	68	2022	OIS Amsterdam, 2024
Citizens without a migration background (%)	21	40	2024	OIS Amsterdam, 2024
Lower-educated citizens (% of 15-74 year olds with no or VMBO diploma)	31	22	2022	OIS Amsterdam, 2024

3.2.1.2. Development of the interview guides

Two different interview guides were developed: one for the organizational interviews and one for the individual interviews (see Appendix A). The differences between the two guides reflect the slight difference in the focus of the interviews. While the organizational interviews focused on understanding the organization, its circular practices, and the circumstances and circular practices of its clients, the individual interviews focused on understanding the circular practices of the individuals and went more in-depth into the components of these practices.

The research guides were developed based on the research questions, theoretical framework, and the research context presented in Chapter 1 and 2. For the research guides, the literature mainly helped form an impression of the type of food practices that might be encountered. Additionally, inspiration was also taken from the research guides used by other MSc students studying food practices (Bergsma, 2020; Alonso Martínez, 2021). Finally, and importantly, a selection of questions from the EWUU Alliance Circular and Inclusive Food Systems (CIFS) research project's general interview guide regarding potential interventions that could encourage recruitment to or expansion of circular food practices were incorporated. For more information on the CIFS project and its support of this research, see Appendix B.

Each interview was started with the obtaining of some general information, either about the organization or demographic information about the individual. Then, the interview was continued with questions about circular food practices. For organizations, these questions were relatively direct, while for the individuals it was opted for a more conversational approach, starting by asking what they ate last night (inspired by Bergsma, 2020; Alonso Martínez, 2021). As the concept of circularity is not without debate (see Box 1, Chapter 1), every participant was also asked to share what this concept means to them when talking about food. This enabled the researcher to gather data on how these concepts are perceived within the research sample. Finally, each interview was ended with an open question to the participants whether there was anything else they wanted to share (O'Reilly, 2012).

In the end, these efforts resulted in 11 organizational and 10 individual interviews, conducted between September 2023 and February 2024. Interviews were either conducted in person or via MS Teams and either in Dutch or English, depending on the interviewee's preference. Each interview (except one organizational interview, of which notes were made) was recorded, resulting in a total of 9 hours and 13 minutes of audio/video recording of organizational interviews, and 7 hours and 17 minutes of audio/video recording of individual interviews. On average, an interview lasted 48 minutes.

3.2.2. Data analysis methods

After the data was collected, it was prepared for analysis. First, the software Trint was used to automatically transcribe all recorded interviews. Then, all transcripts were checked and any mistakes corrected. Each transcript was kept in its original language (either Dutch or English) for analysis. Simultaneously, all interview parts that could directly be used to identify an interviewee were anonymized. This data preparation process resulted in 488 pages of written data. The anonymized transcripts were then uploaded to the software Atlas.ti. All transcripts were read through and each fragment that could potentially be relevant to answering the research questions was highlighted. Simultaneously, notes were taken on any preliminary patterns that emerged.

3.2.2.1. Coding & analysis strategy

The coding and analysis methods differed per sub-research question. However, all codes were added manually to each highlighted fragment in the software Atlas.ti. Additionally, all coding occurred in English, even when a transcript was in Dutch. Translation of quotes to English occurred only once they were to be included in this report.

To answer the first sub-research question, '*what food practices do low-income individuals in Amsterdam Zuidoost engage in?*', a list of a priori codes based on the circular food practices identified by Massimiliano & Luigi (2022) and Rohenkohl do Canto et al. (2021) was developed (see Chapter 2). Emergent codes were added when additional circular food practices occurred in the data. Similar codes were grouped into larger thematic categories. Within phenomenology, these thematic categories are used to come to a general description of the phenomenon under study (Creswell & Creswell, 2018). Inspired by Massimiliano & Luigi's (2022) structure of sub-practices, a coding structure distinguishing between sub-practices and sub-sub-practices was created (Figure 4 provides an example of the coding structure. For the complete code list, see Appendix C).
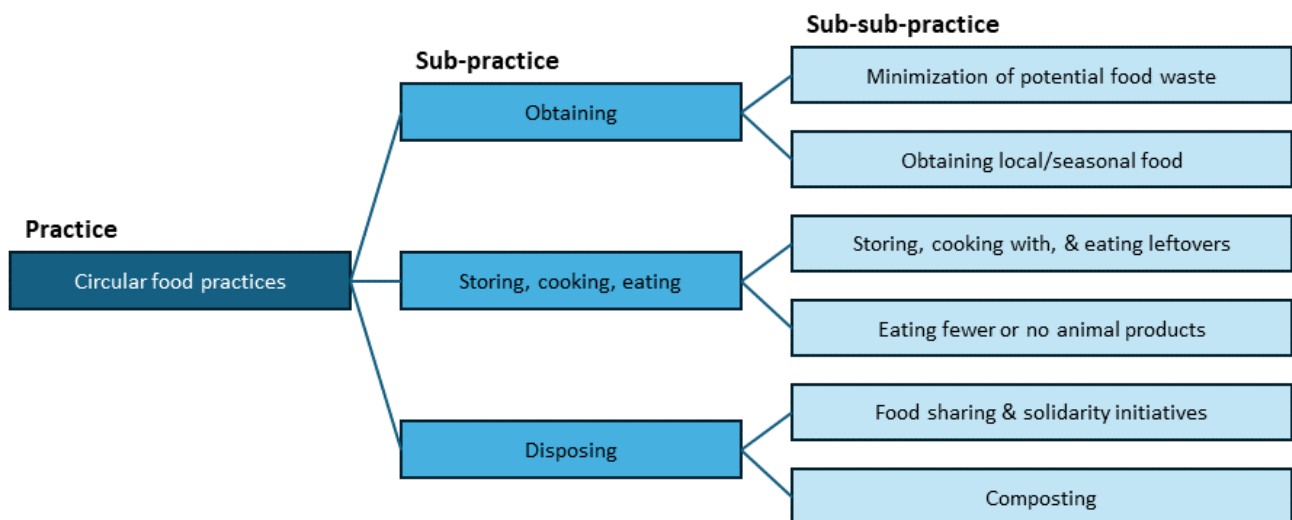
Figure 4: An excerpt of the code list, illustrating the structure of practices, sub-practices, sub-sub-practices.

To answer the second sub-research question, '*what practice elements (meanings, materials, and/or competences) do these practices consist of?*', only three overarching code groups were developed a priori, namely meaning, material, and competence. All codes were emergent codes and were chosen by the researcher to describe the content of the fragment they corresponded with as accurately as possible. Similar codes were then merged into larger thematic ones, which were then added to one of the three overarching code groups. (One code warrants some extra explanation here as it might present as counterintuitive: mental space as a material element. It encompasses the mental space someone has available to devote to certain practices. It was decided to consider this element a material, even though it could also be considered a competence due to its mental nature. However, as it was referred to as a limited, non-flexible resource by the interviewees, it was decided to put it in the material category).

Atlas.ti's co-occurrence analysis tool was then used to analyze what practice elements were part of what sub-practices. Only elements with three or more co-occurrences with at least one of the sub-practices were included to increase the focus of the analysis (see Appendix C for these emergent codes).

To answer the third sub-research question, '*Are these food practices conspicuously or inconspicuously circular?*', Atlas.ti's co-occurrence analysis tool was used again. This time to identify all sub-sub-practices that were connected explicitly to the meaning of circularity. It was ensured that only the sub-sub-practices that individual interviewees actually engaged in were included in the analysis of the quotes.

Finally, to answer the fourth sub-research question, '*How can the adoption of circular food practices be encouraged among low-income individuals in Amsterdam Zuidoost according to individuals belonging to this demographic?*', all data fragments from the individuals' interview transcripts containing insights into answering this question were flagged manually. Then, the co-occurrence tool was used once more to determine what circular food practices and practice elements were present in these fragments.

3.2.3. Data management

The following types of data were collected during the research period: interview recordings (audio and video), researcher audio notes, and research notes on paper. Additionally, transcripts were made of the interview recordings and consent forms were collected. The anonymized digital transcripts and consent forms were shared with both supervisors for safekeeping. Any additional personal information of the participants (e.g. contact details if the participant indicated to be interested in receiving the results of the study) remain in a separate, password-protected file on an external hard drive owned by the researcher. The raw data files (interview recordings, research audio notes, and research notes on paper) will be destroyed after the research thesis has been completed as they are not anonymous.

3.3 Ethical considerations

When considering a research design, '*[t]he general ethical issue … is that the research design should not subject those you are researching to the risk of embarrassment, pain, harm or any other material disadvantage*' (Saunders et al., 2019, p. 213). For this study, three possible aspects of the research design where these issues might occur were identified. Here, they are discussed shortly, and an explanation is given how these risks were minimized.

Firstly, there is the ethical discussion around researching disadvantaged groups. By researching such groups, there is an inherent risk associated with power imbalance introduced into the research design. Additionally, in the context of Amsterdam Zuidoost, a certain level of participation fatigue was observed among these groups. Amsterdam Zuidoost's unique characteristics have made it a popular location for urban research, and multiple individuals who were contacted as part of this research expressed their dislike of this. In general, the dislike hinged on the feeling that researchers would promise improvements in the district as a result of their research, but that the research participants would not experience any improvements. In other words, participants felt that the researchers would only take, and not give back. To avoid falling into the same trap and raising false expectations, it was made sure to only explain to participants that the research aimed to understand their food practices, without overpromising on potential policy recommendations. Additionally, it was made sure to '*adopt an empathetic stance. The challenge … is to enter the social world of the research participants and understand that world from their point of view*' (Saunders et al., 2019, p. 149).

To minimize the risk of a power imbalance, a thorough discussion of the participants' rights with them was had during each interview, using a consent form (see Appendix D). Extra attention was paid to how their data would be anonymized and stored (including that the anonymized interview transcripts would be shared with the CIFS team), the risk associated with participation, and that participants always have the right to retract their interview without any consequences to them.

This approach ties into the second potential ethical issue, that of payment. While the research participants in this study were not paid, some did receive a small thank-you for their participation in the form of a 10 euro gift card. Participants from organizations did not receive those gift cards, but when interviewed in a café setting, their coffee was paid for. Low-income individuals were offered these gift cards, which was disclosed to them before the interview. This could pose a risk to the integrity of the research, however, the

majority of the participants had forgotten about the gift card by the time the interview took place, and were surprised by receiving it once the interview ended. Additionally, two interviewees indicated that there was no need for it. This instilled confidence that the gift card was not the main reason for participating in this research. When interviewing a participant in their home, a small snack was also brought as a thank-you, but this was not disclosed beforehand. During the research process, it became clear that many participants appreciated having a space to share their story. The inclusion of plenty of time during each interview to provide this space and to take an emphatic stance was ensured, as discussed before. In this way, a little could be given back to the participants as well by providing a listening ear.

3

Thirdly, there is the issue of researcher subjectivity. Each researcher faces the challenge of subjectivity stemming from their own lived experiences and background (Kumar, 2018). The background and lived experiences of the researcher were quite different from the research participants: as a higher-educated, white, Dutch-born woman from a higher-middle-class family, low-income status is not an experience personally lived by the researcher. This was recognized in the risk overseeing important issues or nuances. Keeping an open mind and appreciating and respecting all lived experiences and opinions participants were willing to share were considered especially important. Stakeholders are the experts on their own lived experiences in ways that you cannot be as an 'outsider'. Additionally, extra attention was paid to making sure the interview guides used mainly colloquial language and avoided academic concepts. The creation of an open, respectful, warm, and welcoming atmosphere when interacting with the research participants was also ensured. Additionally, extra attention was paid to avoiding the use of normative language, both in contact with the interviewees and in writing this thesis.

RESULTS

RESULTS

Chapter preview

This chapter presents the research findings and is structured as follows. First, the **(demographic) characteristics** of the interviewees are presented for context in section 4.1. For the individual interviews, this concerns a detailed description of the demographic characteristics of each interviewee, including income, food budget, cultural and educational background. For the organizational interviews, this mainly concerns the link of the organization's activities to circularity and/or inclusivity in the food system in Amsterdam Zuidoost.

Then, each sub-research question is answered in order, through examination of the research data. Due to the length of the results chapter and to increase readability, section previews and summaries are provided throughout the chapter, similarly to the chapter previews at the beginning of each chapter.

Section 4.2 dives deeper into the **circular food practices that low-income individuals engage in** and the **elements (meanings, materials, competences) that make up these practices**, answering sub-research questions one and two. Low-income individuals are shown to engage in many different food practices that contribute to circularity of the food system, which are summarized in the section summaries. Additionally, with regard to the elements that make up these practices, a wide range of meanings, and a smaller range of materials and competences have been found, which are also summarized in the section summaries (a screenshot of the co-occurrence analysis results is provided in Appendix E).

Section 4.3 answers the third research question, **whether these food practices are conspicuously or inconspicuously circular**. The majority of the food practices that were engaged in by low-income individuals are found to be inconspicuously circular. When circularity is conspicuously part of a food practice, this is mostly the case for food practices concerning the end-of-life of food, and/or reported by low-income individuals with a higher educational or Surinamese background.

Finally, section 4.4 presents the **individual interviewees' insights for increasing the adoption of circular food practices by low-income individuals**. These insights focused mainly on changing material (and some competence) elements.

4.1 (Demographic) characteristics of the interviewees

4.1.1. Interviews with low-income individuals

The sample of individuals interviewed was very diverse, as is shown in Table 4. Individuals were interviewed ranging between the ages of 24 and 76, with clusters in the mid-twenties, early to mid-fifties, and early to mid-seventies. There was a relative balance between the genders, with six interviewees presenting as female, and four as male. Additionally, a wide range of cultural backgrounds occurred, which is in line with the multicultural identity of Amsterdam Zuidoost. The two most represented cultural backgrounds were Surinamese and Dutch. Multiple interviewees reported a mix of cultural backgrounds. Education levels also varied widely among interviewees, ranging from primary school to a Master's at the university level.

Table 4: *Participant characteristics of the individual interviewees. Colors represent a comparison with not-much-but-sufficient monthly budgets and weekly food budgets for 2023 (see Box 2). Red means the monthly income or food budget is lower than the not-much-but-sufficient budgets. Yellow means unknown or close to the budget, green means over. Adult children are considered children in this study as long as they live at home. Some adult children might contribute to the household income, but the interviewees did not disclose the exact amounts if this was the case.*

ID	Found via	Age	Sex	Cultural background	Highest level of education
				Demographics	
c1	Personal network	28	m	Swiss & Equadorian	wo master
c2	Personal network	26	f	Austrian	wo bachelor
c3	Food bank	52	f	Surinam	vmbo-equivalent
c4	Food bank	52	f	Dutch	hbo
c5	Food bank	50-55	f	Surinam	mbo
c6	Food bank	72	f	Antillian (Curacao)	vmbo-equivalent
c7	Personal network	24	f	Dutch & Filipino	wo bachelor
c8	Community meal A	52	m	Dutch	mbo-equivalent
c9	Community meal A	40	m	Indonesian & Russian	Unknown
c10	Community meal B	76	m	Surinam	Primary school

ID	Work situation	Income (month)	Food budget (week)
		Budget	
c1	Unemployed	0	60-65
c2	10 hours a week	1300	80
c3	36 hours a week	2100-2200 (debts, 500/month)	Unknown
c4	32 hours a week + volunteer work	1900 (debts, amount unknown)	40-50
c5	Benefits + volunteer work	1200	50-70
c6	Retired (AOW)	850	25
c7	Student loans + part-time job	1200	80
c8	Employed, hours unknown	1800-1900	40
c9	Undocumented side-job	200	Unknown
c10	Retired + volunteer work	Tight	Unknown

ID	Neighborhood	How long in ZO?	Household composition
		Living situation	
c1	E buurt	2 years	single (2 housemates)
c2	Ganzenhoef	2 years	single (3 housemates)
c3	Holendrecht	16 years	1 adult child
c4	Reigersbos	7 years	2 adult children
c5	F buurt	25 years	2 adult children
c6	Kraaiennest	27 years	single
c7	F buurt	6 months	with partner
c8	Gein	41 years	single
c9	Reigersbos	1 year	assisted living
c10	Unknown	51 years (in NL)	with partner

When considering the employment status, income, and food budget, together with the main demographics of the interviewees, three main groups were distinguishable. Firstly, there is the group of higher-educated twenty-year-olds, who are living on a tight budget (c1, c2, and c7). Either because they are still following higher education, limiting their earning potential next to their studies, or because they just graduated but have not been able to secure employment yet. While their income levels are generally below the not-much-but-sufficient budget, they do spend more on food than the weekly food budgets associated with the not-much-but-sufficient budget. The expected temporary nature of the low-income status of these individuals could be an explanation for this phenomenon.

Secondly, there is the group of employed individuals who still struggle to make ends meet (c3, c4, c8). While these individuals generally work full-time jobs, debts put pressure on the available income, and two-thirds of these individuals use the food bank. Food expenditure is generally below the not-much-but-sufficient budgets. While one of these individuals reports an income above the not-much-but-sufficient budget, they were still in possession of a city card with a green dot, which you can only obtain if you have a low income and little financial assets. This, in addition to their low food expenditure, is an argument for including this individual in this group.

Finally, there is the group mainly depending on social benefits (c5, c6, c9, c10). Within this group, the type of social benefits varies, with half of the individuals receiving retirement benefits. In general, the dependency of this group on benefits puts their income below the not-much-but-sufficient budget, and their weekly food budgets as well. One individual's situation differs a bit within this group, as this individual lives in assisted living because of health reasons. Therefore, this individual receives a weekly stipend, while their main meals are provided by the assisted living facility. It was implied that all social benefits directly went to the facility. This individual also possessed a city pass with a green dot.
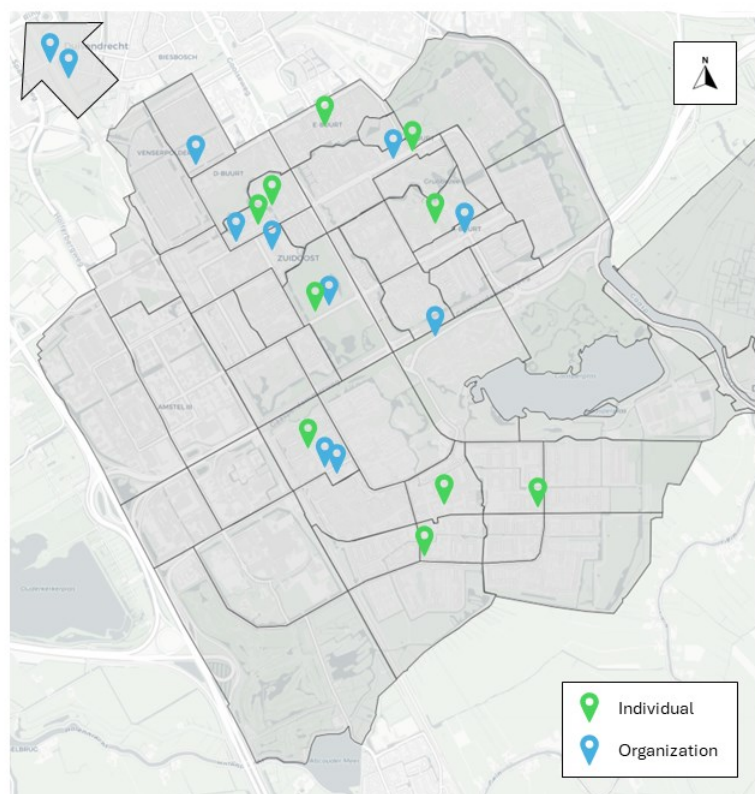

Figure 5: *Geographical spread of individuals and organizations in Amsterdam Zuidoost. Two organizations were not located in Zuidoost itself, but in the city center, indicated by the arrow in the top-left corner of the map.*

Figure 5 presents the geographical spread of both the individual and the organizational interviews. In general, the individual participants live well-divided over Amsterdam Zuidoost. There is a lack of individual interviewees in the Southern and Eastern edges of the city district, but this can be explained by the slightly higher income levels in those neighborhoods. Additionally, the South-Western part of Amsterdam Zuidoost has no interviewees at all, which can be explained by the commercial and industrial use instead of residential use of these neighborhoods. How long individual interviewees have been living in Amsterdam Zuidoost varies greatly, from 6 months to multiple decades. The household compositions also vary, with five participants being one-person households (either living with or without housemates), two participants living with their partners, one participant living with one adult child, and two participants living with two adult children. All of the participants living with children were single-parent households, and all of the children were already adults.

4.1.2. Interviews with organizations

In the organizational interviews, there was also a relatively large variety of types of organizations interviewed (see Table 5). Participants representing NGOs, academia/research, governments, and initiatives started by private individuals have been interviewed. Only for-profit organizations are not represented in this sample (the for-profit organizations that were approached as part of this research were not available for an interview). Six of the eleven interviews centered around organizations active in circular food provision for low-income individuals. Two interviews were with municipal representatives of the city of Amsterdam and district Zuidoost. Three more interviews were conducted: two from an academic point of view, and one with the representative of multiple NGOs focusing on urban agriculture. The interviewees represented many different roles, which were almost equally divided between voluntary and paid roles.

Table 5: Characteristics of the interviewed organizations and their representatives.

ID	Organization type	Organization description	Interviewee role	Interviewee contract
o1	NGO	Food bank	Coordinator distribution point	Volunteer
o2	Academia/research	Urban agriculture & education initiative	Program & business developer	Paid
o3	Governmental	Municipality, general	Advisor food strategy & urban agriculture	Paid
o4	NGO	Food bank	Coordinator distribution point	Volunteer
o5	NGO	Urban agriculture	Co-initiator	Unknown
o6	Academia/research	EU-funded research	Coordinator/researcher	Paid
o7	Governmental	Municipality, Zuidoost	Community coordinator green	Paid
o8	NGO	Community meal	Volunteer on location	Volunteer
o9	Private initiative	Food cupboard & meal provision	Initiator	Volunteer
o10	Private initiative	Food cupboard & meal provision	Initiator	Volunteer
o11	NGO	Community meal	Volunteer on location	Volunteer

ID	Link to circularity	Link to inclusivity
o1	Reuse of leftover food for human consumption	Food provision for low-income households
o2	Cultivation of local, no-pesticide, culturally-appropriate foods, all in a cold greenhouse	Combination of professional and community allotment plots and educational initiatives centered around growing culturally appropriate foods
o3	Policy and strategy around food, circularity, and urban agriculture	Inclusivity is also part of the food strategy, special focus on access to healthy food
o4	Reuse of leftover food for human consumption	Food provision for low-income households
o5	Focus on greening the city, including edible and/or community gardens	Strong focus on community initiatives
o6	Research on how the food environment can be made more sustainable and inclusive	Topic of the research + co-design approach with the community: financial and network support for chosen interventions
o7	Policy and hands-on work around food, urban green, and participation and co-creation	Participatory and co-creation approach to urban green/agriculture
o8	Use of donated surplus foods to cook to-go meals for the community	Provision of free, healthy meals, with a special focus on food-insecure children
o9	Uses food bank surpluses	Food provision for low-income individuals in initiators apartment complex, plus meal provision and delivery for low-income elderly
o10	Gets part of inventory from online retailers that specialize in surplus foods or foods that are about to go bad	Provides food and non-food items for those in need (also cooks meals)
o11	Uses food bank surpluses	Provides healthy and social 3-course community meals for a few euros

Table 5 also presents in more detail the links of each organization to circularity and inclusivity. The links to circularity can be roughly divided into 1) the use of surplus foods, which we see most often with the NGOs and private initiatives, 2) working on local and community agriculture, as seen in academia, government, and NGOs, and 3) policy and research on circularity and inclusion, by academia and government. The closer the connection of the organization to the inhabitants of Zuidoost, the more practical its efforts. Links to inclusivity are mainly food provision for low-income households but also include policy, educational, and participatory/co-creation efforts concerning food access in Amsterdam Zuidoost.

4.2 Engaged in food practices & their elements

4.2.1. Sub-practice of obtaining

Section preview

This section of the results chapter answers the **first two sub-research questions**: '*What food practices do low-income individuals in Amsterdam Zuidoost engage in?*' and '*What elements (meanings, materials, and/or competences) do these practices consist of?*'. The section is structured as follows: first, an overview of the co-occurrence of meanings, materials, and competences among the sub-practices is provided for a high-level understanding of the results. Subsequently, the sub-sub-practices of the **sub-practice of obtaining** are discussed, then those of the **sub-practices of storing, cooking, and eating**, and finally those of the **sub-practice of disposing**. Within each part, the sub-sub-practices are presented in order of how much the interview participants engaged in them.

Each of the sub-sub practices are presented in more detail and through direct quotes. Additionally, **practice elements** (meanings, materials, competences) that make up the food practices are discussed where they occurred from the data. The results' focus is mainly on the insights obtained from the interviews directly with individuals, but when applicable, insights into the food practices of low-income individuals from the organizational interviews are also included.

The sub-practice of obtaining regards all food practices that have to do with acquiring food, or in other

Section summary

This section focuses on the sub-practice of **obtaining** food. In it, the different sub-sub-practices that low-income individuals engage in and what materials, meanings, and competences make up these practices that the data showed are elaborated upon. The data showed that low-income individuals engaged in the following sub-sub practices, in order of how often they were engaged in: **reducing potential food waste, reducing packaging use, obtaining organic foods, obtaining local and/or seasonal foods, growing their own foods, and participating in alternative food networks**. Sub-sub practices that were expected from literature (see Chapter 2) but were not observed were dumpster diving and the use of digital platforms fighting food waste.

While many different practice elements were present in the data, the following were most prevalent in the sub-practice of obtaining food (also see Appendix E). Meanings: **cultural appropriateness, health, quality, solidarity/community and taste,** materials: **finances and general availability of food options.** and competences: **knowledge about food offerings in the neighborhood**.

words, any food going into the household. Within the individual participant sample, people got the majority of their food from supermarkets, with a slight preference for discount supermarkets like Vomar, Lidl, and Aldi. The reason for this was two-fold: often these supermarkets are near the interviewee's home, and therefore easily reached by foot or bike, and the supermarkets have a wide selection of basic foods at a relatively low price point. Non-discount supermarkets, like Albert Heijn and Jumbo, were also visited, either, again, because they are close to the interviewee's home, or because they offer a wider variety of foods than the discount supermarkets. These reasons consist of material elements of the sub-practice of obtaining food. In addition to the supermarkets, four of the ten interviewees depended on the food bank for a part of their food provision. However, as these provisions are not enough to cover weekly food needs, these participants also frequented supermarkets.

Next to supermarkets and the food bank, interviewees also obtained smaller portions of their food from other sources. Local markets, local (ethnic) stores, their assisted living facility, their gardens, friends/family/acquaintances, work, volunteering, bingo, and hunting and fishing were all mentioned in the interviews. These different minority sources will be deliberated upon later in this chapter.

4.2.1.1. Sub-sub practice: reducing potential food waste
The sub-sub practice that was engaged in most when obtaining food is the minimization of potential food waste. This was done in different ways: by obtaining surplus foods, by obtaining foods that are about to go bad or are considered imperfect, by planning food shopping, or by only accepting foods that you can use (the latter is exclusive to food bank recipients). Within the interviewee sample, there was a variety between voluntary and non-voluntary engagement in these sub-sub-practices.

First of all, looking at obtaining surplus foods, all food bank recipients engaged in this sub-sub-practice, not necessarily out of choice, but because of financial necessity. The food that is distributed by food banks is surplus food, donated by different actors such as supermarkets, wholesalers, and farmers. The food bank recipients all expressed gratitude for the existence of the food bank and the help the weekly food packages provided. However, they also indicated that the food on offer sometimes lacked healthiness, taste, variety, and shelf life; meaning and material elements of this sub-sub-practice (also see Chapter 4.2.2). The following quote underlines the lack of perceived healthiness and taste of the food bank offerings:

> *Well, because there are just a lot of things that I wouldn't actually buy myself. I am extremely grateful for it, because we have really been able to feed, no, fill ourselves with it. I managed to fill myself with it. I haven't necessarily been able to feed myself with it, but I have been able to fill myself with it over the years. … Literally. Is my belly full or do I have healthy food for my body? … And that is indeed a real difference. … If it had been tasty, people would have bought this in the store. And it had not been available to me. So there's just a lot of crap in there. - c4*

Voluntary obtaining of surplus foods took place at places of (volunteer) work. Individuals were allowed to take some food or ingredients home from work or food banks and community meals if they were left over after their volunteering shift. The obtaining of foods that are about to go bad, or obtaining imperfect fruits/vegetables, was also reported to be engaged in voluntarily:

> *But if I know that I will eat it the same day or two days after, I sometimes also get the things which don't look that nice anymore, because I think that probably people will not buy it and I use it right away anyway, so I can do that. … Because I do know that I will use it and that it's not bad yet. I wouldn't buy it if it was already bad. But if I know that it's not bad and that I will use it before it goes bad, I buy it because then I think I can contribute a bit to reducing the food waste. – c2*

The sub-sub-practice of planning was discussed less by the interviewees. Interviewees did minimally indica-

te that they planned out their food shops in advance, or used a grocery list. Only one interviewee explicitly mentioned that they normally looked at what they already had at home, before deciding what to make for the next meal. Then they would go grocery shopping to get the missing ingredients.

An interesting sub-sub-practice by food bank recipients that emerged from the interviews was that of only accepting foods that they will use when picking up the weekly food package. Participants explained that when they are at the food bank, they look through the foods they receive, and leave behind the ones they will not or cannot use. Different meanings and materials emerged: not wanting to waste food, thinking others could use it more, taste, cultural appropriateness, and quality of the food.

> *Yes, because when I go to the food bank, yesterday they gave me, you know, that uhm from Sinter-klaas, the one with marzipan [spijs] in it. …Yes, they wanted to give me one, but I already have one. I have said: no, no, I don't want any more, because I already have one at home. So when I get something that I already have, I say no, I don't want it. And I say. I feel bad when I have to throw things away and there are a lot of people who do [need it].* – c6

The food banks that were interviewed also recognized this sub-sub-practice but added the nuance that most of their clients, especially larger families, still take everything offered to them. If all the food is then also eaten, they did not know, adding that they guess that any food that is not used might be thrown away. Chapter 4.2.3 goes into more detail about what happens with these foods. In the meantime, one of the food banks also supported the sub-sub-practice of only accepting food that you will use by providing a material element in the form of a sharing crate:

> *Uh and I always see a lot, just say the moment they look at that crate in front of them that they are really looking at it critically. Uh no, we don't eat this, we don't eat this. We don't use that. So, for example, we always have a crate at the end of the table near the non-perishable foods. It contains everything that someone does not want to take with them and the next person can say: oh yes, but I do like that. We use that a lot. … So, in the end, it levels out, so everything goes away. Uhm and I also think that someone should have that choice.* – o4

4.2.1.2. Sub-sub practice: reducing packaging use

Interview participants also spoke about reducing the use of packaging when obtaining food. Mainly, this considered fruits and vegetables, and plastic packaging, which are material elements of this sub-sub-practice.

There are some differences in the occurrence of and meaning elements of this sub-sub-practice between the higher and lower-educated individuals in the sample. All more theoretically educated individuals (university of applied sciences (HBO) level and higher) reported a preference for buying foods without packaging and linked this to environmental reasons. The material element of reusable bags that are then brought to package the loose foods was also observed.

> *I would say, I try to buy food with less packaging. I would say there is, at least with every grocery haul. If we, let's now look at the bigger grocery hauls, and not just buying one thing. There would always be something that is not packaged. … Yes. And that's then a conscious choice because sometimes I do see that they have the same thing packaged and unpackaged. And then I would always go for the unpackaged one.* – c2

> *I do look at things that are not fully packed in plastic, but I think supermarkets are now doing that less and less. They try to regulate it a little bit more I think. For example, you have like the Albert Heijn baggies, or baggies that you can bring every time. I use those, yeah.* – c7

This showed a certain awareness or knowledge about environmental issues and how one's individual choices can have some impact on those, which are competence elements of this sub-sub-practice. Among the interviewees with a more practical educational background (MBO or lower), avoiding packaging had other material elements: for example, unpackaged fruits and vegetables are more easily checked for quality, or just that the food bank mainly offers unpackaged fruits and vegetables.

> *No, I don't easily buy in plastic. So I'll take the other one. … Yeah, I'll do that. Tomatoes, and like that, if they are loose, then I think that is better. And eggplant too. You can see then for yourself what [is right]. Because when they are all packaged, you don't see it that well. - c3*
> *You get everything loose at the food bank. Almost everything loose. Only sometimes you get sandwich toppings [beleg] that are packaged. Sausages, those kinds of things. But all fruits and vegetables are loose. I'm going with a bag specifically for vegetables and another bag specifically for other things. - c6*

While more than half of the participants reduced the use of packaging while shopping, two of the participants stated that they do not engage in this sub-sub-practice, either citing that it is not that important to them (meaning) or explaining that they do buy loose fruits and vegetables, but then bag them themselves in small plastic bags to transport them home (material). None of the interviewees mentioned obtaining food at specialized packaging-free shops, which can be explained by that, to the best knowledge of the researcher (supported by a Google search for 'packaging-free shop Amsterdam Zuidoost' and 'verpakkingsvrije winkel Amsterdam Zuidoost' on 03-06-2024), these do not exist in Amsterdam Zuidoost at the time of writing.

4.2.1.3. Sub-sub-practice: Obtaining organic foods
Obtaining organic foods was less often engaged in by the interview participants, but when it was, it was either for sustainability (environmental, social, and animal welfare) or health reasons, and only for specific products, representing meaning and material elements of this sub-sub-practice:

> *I do think that for some things, it's really better to buy it organic. And I do try to buy organic because I have a feeling that it's a bit better for the environment. Certain things. I think the things where it doesn't make that much of a difference in terms of costs. … Or where I have the feeling where I think that I'm willing to pay the price. … For example bananas. … I eat a lot of bananas and I do prefer the organic ones because I do have a better feeling if I buy them. I do have the idea that, maybe then the farmers also get a bit more money, even though I'm not quite sure if this is really how it works. – c2*

> *For my son, because if I buy milk [for him], I can't buy that gallon. I'll buy [the gallon] for me. But he wants, even when I make porridge, he asks what kind of milk Mom used. … So really, everything for him really has to be [organic]. He doesn't just buy something. … And he also has organic drinks. Really everything. Milk, yogurt, everything. … Yes, he is always like that, with his health. – c3*

The meaning element that organic foods are considered healthier was also very prevalent among the interviewees who do not currently obtain any organic foods. While these interviewees did not engage in this sub-sub-practice, the data still provided interesting insights on why in the form of practice elements. Interviewees reported that, while they might be interested in eating more organic foods, they do not do so, due to financial limitations (material). Some interviewees shared that they do not even look at these types of foods, as they already know they cannot afford them:

> *Organic, they say it is better for your health. So then. …Then I hope that that is the case. … You hear about it, you see it, but I always say if I had money, … I could also buy that, but I don't have that, so*

yes. … I have to look the other way. – c6

I think most supermarkets [have it] but I usually don't look at it because it's expensive. – c7

Interestingly, one participant, who grows their own organic vegetables, had another reason linked to meaning for refusing to buy organic foods from a store:

They're tricking you, honey, into thinking it's organic. … Seriously … You pay for it to be organic, but it's not true. They cheat you. … They plant with regular fertilizer. That's not organic. – c10

4.2.1.4. Sub-sub-practice: Obtaining local and/or seasonal foods

Within the category of obtaining local and/or seasonal foods, three different sub-sub-practices were identified: obtaining local foods and obtaining seasonal foods from stores (both supermarkets and smaller stores), and obtaining food directly from the farmer. Of these three sub-sub-practices, obtaining local foods from stores was most prevalent:

I look at where it comes from. Sometimes, I like to buy, for instance, let's say, blueberries or oranges. And sometimes they come from Spain and then I am like oh, it's nice. And sometimes they come from New Zealand. And then, maybe not this time. … Because I know about the carbon footprint. And I also know it's better to eat something local also because of the sustainability. – c1
I do buy local and organic foods. For the local because the transport … is the lowest. So the food doesn't have to travel that far. And also I do have the feeling that in the Netherlands it's, even though it's probably not the most local option, a lot of good food like fruits and vegetables come from the Netherlands. For example, at home, I also buy a lot of things from the Netherlands because this is what they offer. And I have the feeling that if I buy it here, then at least it's from the same country. – c2

The quotes above link the sub-sub-practice of obtaining local foods to the meaning of sustainability, showing competence elements of an awareness or knowledge about environmental issues, and how one's individual food choices can have some impact on those. They also demonstrate that what is considered local can differ: interviewees connected local to very different distances to home, from farms at cycling distance of Amsterdam Zuidoost to the whole continent of Europe.

Only one interviewee added that they also consider whether foods are in season. However, the argument could be made that local foods, especially fruits and vegetables, are to be considered seasonal as their availability depends on growing seasons. Another interviewee shared that they would like to learn to cook more seasonally, but that they lacked the skills due to them growing up in a tropical country without seasons (competence).

Obtaining local foods is also connected to the meaning of cultural appropriateness. Due to Amsterdam Zuidoost's multicultural character, one interviewee explained that they considered cultural foods as local since they moved to Zuidoost:

So my definition of local now I live in Southeast is actually all the vegetables and all the herbs that come from countries like Surinam. Because I mean, Southeast is like … a melting pot with all those different countries, people from those different countries. And what I see, maybe it's not relevant, but when I first went into the supermarket, when I moved in, I saw very different things. When I walked in, like Poncha Cuba, which is like Caribbean alcoholic liquor. And all things catered to more, I think the Surinamese or Caribbean market. So that's what local is to me. – c7

One of the interviewees with a Surinamese background explained that, while the cultural appropriateness of vegetables is important to them, they personally prefer such vegetables to be grown in the Netherlands. They stated that the taste (meaning) is the same, but that it is cheaper (material) to obtain culturally appropriate vegetables that are grown in the Netherlands. However, their quote also showed that other individuals in their community might not share this view:

Certain people think it comes from Suriname. ... Because if you want that, you have to go to the ethnic store. But you're not sure either. … But when I live here I don't really need any special vegetables. If the antroewa is grown here, I'll just buy it. … But yes, other people want it specifically from Suriname. … But you don't taste any difference. Because if I make antroewa that is grown here and from Suriname, you can't taste it. So they are fooling themselves. Really, it will cost you more! – c3

Organizational interviews brought forward that, due to its location at the edge of the city, Amsterdam Zuidoost is located closer to farms than other parts of the city. This was seen as a material element that could be part of the sub-sub-practice of obtaining food directly from the farmer. However, this was only practiced by one individual within the individual interview sample:

Sometimes we go to Abcoude. And then we go there to get cow's milk. … Then I might take fifteen, twenty liters with me, cow's milk. I buy from the farmer and then I hand it out to … other people. Those who want that. One of the older women then makes a kind of dish from the cow's milk. … [It is] fresh, honey. If you cook it then, ohhh, such a layer of that fat on it. And she likes that. … You can also buy cheese. You can also buy meat and stuff like that. So that's where we always get it. – c10

This sub-sub-practice had three meaning elements: solidarity/community, cultural appropriateness, and taste. When obtaining food directly from the farmer, the interviewee gets a large amount to share with others. Additionally, and this occurs in combination with the material element of the fat percentage of the milk, the milk is then used to make a culturally appropriate dish, and the fattiness of the milk is also linked to its good taste.

A couple of individuals shared that they would like to obtain more of their food directly from a farmer, but knowledge about what is on offer (competence), financial means, transportation limitations, and available energy/mental space (material) prohibited their engagement in this sub-sub-practice thus far.

First of all, I do think it might be more expensive. And then also that it's quite a hassle to go to those places. I'm honestly not quite sure where exactly I can get them. And then going there by bike feels a bit too much. [I have the feeling] that by public transport, it takes quite a long time to go somewhere. So yeah, I think it's mostly financial reasons, but also the mode of mobility or transport, how I would get to those places. – c2

I didn't have enough energy to pay much attention to that. I know that I, for example, through my neighbor I have now received an address from someone where she orders the vegetables, Surinamese vegetables from someone who has greenhouses near Almere, I believe, so then it is from here. In addition, it is someone who is local, so to speak, who earns it himself, and I think: oh yes, maybe now that I'm getting a little more financial space to think about it, maybe I should go to him then to order? – c4

One individual also mentioned that they could see if the school gardens located in Amsterdam Zuidoost could potentially be a source of local vegetables for them. Organizational interviews with the food bank showed that they sometimes receive vegetables from said school gardens.

4.2.1.5. Sub-sub-practice: Growing your own food

Concerning growing your own food, two of the participants engaged in this sub-sub-practice. Additionally, one interviewee had engaged in this sub-sub-practice in the past but stopped. They indicated that they would like to start again. Three other interviewees also indicated that they would like to start engaging in the sub-sub-practice.

The participants who grew their own food did so on different scales: either small amounts from their back-yard or large amounts from a 100-square-meter allotment garden. However, they both stated the same reason for engaging in this sub-sub-practice: financial (material). Additionally, enjoyment of gardening and cultural appropriateness, taste, and associated healthiness of food (meanings) were also elements of this sub-sub-practice. Other material elements were access to a garden, seeds, and other gardening supplies.

> *In the summer we did plant cucumbers and other things ourselves, but with this weather that is not possible. ... Yes, or you have to have a greenhouse where everything stays a little warm so that that is possible. … Look, when most vegetables become a bit more expensive in the store. Then you think, those seeds you can buy yourself and those things, fertilizer, containers. Of course, you have to do all the preparation to do this. Yes, and you can eat it too*. - c5

> *If you buy it per kilo, you pay twelve, € 13. ... No, Surinamese vegetables are expensive, really expensive. ... I grow them myself, honey. - c10*

> *Surinamese vegetables that are bitter. You got that bitawiri. We call it bitawiri. But that's bitter. … Leafy vegetables. … Bitawiri, sopropo. …And gomawiri. Those are three things that are really bitter, but it's good for you because it is good for your kidneys. … That keeps you healthy. Seriously.* –c10

To successfully grow your own food, knowledge and skills about gardening are needed, which are competence elements. In the study sample, these competences were connected to the interviewees' cultural background, especially being Surinamese:

> *I always like the garden. [laughs] … I do want to [grow my own food]. I would plant tomatoes, and all those things, pepper. If I find a garden. Because my brother lives in Almere. But he's so far away. He has a garden. … So if he was closer then I could go plant. [And did you used to have a garden in Suriname?] Yes, because there you have a larger plot, so everyone has a garden there. And I always had vegetables. … I miss that. … [And what do you especially miss about that?] … To plant yourself and then you know what you are eating. – c3*

Limiting factors to engage in the sub-sub-practice are mainly knowledge of opportunities nearby (competence), a lack of physical (exterior) space at home, or mental space (material):

> *I do have the interest, but I don't have the opportunity. … I live in a shared apartment, so I do have a very small room, like a small space. We do have a bit of a balcony in front of our apartment. We all store our bikes there, so it is for bikes and there's not really space to put anything else there. And I don't have a garden or anything. [And there's no community garden or anything like that close by?] No. – c2*

> *Well, I've been working on that. I had a small garden, but on my own, I didn't have enough mental space to maintain it properly and so I eventually got rid of it. So yes, I would like to. But hey, what's possible?– c4*

4

4.2.1.6. Sub-sub-practice: Participating in alternative food networks

Concerning participating in alternative food networks, three of the participants shared that they sometimes get leftover food from friends, family, or acquaintances. When this occurred, it was in the form of prepared foods, either home-baked bread or full meals (materials). Additionally, the meaning element of solidarity/community was also present. While the interviewees indicated that they sometimes get food from others, their quotes also showed that they help others in return, either through food or help in the garden (see also 4.2.3).

> *My cousin occasionally … Recently he made bami. Then he also brings it.– c3*

> *Really, we live together, we're not rich. I live on the edge. … But we eat every day. … We don't lack anything. I really mean that. … You won't believe it when I tell you. Those people we help in the garden. Sometimes they call us. Can you come to me, come and help, they lure me there with excuses. … Then I get a whole pan of food. … Then they made roti. Then they made this, they made that. – c10*

This meaning of solidarity/community also was an element of other alternative food network sub-sub-practices. One participant recalled that he would get game, shot by an acquaintance who worked as a game warden, and would partly redistribute this meat among his community again. The same individual would also catch fish and redistribute that meat too:

> *We went fishing. … I took it with me. Freezing it, I also gave it to acquaintances. … I have an acquaintance who is also a game warden. And then he shot for me, for example, hares, or he went hunting: a deer. And then I got a leg. … [or] geese. – c10*

Finally, another, and unexpected, community-driven alternative food source was the local bingo, where food functioned as prizes:

> *Look, she loves to play bingo. … Previously she had won sixteen prizes. Sixteen! … The whole cupboard was full of groceries. … It's just onions, things. … Bami, macaroni and things like that. Kidney beans. – c10*

While expected from the literature, the sub-sub-practice of dumpster diving was not mentioned by any of the interviewees. The same was true for the use of digital platforms fighting food waste for the individual interviews. This sub-sub-practice did however emerge in one of the organizational interviews, where these platforms were used to obtain food for a food pantry, indirectly engaging low-income individuals in this sub-sub-practice:

> *If there's one thing I hate, it's waste. Whether it's food or money or whatever. I just don't like waste, but certainly not with food. … Anyway, I also participate in Too Good to Go, you know? … I have been participating in that for a few years. Sometimes I even just get a package that I don't know, or I don't necessarily know if I like it, then I just get it, and then I give it away to someone who can use it. … You have websites like Foodello, I don't know if you know it? …Foodello. You could call it a kind of online supermarket, I guess. And they buy pretty much everything that is going out of the assortment at a store or that is about to reach its sell date, but is still usable or it has just expired and is still usable. And things like that. And with that I just fill my entire pantry.– o10*

4.2.1.7. Obtaining sub-sub practices that were not observed

One sub-sub-practice that was expected to occur from the literature, but that was not observed in the low-income individuals that were interviewed as part of this research was the participation in community-

supported agriculture schemes. It is suspected that this is due to similar reasons as the ones that prohibit engagement in obtaining food directly from the farmer, such as limited finances or mental space, a lack of knowledge about what is available, and limitations to physical access.

4.2.2. Sub-practices of storing, cooking, and eating

Section summary

This section focuses on the sub-practices of **storing, cooking, and eating** that are presented together due to the strong interconnections between the three sub-practices. It considers any food practices regarding storage, preparation and consumption of food. It discusses the different sub-sub practices that the data showed that low-income individuals engaged in and what materials, meanings, and competences made up these practices. The data showed that low-income individuals engaged in the following sub-sub practices, in order of how often they were engaged in: **storing, cooking with, and eating leftovers, eating fewer or no animal products, using food that is about to go bad, and not preparing too much food**. A sub-sub practice that was expected from literature (see Chapter 2) but was not observed was the use of reusable containers to store foods. An unexpected food sub-sub-practice was using parts of food that are generally discarded for human consumption.

While, similarly to the sub-practice of obtaining, many different practice elements were present in the data, the following were most prevalent in the sub-practice of storing, cooking, and eating (also see Appendix E). Meanings: **cultural appropriateness, health, and food should not be wasted**, materials: **finances**, and competences: **cooking skills (creativity/flexibility)**.

4.2.2.1. Sub-sub-practice: Storing, cooking with, and eating leftovers

The interconnection between the sub-practices was especially strong concerning the storage, use, and consumption of leftovers, which was practiced by all individual interviewees, except for the interviewee living in assisted living whose meals were provided by the facility.

In general, interviewees stored any leftovers they have in either their fridge or freezer, which represent material elements. There was a distinction between the different types of leftovers when the decision was made on where to store what. Complete, prepared, meal portions were often stored in the fridge for use during the following days. Time was one material element that made up this sub-sub-practice: interviewees indicated that cooking multiple portions in one session saves them time in the next few days. Additionally, it provided the convenience of having portions ready to bring to work, either for lunch or for dinner when working an evening shift.

> *Normally I eat my leftovers by myself. I try. Normally I cook more than I eat in one meal, and then I eat this the next day. Or I know in two days I don't have as much time to cook, so I will eat it then. … But I hardly, I never really throw anything away.* – c2

The freezer was a popular choice when the leftovers were considered potential ingredients for new meals, and was mainly reported to be used by the interviewees with a Surinamese background. These ingredients were then repurposed for other meals in the undetermined future, showing the competence of flexibility and creativity in cooking skills.

> *Of course I have leftovers! So I put those brown beans in the freezer. …You know, for the other day*

of the week. Or for when I want it. - c5

Sometimes the refrigerator is so full. Because I still have drumsticks now, I had chicken in the oven, and it's still there. So I actually have to, I'm going to put it in a bag and put it in the freezer. And if I'm going to make nasi, I can take it apart and then you can... then you can make nasi, a tasty nasi. - c3

We sometimes get meat from [where I volunteer] when it is leftover. Minced meat. Last week we put minced meat in the freezer. … We make meatloaf from it. … Just minced meat, herbs. Put the stuff in and then in the oven. Then it becomes a little loaf and then you can cut it into slices. …And then with ketjap. Oh my gosh. Nice man, oh my god. – c10

Foods that were frozen were mainly protein sources such as meat, chicken, fish, and beans, and sometimes staple foods such as cooked rice. Vegetables were frozen less: often interviewees indicated buying vegetables only when they wanted to cook with them, as they go bad more quickly (materials). Proteins and staple foods were more often stockpiled, partly because these were considered easier to freeze, and partly because this saved money (materials).

One important meaning, next to convenience, that emerged from the sub-sub-practice of using leftovers was the value of food. Often, interviewees indicated that this was something they learned in childhood. Additionally, they linked wasting food to being anti-social, as there are so many people in the world who do not have access to sufficient food.

First of all, because normally I do like the things that I cook, so I like eating it as well. Then I do know that … other people don't have the same privilege as I do to have that much food. So it's also like a social thing that I don't want to throw anything away that I could have eaten. Just because … it was my own fault that I calculated it wrong and I was not able to eat it. Then I would freeze it or would prefer freezing it. I think it's really just the value of food and knowing that other people. Yeah. – c2

No, we don't throw [food] away. From home, I have learned from my mother not to waste. … No, you can always fry it up if you have leftover rice or with some egg, fried egg. We always make something of it. – c5

Interviewees also indicated that, while they try to save and use leftovers, sometimes they still throw them out. Generally, this was connected to the competence element of planning and remembering that the leftovers are still in the fridge.

Well I use them usually for lunch the next day, for example. But I've had moments where I just forgot that it was in my fridge because it was in the back. And then I threw it away and it was like, I could have eaten this. – c7

One interviewee also explained that the reason why they have to throw away leftovers that are no longer safe to eat is that they do not like to eat the same foods multiple days in a row and only freeze their leftovers once a week. However, they immediately offered a solution by suggesting to freeze leftovers on the day itself, so they could be stored longer and more variety in their menu could be achieved:

At the moment we have bami, and what is made before [that] stays in the fridge. Then, if it is Friday again, if it is still good, then it can be put in the freezer. Sometimes I put it in the freezer beforehand, but usually I throw it out afterwards. … So I should do that [freezing it directly], or I should wait [with cooking new meals] until it is finished… But hey, you don't want to [eat] the same thing

three days in a row. – c3

4.2.2.2. Sub-sub-practice: Eating fewer or no animal products

More than half of the interviewees mentioned that they either engage in the sub-sub-practice of eating less animal products, especially meat, or want to engage in this sub-sub-practice. The reason why individuals engage in or want to engage in this sub-sub-practice varies, however, health reasons (meaning) were reported often. Additionally, financial reasons (material), sustainability, and taste (meanings) were also mentioned.

Firstly, health reasons can be general, or because of specific health conditions or food sensitivities:

For a whole year … he [interviewee's son] ate no meat, only fish. … Chicken too, but no other things…. Really on the healthy side. Now he does eat [meat], but he doesn't eat much. ... He is often busy reading and Googling ... And he doesn't want butter either. He never eats that, because my mother always said it makes you fat. So he pays attention to what he eats. – c3

We don't eat shrimp, usually shrimp, and pork. ... You get a bit of an allergic reaction when you eat it. – c5

Secondly, when asked what kind of foods interviewees do not or cannot buy, animal products were often mentioned, in connection to their costs (material element):

Fish, meat, cheese. … Those are actually the things that, yes, are almost unaffordable, so to speak. – c4

When participants reported that they want to or think they should eat fewer animal products, but struggle to do so, this was often because of the importance put on the meaning element of cultural appropriateness of foods. Depending on the (social) environment surrounding the interviewees, this element could be more or less flexible, highlighting the importance of context with regard to practices.

[Do you ever think about sustainability, for example?] Oh yes, I do. … I always say I might want to eat a little less chicken, meat, but yeah. … I don't really need a lot of meat, but yes, I would like to do so [eat less meat], because I think Surinamese people in particular eat a lot of meat. – c3

But I think there can be some improvements in what I eat because. My parents always teach me to eat a lot of meat because that is part of Asian culture. So I was eating meat every day, when I lived with my parents. And then I went to Sweden for my exchange. And there I was a vegetarian. … it was also because it was very expensive there. But I was vegetarian the whole time. And then I went back to the Netherlands. I live with my boyfriend, and he also eats a lot of meat. – c7

One of the participants with a mixed background underlined the connection between cultural appropriateness of foods and the amount of animal products one consumes:

If I think of food, I think my diet is closer to what I have in Switzerland than what I have in Ecuador, because usually my mum cooked at home and she will cook many Swiss things. Sometimes with Ecuadorian influence. … So there's a lot of Ecuadorian dishes that I never tried. … Also because I don't eat meat or not that much. – c1

4.2.2.3. Sub-sub-practice: Using food that is about to go bad

This sub-sub-practice had a strong interconnectedness with obtaining surplus food or food that is about to

4

go bad. Some interviewees did this by choice, as seen in the previous section, while others, especially the food bank recipients, had to use food that is about to go bad by necessity:

Because you have to eat most things right away and if you don't eat it [it goes bad]. Last time I had vegetables, endive, but you had to cook it right away and it was my son's birthday. So then you ha-ve to throw it away again. … But then again, maybe you have to go to work that day [and don't have time to cook or eat it]. – c3

And expiration date too. … It's also a problem… Sometimes you get those things [that go bad] to-day. They won't be [good] in two days. … Especially yogurt… Quark and such. Then the expiration date is too. …too fast. – c6

This was reported especially about fruits and vegetables as provided by the food bank: often, these were bags of pre-cut vegetables that went bad the day of or the day after and were provided in large quantities. This was also observed personally during volunteering by the researcher with the food bank for a day: people would get three to five bags of pre-cut vegetables that needed to be cooked that day. Interviewees shared that this was a regular occurrence.

While interviewees employed multiple sub-sub-practices to deal with this surplus of food that is about to go bad or has gone bad (also see Chapter 4.2.3), this sub-chapter focuses on using this food for their own household consumption. Strategies that fell under this category were freezing the foods to extend shelf-life and/or preparing the foods the day of, partly for direct consumption and partly to refrigerate or freeze after preparation.

You get too much of the same. … Last week I received three bags of green beans. And you can't do everything at once and I don't have a big refrigerator or a big freezer. … So I steamed a few and stored them, but there was still a bag left over. …I gave that to my daughter-in-law. – c6

Certain competences were recognized as part of the sub-sub-practice of using food that is about to go bad. First of all, practitioners need knowledge and skills to be able to recognize when food is about to go bad, and when it is still safe to eat. This also includes knowledge about what the different dates on food mean. Next to this, they also need the knowledge that shelf-life can be extended by freezing or preparing the foods. Finally, the participants need a certain amount of flexibility and creativity regarding recipes or their menus, and planning skills. Occurring materials that were part of this sub-sub-practice are the characte-ristics of the offering of the food bank, available storage space (as seen in the previous quote as well), and time to eat or cook the food on the day itself.

One participant reported extra rigor regarding dates on food, in contrast to what her mother used to do, highlighting that practices can transform over time and between generations. When asked if she consi-dered the food no longer safe to eat, she replied that she did not know, but just followed the date on the product. Here, the competence of being able to judge a food's safety without looking at a label might have been lost between generations.

Because if it expires today, then I won't eat it anymore. … Some people say you can, [me], no. Befo-re I use something, I look at the date. If it expires tomorrow I can eat it, but not the same day. Because you know for sure, you have to get to work. You're not going to eat it before you come [home], so I'll throw it away. …And it doesn't matter whether it's spread or bread. … [And do you think it is no longer safe to eat?] I don't know, I just look at the date… my mother had nothing to do with that … No matter how long it has been expired, my mother will [eat it] as long as it is still clo-sed. … But I, I clean it up, I just throw it away. – c3

4.2.2.4. Sub-sub-practice: Not preparing too much food

Next to the storage and use of leftovers and surplus food, interviewees also employed the sub-sub-practice of not preparing too much food, although it was mentioned less frequently than the storage and use of leftovers and surplus food. Generally, interviewees mentioned that they try not to prepare too much food to ensure they can finish all the food and do not have to throw any food away.

> *If you cook too much, you won't get rid of it. That's a shame. …I don't throw away food, honey. … In Suriname, I have [seen poverty], I know what poverty is. No seriously. I don't throw away food. No way. – c10*

However, within this sub-sub-practice, two meanings were observed that sometimes conflict with each other: culturally driven hospitality, and that you should not waste food:

> *I think I should cook less. Maybe I cook too much. … I think it's too much because most of the time you think, maybe someone will come by. ... But no one comes by so you sit there. … I think if I cook less, then not that much is leftover, you don't have to throw it away either. – c3*

4.2.2.5. Unexpected storing, cooking, and eating sub-sub-practices

While expected from the literature, the sub-sub-practice of using reusable containers to store foods was not mentioned by any of the interviewees. One interviewee did mention that they used small plastic bags to freeze foods, but no other mentions of what food was stored in were made.

A sub-sub-practice that was not expected from literature was the use of parts of food that are generally discarded for human consumption. However, this was only mentioned by one participant, and not widespread in the sample.

> *Sometimes I'm curious about how to use the most of things. Like, I try to find a use for the stem of the broccoli. So I can also cook it and things like that. -c1*

4.2.3. Sub-practice of disposing

Section summary

This section focuses on the sub-practice of **disposing** food and food related waste. It considers any practices regarding the removal of food or food related waste from the household. It discusses the different sub-sub practices that the data showed that low-income individuals engaged in and what materials, meanings, and competences made up these practices. The data showed that low-income individuals engaged in the following sub-sub practices, in order of how often they were engaged in: **food sharing & solidarity initiatives, waste separation of food packaging and food waste, and composting.** Sub-sub practices that were expected from literature (see Chapter 2) but were not observed were the practice of using consumers' food waste for animals meant for human consumption and the reuse/upcycling of food packaging.

While, similarly to the sub-practice of obtaining, many different practice elements were present in the data, the following were most prevalent in the sub-practice of storing, cooking, and eating (also see Appendix E). Meanings: **food should not be wasted, solidarity/community, cultural appropriateness and circularity**, materials: **general availability of recycling/composting options**, and competences: **knowledge about recycling/composting opportunities in the neighborhood**.

4.2.3.1. Sub-sub-practice: Food sharing & solidarity initiatives

By far the most popular sub-sub-practice within the sub-practice of disposing was the sharing of food. Seven out of the ten individuals interviewed engaged in this sub-sub-practice. Additionally, organizational interviews also showed that this sub-sub-practice was widespread among low-income individuals. For example, many food bank recipients share part of their food package with others:

And the great thing is, uhm, when you have such a group of clients. They share a lot with each other. … I had an old customer who always came on Wednesday mornings, had coffee with us and still went home with two full bags. While he didn't come and do the rounds with us anymore, so to speak. So he got something from everyone. Because what they do, they drink coffee with us, have those bags and check those bags carefully again. And then there are things in there. Afterwards. which they think [they] use less and they give that to each other a lot. – o4

Volunteers at both community meals also indicated that they will provide some extra food to those who need it most out of solidarity (meaning), even though this is not always encouraged by the organization:

Sometimes you have crying mothers. That's just sad. They have no money or they are not well off. The question is do you have this? Do you have that? They come whispering in your ear. … You know, it's just sad. And if you want something, I say take it. Or you can have a cup of tea or a cup of coffee. … I'm not going to be mean about it. … And I know what it is like. It's not pleasant when you come and you're hungry. But that's not pleasant. I'm quite easy-going. … But some who work there…. They say no, she has already taken a container. … I think they want to make sure there is something for everyone.– o8

The sub-sub-practice of sharing food was defined by three main meanings. First of all, there was a strong solidarity/community feeling within the interview sample. Secondly, there was the belief that food should not be wasted. Thirdly, there was the cultural appropriateness of the sub-sub-practice of sharing food. For every interviewee, at least two of these meanings were part of the sub-sub-practice:

If we have planted this way, we will distribute it. How much do you want to eat? We share. … I don't sell. – c10

I have, for example, this neighbor and she's from Africa. And when we talk, we talk a lot about [things] like, I made this today. Do you want to have it because I still have some leftovers? So that's a thing as well. So I like sharing it, which is also part of how I grew up. – c7

While the sharing of food did help the recipients save money (material), the interviewees engaging in the sub-sub-practice focused more on the meaning elements of the practice. This was also true for the food bank recipients that were interviewed. Three of the four interviewees that are food bank recipients indicated that they share (food bank) food with others. One additional material practice element was relevant here: the often limited shelf life of food obtained from the food bank, which relates to the meaning element of you should not waste food:

I have a neighbor who I also know doesn't have the largest budget. … And she also has a number of people around her. Single mothers who are very tight on budget. So I usually bring her a bag and I also take it for a colleague who I know is a victim of the benefits scandal, so I know that she also has a very limited budget. … When I get home I'm sorting things out and then a bag goes this way and a bag goes that way. … Both, because I think it's a shame [to waste food] and I like the fact that I can let someone else benefit from it too. – c4

Lots of Brussels sprouts. … I gave one to my neighbor. … Yes, because it is a shame that there are many people who are just on the edge, who cannot, cannot attend the food bank. …They need help. …That's a shame. – c6

Sharing food was also seen as a culturally appropriate sub-sub-practice, as one of the interviewees explained:

I don't like food waste as well. … It's because you always eat with your family. So you eat with, like, the community, it's maybe the whole village or like, your aunts, your nieces. And then when there's something left over, you pack it up usually and give it like a doggy bag. … It's a hospitality thing. I know here in Dutch culture, everyone's like, we have three. … pieces of meat. You cannot eat with us because we didn't calculate [for] it. But my mom always told me … you're going to cook a lot more because maybe someone is going to ring your door. - c7

4.2.3.2. Sub-sub-practice: Waste separation of food packaging and food waste

Interviewees reported that they produce different types of waste with regard to food: waste from the packaging the food came in and food waste like cooking scraps and leftovers. The different identified types of waste were glass, cardboard, plastic, metal cans, GFT, and residual waste, which were all material elements of this sub-sub-practice.

The majority of the interviewees separated at least one of the recyclable packaging waste types like glass and cardboard. The main reported motivators for this sub-sub-practice were the general availability of waste recycling options and the proximity of separate recycling bins close to the interviewees' homes (materials). Plastic or metal packaging was not separated by any of the interviewees, but as the city of Amsterdam collects plastic and cans together with its residual waste, this was not unexpected.

For the glass, we have a separate collection. So we collect it and then bring it downstairs to the glass waste. … That's close to my building. … Actually in front of my building. I would say like 20m away. … There is [a container] for glass, paper and normal waste. However, I don't know where [a container for] organic waste would be if I wanted to collect it separately. … So I just collect glass and paper separately and everything else goes [in residual waste]. And if it's cans, plastic bottles or something that goes back to the supermarket. But apart from that, everything else goes to the normal waste. – c2

There are bins in the front, for glass, for paper, and for clothing. So when I go to the store or when we walk there. … That's where I deposit them. – c5

Cooking scraps and leftovers were generally not separated by the interviewees. The general availability and proximity of separate food waste recycling facilities (material) and the knowledge about the availability of these facilities (competence) were mentioned often as elements of not separating food scraps. Only in a few Southern neighborhoods of Amsterdam Zuidoost, the municipality facilitates the separate collection of GFT, either through public or private bins (Gemeente Amsterdam, 2024a). Additionally, there are four worm composting locations in Amsterdam Zuidoost as a whole, relatively few compared to other city districts (Gemeente Amsterdam, 2024b). Community gardens might offer places to dispose of food waste for locals, but there is no easy-to-find overview available.

Only two interviewees reported separating these scraps. These two interviewees either live in a terraced house, which is provided by the municipality with a separate outside bin for this type of waste, or they had a use for their food scraps:

If you would peel onions you … have waste. … I have two containers outside, one for food scraps with a green lid and the other one is for household waste and such. … No, it will be collected. I don't know where I would take it [otherwise]. – c5

Yes, so from fruit and vegetables, peels, leaves, whatever. I'll just reuse those. … I dry it in the oven and then I pulverize it and that is fertilizer for my plants indoors. … And for example, I also take it with me to work or give it to my neighbor or just anyone who wants some. – c4

4.2.3.3. Sub-sub-practice: Composting

Only one of the individual interviewees engaged in the sub-sub-practice of composting, namely the interviewee who maintained their own allotment garden. However, both food banks and one of the community meal providers reported that their scraps are taken home by some of their volunteers to be composted and used in their gardens as well. The material element of having access to a garden, and the competence element of composting knowledge and skills were part of this sub-sub-practice:

I collect that [food scraps from volunteering] and then I take it home. Then I throw it in the compost bin in my garden. End of the year honey, I might have twenty bags of compost. No seriously. … I first put vegetables, leaves and things like that. … And I put a … thin layer of cow manure on top of that and then I go back to my vegetables and leaves. … and then I put on another layer of cow manure. – c10

While some of the interviewees indicated that they would like to compost their food scraps, others did not. The ones that did indicate to want to compost generally saw some possibility to do so in their environment, for example through using a worm bin that they knew was located closeby (competence, material), and also believed that you should not waste food (meaning), while the ones that did not want to engage in this sub-sub-practice did not see a possibility in their environment, for example due to the perceived lack of space in their apartment:

[Yes, and you mentioned the worm bin, but you're not using it yet. Or do you?] … No, … I suddenly thought, I guess I'm going to do that because I think it is such a shame to throw it [food scraps] away. – c3

About organic waste. To be honest, I probably wouldn't do it because there's not a lot of space in my apartment … and it would always be a bit in the way. – c2

4.2.3.4. Disposing sub-sub practices that were not observed

Two sub-sub-practices that were identified in the literature that were not observed in the interviews were the sub-sub-practice of using consumers' food waste for animals meant for human consumption and the reuse/upcycling of food packaging. Two interviewees did mention that it is common practice to feed pet animals like cats and dogs with human food waste in their home countries. These pet animals are not meant for human consumption, however. Additionally, the interviewees noted that this is not a practice here in the Netherlands, highlighting the importance of context in practices.

In Suriname, you can still give it to your dog, but here the dogs eat dog food. They don't eat bones and such. … So here you … can't do anything with it. – c3

In the Philippines, the scraps that you have, the dogs and cats that you have eat those. – c7

4.3 (In)conspicuously circular food practices

Section summary

This section of the results chapter answers the **third sub-research question**: *'Are these food practices conspicuously or inconspicuously circular?'*. It is examined whether the sub-sub-practices elaborated upon in the previous section are conspicuously or inconspicuously circular. This was determined by whether the meaning circularity was part of the sub-sub-practices engaged in by the low-income individuals. An overview of all these sub-sub-practices and supportive direct quotes are presented in order of sub-practice.

Only a small number of sub-sub-practices engaged in by the low-income individuals were found to be conspicuously circular, with a **predisposition for sub-sub-practices part of the storing, cooking, and eating and especially the disposing sub-practices**. Additionally, whether a sub-sub-practice was conspicuously or inconspicuously circular also differed per low-income individual, with **only individuals with a higher educational (HBO or higher) or Surinamese background** reporting circularity as a meaning.

Table 6: Sub-sub-practices that were engaged in by low-income individuals of which circularity was a meaning element.

	Sub-practice (nr of co-occurences)	Sub-sub-practices
Meaning: Circularity	Obtaining (1)	Minimization of potential packaging waste
	Storing, cooking, eating (3)	Storing, cooking with, & eating leftovers
	Disposing (5)	Food sharing & solidarity initiatives
		Composting

4.3.1. Sub-practice of obtaining

As shown in Table 6, only one sub-sub-practice that was part of the sub-practice of obtaining had a co-occurrence with the meaning of circularity, namely the minimization of potential packaging waste. The following quote shows that this was practiced either through selecting foods with less or renewable/biodegradable packaging or using reusable containers/bags:

> *Circularity in food. I think for me it means mainly that the packages and the organic waste and things are being reused and like integrated in the chain again … But the first thing I think about is reusing the packages or having no packages. –* c1

4.3.2. Sub-practices of storing, cooking, and eating

The meaning of circularity co-occurred three separate times in connection to the sub-practice of storing, cooking, and eating (see Table 6). Each time it was reported it was connected to the sub-sub-practice of storing, cooking with, & eating leftovers:

> *I could imagine that this falls in the circularity category. For myself, if I have leftovers, to reuse them in another meal, maybe not exactly the way I ate them the day before, but maybe I add some things or prepare them a bit differently. -* c2

> *That you can use it [leftovers] again. … I think of a circle like this. [laughs] … So you can use it again.*

… Instead of throwing it away. – c3

Circularity. … I think for me it means buying stuff and ensuring that everything that you buy, you also eat. … So I think … the full circle. like everything you have, you also use. - c7

4.3.3. Sub-practice of disposing

The meaning of circularity co-occurred five times, in four separate individuals, in connection to the sub-practice of storing, cooking, and eating (see Table 6). It was reported either as part of the sub-sub-practice food sharing & solidarity initiatives:

I could also imagine that, um, food circularity could be to bring my food or to share my food with other people if I know I can't eat it, to bring it somewhere else so someone else can use it and eat it. – c2

And if you don't, can't use it yourself, you share it with, with others. So it gets like another purpose or so other people can eat it or use it. – c7

Or as part of the sub-sub-practice of composting:

So it's composting and growing again and using food again and composting and the whole, the whole cycle. I think that it is something that is better for the future of the planet, but many of us are not there yet. – c4

[Interviewee makes a circle movement in the air] Difficult words … but I also do that in my garden. - c10

4.3.4. Educational and cultural background of the low-income individuals engaging in conspicu-ously circular food practices

A notable pattern emerged from the data concerning the educational and cultural background of the low-income individuals engaging in conspicuously circular food practices. Firstly, all low-income individuals with a higher educational background (HBO or higher) engaged in at least one conspicuously circular food prac-tice. Additionally, the low-income individuals without a higher educational background that engaged in at least one conspicuously circular food practice had a Surinamese cultural background.

In summary, the only conspicuously circular food practices found in this research were, from lower to hig-her occurrence: minimization of potential packaging waste (sub-practice: obtaining), saving, cooking with, and eating leftovers (sub-practice: storing, cooking & eating), sharing food with others and composting (sub-practice: disposing). The closer the sub-practice was to the 'end-of-life' of food products, the more often circularity was a meaning element according to the data. However, the food practices were only con-spicuously circular for a small section of the interviewee sample, namely higher-educated individuals and individuals with a Surinamese background. The other food practices or these food practices engaged in by the other interviewees, while they might contribute to the circularity of the food system in the urban con-text, did so inconspicuously.

4.4 Suggestions for increasing adoption of circular food practices

Section summary

This final section of the results chapter provides results for the **fourth sub-research question**: '*How can the adoption of circular food practices be encouraged among low-income individuals in Amsterdam Zuidoost according to individuals belonging to this demographic?*'. While the research question focuses on the insights obtained from the individual interviews, the organizational interviews also resulted in valuable insights into increasing adoption of circular food practices by low-income individuals in Amsterdam Zuidoost. While these insights are out of scope to answering the research question, they are included in Appendix F for those who are interested.

Every low-income individual (besides one) reported to be interested in increasing their engagement in **at least one of the following circular food sub-sub-practices**: obtaining organic food, obtaining local/seasonal food, growing your own food, storing, cooking with, and eating leftovers, eating fewer or no animal products, food waste separate collection, and composting. The individual interviewees' suggestions for what could increase the adoption of these sub-sub-practices among low-income individuals **focused mainly on changes in material elements, and lesser so in competences**.

Overall, the data showed that generally, low-income individuals were pretty happy with their current food practices. However, almost every interviewee mentioned a lowering of food prices or eating healthier as a general change they would like to see or implement. With regard to circular food practices, the data also showed that all low-income individuals would like to engage more into a selection of sub-sub-practices (except for the individual in assisted living). The interviewees also shared what could make it easier for them to adopt these practices. Table 7 (see next page) presents both results. When taking into account what practice elements these suggestions connect to, the data demonstrated that the low-income individuals focused on materials (12 times) and competences (6 times) in their suggestions on how adoption of circular food practices could be encouraged among their demographic. None of the suggestions focused on meanings.

The suggestions for changes in material elements focussed on increasing access to engaging in circular food practices like obtaining local food, growing your own food, separating food waste, and composting. Multiple ways of doing so were present in the data: lowering of prices or increasing individuals' budgets, more availability of food options in the neighborhood, increasing available mental space, access to spaces to grow your own food, and better general availability and proximity of recycling and composting options (In this section, only a few supporting quotes are provided, as the majority of quotes detailing suggestions for change have already presented earlier on in this chapter):

> *I wouldn't mind biking, but then I think it would be easier if it's … on my usual way. So, for example, if I have to go to the city or if I go to uni. If it were that way, then I wouldn't mind biking for ten minutes. But if it would be ten minutes in the other direction and then I have to go all the way back. Probably not. – c2*

> *Here at the supermarket, one block away is the glass bin and the paper container, so why is there no compost bin next to it? - c4*

> *If there was an organization closer to my house that was doing things with compost, then I would really go there. – c7*

Table 7: Sub-sub-practices that individual interviewees indicated they would like to adopt and their suggestions on what would make it easier for them to do so.

Sub-sub practice	Suggestion to increase adoption	Interviewee
Obtaining		
Obtaining organic food	Lower price/having a larger budget (material)	C1, C5, C6, C7
	Higher availability of organic food options (material)	C1
	More information on organic food options (competence)	C1
Obtaining local/ seasonal food	Lower price/having a larger budget (material)	C1, C2, C4, C7
	Higher availability of local/seasonal food options (material)	C1
	More information on local/seasonal food options (competence)	C1
	More mental space (material)	C4
Growing your own food	Access to space to grow food (material)	C1, C2, C3
	More information on how to join an allotment garden (competence)	C3
	Lower price of allotment garden (material)	C3
	More mental space (material)	C4
Storing, cooking, eating		
Storing, cooking with, and eating leftovers	Smarter use of freezer (competence)	C3
Eating fewer or no animal products	Finding a way to cook culturally appropriate food with fewer animal products (competence)	C3, C7
Disposing		
Food waste separate collection	General availability of recycling/composting options (material)	C1, C2, C8
Composting	General availability of recycling/composting options (material)	C2
	Knowledge about recycling/composting options (competence)	C4
	More mental space (material) Proximity of recycling/composting options (material)	C7

The suggestions for changes in competence elements focussed on increasing knowledge on the one hand (in the sub-practice of obtaining and disposing) and skills on the other (in the practices of storing, cooking, and eating) to support the adoption of circular food practices. Knowledge-related suggestions were increasing the available information on different food, recycling, and composting options. Skill-related suggestions were improving freezer use and finding a way to cook culturally appropriate food with fewer animal products:

> *If it will be already in the supermarket a section there. Just like these things come from like ten kilometers around this supermarket or something. I would really like it. And then also … information and price is also important.* – c1

In summary, the data showed an interest in the adoption of the sub-sub practices of obtaining organic food, obtaining local/seasonal food, growing your own food, storing, cooking with, and eating leftovers, eating fewer or no animal products, food waste separate collection, and composting. Each individual interview participant indicated to want to increase engagement in at least one of these food practices, except for the interview participant living in assisted living. According to the low-income individuals themselves, adoption of circular food practices could be encouraged mainly through changes in material elements, and lesser so through changes in competences. Changes in meanings were not mentioned at all.

DISCUSSION

DISCUSSION

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Chapter preview

This chapter consists of the following sections. First, the **research results as presented in the previous chapter are discussed and made sense of.** This is done in order of the sub-research questions. Where possible, connections are made with existing academic literature and/or the specific context of the study to support the examination and understanding of the findings.

Then, the **theoretical and practical implications** of the study are elaborated upon. It is shown that both the research findings align with previous research and that the research adds to it through its specific focus on circular food practices of low-income individuals in Amsterdam Zuidoost.

This is followed by the discussion of the **research limitations**, divided into limitations of the theoretical framework and methodological limitations.

Finally, building upon the research findings and limitations, **recommendations for further research** are provided.

5.1 Discussion of the results

5.1.1. Discussion of the findings on engaged in food practices

This section provides a discussion of the results answering the first sub-research question: '*What food practices do low-income individuals in Amsterdam Zuidoost engage in?'.* The data showed that low-income individuals in Amsterdam Zuidoost engage in a wide range of circular food practices. This builds upon the work done by Massimiliano & Luigi (2022) and Rohenkohl do Canto et al. (2021), who have provided overviews of circular food practices based on both deductive and inductive approaches. This research provides the new insight that the majority of food practices found in these studies are also engaged in by low-income individuals in Amsterdam Zuidoost.

However, there were a number of circular food practices which were identified by Massimiliano & Luigi (2022) and Rohenkohl do Canto et al. (2021) that did not occur in the data collected for this research. These were obtaining food from packaging-free shops, participating in community-supported agriculture schemes, dumpster-diving, reusing or upcycling food packaging, storing food in reusable containers, and consumers' food waste serving as food for animals meant for human consumption. For some of these practices, rational explanations for the lack of observation can be given: for example, the lack of a packaging-free shop in Amsterdam Zuidoost itself could serve as a limiting factor to the obtaining of food from packaging-free shops. Additionally, the data showed that interviewees struggled to engage in the practice of obtaining food directly from a farmer because of limited knowledge on availability, limited available mental space to dedicate to doing so, limited transportation options, and very importantly, financial limitations. It is arguable that at least a few of these limitations also play a role in not participating in community-supported agriculture schemes. Moreover, to the best knowledge of the researcher, there are also no opportunities to use food waste to feed animals meant for human consumption in Amsterdam Zuidoost. For the other three not observed practices, only an educated guess can be provided on why they did not occur in the data. With regard to dumpster-diving, it could be that this practice does not align well with the mea-

nings of healthiness, taste, and quality of food that the data showed were important to the low-income individuals in Zuidoost. Considering the practices of reusing or upcycling food packaging and storing food in reusable containers, the researcher actually suspects that these practices might be engaged in, but that the lower focus on storage practices in the interview guide did not support the emergence of this information.

Interestingly, the data also showed multiple circular food practices of the low-income individuals that were not identified by Massimiliano & Luigi (2022) and Rohenkohl do Canto et al. (2021). These were only accepting foods that you can use, getting leftover food from friends/family/acquaintances, getting food from school gardens, winning food at the bingo, hunting/fishing, and using parts of food that are generally discarded. It can be argued that the participation in these practices is specific to the context of the researched group. Firstly, the practice of only accepting foods that you can use was unique to the research participants who depended on the food bank, which might explain why it was not identified before in research (individual context). Getting food from the school gardens and winning food at the bingo can be argued to be part of the context of Amsterdam Zuidoost, where food can be obtained at both of these places (physical context). Additionally, getting leftover food from friends/family/acquaintances related strongly to the cultural-appropriateness of sharing foods which was identified as an important meaning in the researched population (cultural context). Hunting/fishing and using parts of food that are generally discarded were individual-specific: the former occurred partly because of the individual's connection to a game warden, and the latter partly because of the individual's interest in and creativity/flexibility when cooking.

Finally, a pattern can be observed when considering which circular food practices were most often engaged in by low-income individuals in Amsterdam Zuidoost. The most engaged in practices all focused on the prevention of food and/or packaging wastage (refusing/reducing) and reusing food for human consumption. When connecting this to the Butterfly Diagram of the Ellen MacArthur Foundation (2013) which was presented in Chapter 1, it can be argued that these practices fall under the cascading loops, keeping products and materials in the economy. Generally, it is considered desirable to keep products and materials in cascading loops for as long as possible from a circularity perspective. Additionally, using the most of resources is also financially prudent for the low-income individuals who were part of this research. Additionally, it is argued that this is also where consumers have the most agency and can thus most directly contribute to circularity through their food practices.

5.1.2. Discussion of the findings on practice elements

This section provides a discussion of the results answering the second sub-research question: '*What practice elements (meanings, materials, and/or competences) do these practices consist o*f?'. The data showed that not all three types of practice elements were discussed equally by the interviewees: meaning elements were discussed most often, then material elements, and finally competences. The most important meanings that emerged from the data were health, cultural appropriateness, solidarity/community, and the belief that food should not be wasted. However, the most occurring individual practice element was a material one, namely finances.

Due to the low-income nature of the population under study, that finances was the most occurring individual practice element can not be considered surprising. Being financially pressed was after all the main identifying indicator that the research participants were selected upon. However, what can be said about the influence of low-income status on participation in circular food practices? The data showed a varied picture: having limited finances can both enable and limit the participation in circular food practices, depending on the practice. On the one hand, having limited available finances encourages thrift, which increases the participation in circular food practices such as participating in alternative food networks, growing your own food when having access to a garden, storing, cooking with, and eating leftovers, and using food that is about to go bad to avoid having to throw it away. On the other hand, finances also act as a barrier to participation in other circular food practices such as buying organic or local food and actually acces-

sing a garden to grow your own food.

Generally, that meaning elements occurred most often as a category can be explained through the fact that food carries a lot of meaning in people's lives, often in connection to social and cultural habits and meanings (Brons et al., 2020a). More specifically, the data showed that the meanings that occurred most carried a connection to three characteristics prevalent among low-income individuals in Amsterdam Zuidoost. The first being the most direct, namely the low-income status. The other two, lower general health and more individuals with an immigrant background were shown to often occur together with low-income status (Chapter 1) and to also be prevalent in Amsterdam Zuidoost (Chapter 3). This was also reflected in the research sample of this study.

These connections were observed in the data for each most occurring meaning in the following ways: firstly, that health is an important meaning for the research population could be explained through the lower amount of healthy people living in Amsterdam Zuidoost and the connection that exists between low-income status and health problems (Van den Brakel & Knoops, 2009; RIVM, n.d.). Within the interviewed individuals, multiple indicated to be struggling with their health and that this is why they would like to eat healthier. Secondly, the meaning of cultural appropriateness was shown to be strongly connected to immigrant status in the data. The different cultural backgrounds of the research participants influenced many of their food habits, with a strong focus on cultural appropriateness of food. Thirdly, the importance of solidarity/community can be argued to be connected to both low-income status and immigrant background (through cultural appropriateness, highlighting that practice elements can be intertwined as well). The interviews showed that solidarity and community occurred as a meaning in for example the practice of sharing of food, which was part of a support system among low-income individuals. Additionally, the sharing of food (and taking care of each other) was also seen as a culturally appropriate practice. Finally, the data showed that the meaning that food should not be wasted connected to the low-income characteristic of the research population through thrift, and also was intertwined with the meanings of cultural appropriateness and solidarity/community, indirectly also connecting it to immigrant backgrounds.

Lastly, in the introduction of this study, it was argued that low-income individuals might possess certain skills, knowledge, and networks (competences) that could enable their engagement in circular food practices. However, competences were the least mentioned by the interviewees. Still, one competence stood out, namely creative and flexible cooking skills. This can be argued to be the case because of the focus on low-income individuals as well. For example, when you depend on the food bank, you cannot plan or choose your meals and ingredients as freely, necessitating a certain creativity and flexibility when cooking. Additionally, using the most of the food that you obtain can be extra important when you are working with a limited food budget, which is also supported by this competence.

5.1.3. Discussion of the findings on (in)conspicuous circularity of food practices

This section provides a discussion of the results answering the second sub-research question: '*Are these food practices conspicuously or inconspicuously circular?*'. The data showed that the majority of the food practices engaged in were inconspicuously circular. This was not an unexpected outcome. Although forms of circularity might be centuries old (De Bernardi et al., 2023), the specific concept under the name circularity is less well-known. While circularity of the food system recently started gaining interest in academia and policy (e.g. De Bernardi et al., 2023; Doughnut Economics Action Lab, 2020; Esposito et al., 2020; European Union, 2020; IenW & EZ, 2016; Mehmood et al., 2021; UNEP & UN-Habitat, 2021), it can not be expected that the average citizen knows the concept. However, this does not mean that inconspicuously circular food practices do not contribute to the circularity of the food system.

The minority of food practices engaged in that were conspicuously connected to the meaning of circularity concerned mainly disposing sub-practices. It can be argued that this is the most 'intuitive' point in the life

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cycle of food for consumers to connect one's practices explicitly to the meaning of circularity. After all, this is where you physically dispose of something and where you might experience the opportunity to keep this object or material in 'the cycle'. With food practices concerning obtaining or storing, cooking, and eating, this connection to the food cycle and circular principles might be less intuitive and more knowledge and skills might be needed to make the connection.

Additionally, the results showed that circular food practices were only conspicuously engaged in by individuals with a higher educational or Surinamese background. Concerning the higher educational background, more awareness and knowledge about the impacts of the food system and how one's food practices have an influence on these impacts (competences) was found in this sub-group. This might have been fortified by that part of the higher educated individuals were recruited via the researcher's own social circle, which consists of many individuals with an educational background related to sustainability.

With regard to the Surinamese background, an explanation might be found in the type of practices connected to the meaning of circularity by this sub-group, namely storing, cooking with, and using leftovers, and composting. That these practices were the ones connected to circularity by this group highlights the importance of lived experiences and generational perspectives in food practices. With regard to using leftovers, it was mentioned multiple times that this was engaged in because of having experienced or knowing people who experience true poverty in Suriname and/or because the individuals' learned to do so during their youth. With regard to composting, the data showed that there tends to be a strong connection to agriculture among Surinamese immigrants, with many of them used to growing fresh food at home. Both these experiences still influenced individuals' engagement in these circular food practices, even though the context changed. Kohinor et al. (2011), provide a possible explanation of this persistence: they found that Surinamese cooking and eating practices were regarded as extremely important among Surinamese immigrants in the Netherlands, as these were perceived to be a core element of their identity as Surinamese.

5.1.4. Discussion of the findings on how the adoption of circular food practices among low-income individuals in Amsterdam Zuidoost can be encouraged

This section provides a discussion of the results answering the second sub-research question: '*How can the adoption of circular food practices be encouraged among low-income individuals in Amsterdam Zuidoost according to individuals belonging to this demographic?*'. The data showed that every interviewed individual (bar one) was interested in adopting at least one of a selection of circular food practices. The low-income individuals' suggestions for what could increase the adoption of these sub-sub-practices among low-income individuals focused mainly on changing material elements, and lesser so competences.

This focus on intervening in material and competence elements is interesting, as meanings were shown earlier to be the most important practice elements for this group. The reason for this is considered three-fold: firstly, many of the suggestions for changes considered financial factors, which is in line with the low-income status of the research population. This increased the number of suggestions regarding material elements. Secondly, changes in material elements might be the most tangible, followed by changes in competences. It can be imagined that it is easier to envision how increased access to composting opportunities would increase your adoption of circular food practices compared to a change in your beliefs around food. Thirdly, the importance given to meanings might actually contribute to the research population not being interested in changing them.

5.2 Implications of the research

5.2.1. Implications for theory

The results of this research adds to previous research by contributing to filling the knowledge gap on circular food practices of urban-low income groups by exploring the (in)conspicuously circular food practices that low-income individuals in Amsterdam Zuidoost engage in and how adoption of these practices can be increased. In doing so, it contributes to theory in the following ways: firstly, by focusing on the specific group of low-income individuals, and on the specific context of Amsterdam Zuidoost, it answers to both Bernandi et al.'s (2023) call for the development of more in-depth, specific context-based knowledge concerning circularity and food and and Jaeger-Erben et al.'s (2021) call for development of knowledge on the perceptions, beliefs, and needs with regard to circularity of multiple groups in society.

Furthermore, this research aligns with and adds to Massimiliano & Luigi (2022) and Rohenkohl do Canto et al.'s (2021) studies by showing that the majority of the food practices identified in their work also are adopted by low-income individuals in Amsterdam Zuidoost. Moreover, it adds a few new, context-specific circular food practices to the list. Additionally, this research also aligns and builds further upon Brons et al.'s (2020b) research on (in)conspicuous sustainability of food practices by showing that this theory also works for the concept of circularity.

5.2.2. Implications for practice

The insights generated in this research can contribute to more inclusion of low-income urban inhabitants in the transition to a circular food system in practice in the following ways: it provides deeper understanding of the practice elements that make up circular food practices in this group. These specific meanings, materials, and competences increase understanding of what is important for this group with regard to food, increasing potential for inclusion in a circular food system. The research also shows that inconspicuously circular food practices are more prevalent than conspicuous ones. However, combined with the insight that it is not necessary for circularity to be a meaning within a food practice for it to be contributing to circularity, that other meanings can also be part of ultimately circular food practices, this provides valuable insights for practitioners.

Combined, these identified insights on meanings provide helpful guidance for policymakers or other practitioners. Although low-income-specific skills and knowledge (competences) supporting circularity did not emerge strongly from the data, the importance of multiple meanings to this group does provide insight that can be built upon in practice. For example, by ensuring that policies and/or interventions to increase the circularity of the food system incorporate these meanings, practitioners might be able to increase the engagement of this group. For instance, by focusing on existing meanings that make up circular food practices for low-income individuals in projects and communication in Amsterdam Zuidoost, the municipality of Amsterdam can avoid 'top-down preaching of' circularity. Thus increasing the inclusion of low-income individuals, and consequently, also increasing the success of policy and/or interventions aiming for the transition to a circular food system. Finally, the suggestions made by the low-income individuals themselves provide additional pointers for practitioners: they highlight that it is mainly financial barriers that block engagement in certain circular food practices for this urban group, which links to questions of equality and inclusion. Hence, when focusing on material or competence interventions, it is important for practitioners to not lose sight of this reality and its consequences for this group.

5.3 Research limitations

5.3.1. Limitations of the theoretical framework

The choice of a social practice theory approach for the theoretical framework for this study came with both strengths and limitations. While the theoretical framework was very suitable for developing a more in-depth understanding of the food practices that low-income individuals in Amsterdam Zuidoost engage in, both because of social practice theory's rich descriptive nature and the application of Shove et al.'s (2012) specific approach, the theoretical framework also had its challenges.

Firstly, it is known that social practice research can be difficult to translate into real-world policy applications (Jonas & Littig, 2015). This research anticipated this theoretical limitation by including suggestions of the low-income individuals on how to encourage adoption of circular food practices into the research questions. While this was successful and provided valuable insights, the analysis of those insights might have been more eloquently executed if the theoretical framework had explicitly included contextual factors (e.g. such as done by Brons et al., 2020b). However, the focus of the chosen theoretical framework, on the three elements that make up practices, proved very useful in answering the first three research questions.

Secondly, the theoretical framework did not critically evaluate the circular food practices identified by Massimiliano & Luigi (2022) and Rohenkohl do Canto et al. (2021). There can be debate about the contribution to circularity of the food system of some of those. For example, while obtaining organic foods or growing your own food can contribute to circularity, they do not inherently do so. However, the evaluation of the circularity of the food practices determined circular by Massimiliano & Luigi (2022) and Rohenkohl do Canto et al. (2021) was considered outside the scope of this research.

Finally, to determine whether a food practice was conspicuously or inconspicuously circular, the theoretical framework only took meaning elements into account. However, it can be argued that, besides meanings, competences also play a role in whether a practice is conspicuously circular: certain knowledge or skills might be essential to actually apply the meaning of circularity to a food practice. An example of such a competence could be the knowledge on how your food practices influence the circularity of the food system.

5.3.2. Methodological limitations

Each research methodology has its limitations. In this section, the methodological limitations of this research and some of the proactive steps taken to minimize them are discussed. Firstly, the research methodology only considered what people say by interviewing them about their practices, based on Hitchings' (2012) findings that people can talk about their practices. However, as argued by Schatzki (2002) there might be a difference between what people say they do (sayings), and what they actually do (doings). Also, the methodological choice for this mono-method approach, based on semi-structured interviews, might have slightly favored the occurrence of meanings in the data: if the methodological design had been extended with for example observations, more competences and materials might have emerged during the research process.

Next to this, the choice for mono-method research setup of semi-structured interviews limited the amount of triangulation possible. However, this was partly remedied by interviewing both individuals and organizations, to obtain multiple viewpoints. Originally, it was conceived to also organize a focus group to validate the results (and co-create potential interventions), but time constraints and research fatigue within the sample population made this unfeasible. On a related note, to reduce the risk of researcher bias in the conclusions drawn from the results, they were discussed with a member of the CIFS research team and shared with the supervisors of this thesis.

Finally, the order of topics in the interview guide could be discussed. To ensure that the interviewees were as comfortable as possible with the interview experience, they were first asked about their food practices, which were easier to talk about, and only asked about what circularity meant to them at the end, to avoid stumping them on the first question. While this did work well for the flow and atmosphere during the interviews, there is the chance that this order of questions influenced the interviewees' answers by allowing them to connect the practices they just described to circularity more easily. However, as a significant part of the interviewees did indicate that they did not know the concept of circularity at all, it was concluded that the influence of the order of the questions was minor, if present at all, and that the prioritization of the flow of the interview was justified.

5.4 Recommendations for further research

Due to the explorative nature of this research, there are many possible directions for future research. In this section, a couple, inspired by the discussion of the research results and the research limitations, are elaborated upon.

First of all, further research should be conducted on a) how specific practice elements intertwine with each other and b) how they are connected to practitioner characteristics in the context of circular food practices among low-income individuals. This research has provided first exploratory insights into some of these interconnections (see 5.1.2. and 5.1.3.), but more in-depth studies focused on specific interconnections should be executed to increase our understanding of the exact nature of and mechanisms behind these interconnections. One particularly interesting topic for further research in this regard is how Surinamese backgrounds and the conspicuous adoption of circular food practices interconnect. What cultural, social, and economic factors play a role here? Is there a difference in adoption and performance of circular food practices between generations, and circular food practices change if immigration to the Netherlands took place? Moreover, do other cultural backgrounds also influence the adoption of (in)conspicuous circular food practices?

Additionally, as argued in section 5.3.1., competences might play a role in understanding how the concept of circularity connects to one's food practices. Further research could provide insights into whether this actually is the case, and if so, which competences support making this conspicuous connection between the concept and practice of circularity with regard to food practices. In turn, these insights might provide valuable pointers for practitioners to what competences to develop to increase adoption of conscious adoption of circular food practices.

Next, future research should also focus on how to operationalize the findings of this research to increase the inclusion of low-income individuals in Amsterdam Zuidoost in the transition to a circular food system. For example, what kind of actionable interventions can be designed to increase this inclusion, based on the insight that meanings such as health, cultural-appropriateness, solidarity/community, and the belief that food should not be wasted are very important to this group? It is strongly suggested to research this in a participatory fashion, to stay true to the idea that people are experts on their own lived experiences. Additionally, the effectiveness of the suggestions done by the low-income individuals to increase their engagement in circular food practices should be studied. An action research approach would be well-suited for such a study.

Finally, more research into the circular food practices of other low-income groups at other locations, with other life experiences, or other contextual differences would be desirable. Do the findings of this study transfer to other contexts? Do other low-income populations also engage in the same circular food practi-

ces consisting of the same practice elements? Or do these differ among low-income populations? Do they differ from the general population? And, as it has been argued that all societal groups need to be included to reach a truly circular food system, what (in)conspicuous circular food practices do other groups that have been excluded from the circular food discourse engage in? What practice elements are important to them? And what suggestions do they have to increase their adoption of circular food practices?

5

CONCLUSION

CONCLUSION

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This study aimed to answer the research question: '*What (in)conspicuously circular food practices do low-income individuals in Amsterdam Zuidoost engage in and how can further adoption of circular food practices be encouraged among them?'.* It did so by interviewing both low-income individuals and organizations with a link to food, circularity, and inclusivity located in Amsterdam Zuidoost.

The results indicate that low-income individuals in Amsterdam Zuidoost engage in many different food practices that contribute to the circularity of the food system. Especially in food practices that focus on the prevention of food waste and the reuse of food for human consumption: the latter either through the reuse of leftovers, or through sharing with others.

By applying a social practice theory lens, meanings, materials, and competences (practice elements) that made up the engaged in circular food practices were identified. The following elements played the largest role: finances (material), and health, cultural appropriateness, solidarity/community, and the belief that food should not be wasted. Additionally, it was found that the majority of the food practices that are engaged in by low-income individuals in Amsterdam Zuidoost were inconspicuously circular. Circularity was only found to be a conspicuous meaning in food practices engaged in by higher educated individuals and those with a Surinamese cultural background.

This research provides the following insights regarding how adoption of circular food practices can be increased among low-income individuals in Amsterdam Zuidoost. Firstly, the found importance of meanings led to the recommendation to practitioners to build upon this insight by ensuring that policies and/or interventions aiming to increase the engagement of low-income individuals in circular food practices incorporate these meanings. At the same time, finances emerged as the most important individual element. Hence, practitioners do well to not forget this reality and its consequences when trying to increase the engagement of low-income individuals in circular food practices. Secondly, the suggestions made by the low-income individuals themselves on how to increase engagement provide additional pointers for practitioners. These suggestions focussed on increasing access to materials and further developing competences that are part of circular food practices.

Ultimately, this research provides an explorative insight into the circular food practices of low-income individuals in the urban context, a topic that has so far been underrepresented in academic research and policy. Due to the explorative nature of this research, recommendations for further research focus on adding to the understanding of circular food practices among low-income individuals; both by expanding into other low-income groups and by further researching how characteristics like educational or cultural background influence food practice elements. Future research should also focus on the operationalization and effectiveness of the recommendations to practitioners that emerged from the results of this study.

To conclude, including all societal groups is essential for a successful transition to circularity, also within the food system. Hence, by adding to the knowledge base around circular food practices of low-income individuals, this research contributes to an inclusive and successful transition to a circular food system in the urban context. After all, we all need to eat.

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APPENDIX

Appendix A: Interview guides

A.1. Interview guide for organizations (Dutch)

Start: Bedank voor meedoen, vraag of er nog vragen zijn voordat we beginnen?
Laten we beginnen met wat basics:

Sectie 1A: Kenmerken rol
- Naam?
- Je rol binnen de organisatie: wat doe je allemaal?
- Voor hoe lang doe je dit al?
- En waarom doe je het? Is het betaald of vrijwillig?
- Heb je veel contact met de klanten?

Sectie 1B: Kenmerken organisatie
Vraag om te antwoorden voor specifieke locatie, wanneer relevant.
- Doel van de organisatie? Merk je dit ook in dagelijks werk? Hoe?
- Wat voor activiteiten?
- Hoe lang is deze locatie al hier actief?
- Hoe komen jullie rond? (donaties, subsidies?)
- Wat voor klanten komen hier?

Sectie 2: Practices organisatie
- Waar komt jullie voedsel vandaan? (donaties? inkoop?)
- Duurzaamheid/circulariteit van dingen die binnenkomen: lokaal? Biologisch? Minder verpakking? Reststromen?
- Wordt hier op gelet? Heb je mogelijkheden om zulke dingen te krijgen? Waarom wel/niet? Wat zou er anders kunnen in jouw opinie om hier vooruitgang in te boeken?
- Produceren jullie afval? Zo ja, wat? Hoeveel? Wat wordt hier mee gedaan/wordt dit gescheiden?
- Zie je mogelijkheden om de hoeveelheid afval te beperken/meer circulair te verwerken? Zo ja, hoe?

Sectie 3: Practices klanten
- In jouw ervaring, vinden klanten het belangrijk om te weten waar hun voedsel vandaan komt? Bijvoorbeeld: lokaal, biologisch, gezond? < zijn ze blij met zulke producten?
- Waarom wel/niet?
- En vinden ze het belangrijk om afval te verminderen/te recyclen?
- Waarom wel/niet?
- Wat zijn barrières voor klanten om meer van dit soort voedsel te verkrijgen? (voorbeelden hieronder kunnen helpen als geïnterviewde moeite heeft met voorstellen wat barrières kunnen zijn).
	- Fysiek: oa prijs, geen winkels dichtbij, geen buurttuin in de buurt
	- Sociaal: geen interesse, lage prioriteit, geen kennis over voordelen/belang ervan
- Wat zijn barrières voor afval verminderen/recyclen?
- Fysiek: geen opties in de buurt, in huis geen plek
- Sociaal: geen interesse, prio, kennis

Sectie 4: Betekenis circulariteit en inclusiviteit
Voordat we afronden zou ik je willen vragen om te beschrijven wat de volgende concepten betekenen in relatie tot voedsel:
- Circulariteit: voor jou, voor de organisatie, voor de klanten?
- Inclusiviteit: voor jou, voor de organisatie, voor de klanten?

Sectie 5: Afronden

Alvast heel erg bedankt voor je tijd en de informatie die je met me hebt gedeeld vandaag. Ik heb nog twee meer praktische vragen:
- Is er nog iets waarvan je denkt dat het belangrijk/relevant is om te delen/wil je nog iets toevoegen? (irl tot de dingen waar we het vandaag over hebben gehad)
- Ik zou heel graag met een aantal klanten van de organisatie in contact willen komen om ook meer te leren over hoe zij naar dit soort onderwerpen kijken. Zou je me misschien willen helpen om met een aantal klanten in contact te komen/kan ik misschien ergens een oproepje plaatsen/poster ophangen?
(Optioneel: de klanten kunnen we evt een kleine vergoeding bieden – tegoedbon/iets lekkers, wat zou de voorkeur hebben denk je?)

Nogmaals heel erg bedankt!!

A.2. Interview guide for organizations (English)

Start: Thank for joining, ask if there are any questions before we start?
 Let's start with some basics:

Section 1A: Role characteristics
- Name?
- Your role within the organization: what do you do?
- How long have you been doing this?
- And why are you doing it? Is it paid or voluntary?
- Do you have a lot of contact with customers?

Section 1B: Organizational Characteristics
Ask to answer for the specific location, if relevant.
- Purpose of the organization? Do you also notice this in your daily work? How?
- What kind of activities?
- How long has this location been active here?
- How do you make ends meet? (donations, subsidies?)
- What kind of customers come here?

Section 2: Organizational Practices
- Where does your food come from? (donations? purchasing?)
- Sustainability/circularity of things that come in: local? Biological? Less packaging? Residual flows?
- Is this being taken into account? Do you have options to get such things? Why/why not? What could be done differently in your opinion to make progress on this?
- Do you produce waste? If so, what? How much? What is done with this/is this separated?
- Do you see opportunities to limit the amount of waste/process it more circularly? If so, how?

Section 3: Client practices
- In your experience, do customers find it important to know where their food comes from? For example: local, organic, healthy? < are they happy with such products?
- Why/why not?
- And do they think it is important to reduce/recycle waste?
- Why/why not?
- What are barriers for customers to obtain more of this type of food? (examples below may help if the interviewee has difficulty imagining what barriers might be).
        - Physical: including price, no shops nearby, no community garden nearby
        - Social: no interest, low priority, no knowledge of its benefits/importance
 - What are barriers to waste reduction/recycling?

          - Physical: no options nearby, no place in the house
          - Social: no interest, priority, knowledge

Section 4: Meaning circularity & inclusivity

Before we wrap up, I would like you to describe what the following concepts mean in relation to food:
- Circularity: for you, for the organization, for the customers?
- Inclusivity: for you, for the organization, for the customers?

Section 5: Rounding off

Thank you very much in advance for your time and the information you shared with me today. I have two more practical questions:
- Is there anything else you think is important/relevant to share/would you like to add? (irl to the things we talked about today)
- I would really like to get in touch with some of the organization's customers to also learn more about how they view these types of topics. Would you like to help me get in touch with some customers/can I perhaps place a call/hang up a poster somewhere?
(Optional: we can possibly offer customers a small compensation – voucher/something tasty, what do you think would be preferable?)

Again thank you very much!!

A.3. Interview guide for individuals (Dutch)

Start
- Bedank voor het mee willen doen
- Mezelf kort voorstellen
- Korte uitleg onderzoek (extra aandacht voor dat alle antwoorden goed zijn, er zijn geen goede of foute antwoorden, de geïnterviewde is de expert.)
- Consent formulier (uitleg anonimiteit)

<u>Demografische kenmerken</u>
Algemeen
- Leeftijd (een range is ook oké, als ze niet precies willen delen)
- Hoogste niveau van onderwijs?
- Nationaliteit? Culturele achtergrond?
- Werk je/heb je een uitkering? Andere activiteiten, bv vrijwilligerswerk?
- Hoeveel is je inkomen op dit moment?
- Hoeveel is je budget voor voedsel/eten? Welk % van je inkomen is dit? Maand/week?

Woonomstandigheden
- Wijk in ZO:
- Amstel III/Bullewijk, Venserpolder, Amsterdamse Poort e.o., H-Buurt, Holendrecht, Reigersbos, Gein, Nellestein, Geerdinkhof/Kantershof, Ganzenhoef e.o., Bijlmermuseum, K-Buurt
       - https://maps.amsterdam.nl/gebiedsindeling/
- Hoe lang woon je al in ZO?
- Hoeveel mensen in huishouden? Hoeveel kinderen, hoeveel volwassenen?
- Zijn er mensen buiten het huishouden die ook geregeld mee-eten?

<u>Voedsel practices</u>
Algemeen
- Wat heb je gisteravond gegeten?

- Waar en met wie?
- Is dat een normale maaltijd voor jou? Waarom wel/niet? Thuis, afhaal/bestellen, voorbereide maaltijden, uit eten?
- Volg je een dieet/heb je bepaalde dingen die je niet eet? (bv Halal, allergieën, culturele achtergrond, vegetarisch, vegan?)
- Wat is voor jou belangrijk in je eten? (als duurzaamheid, vraag dan wat dat inhoudt voor de persoon)

Voedsel verkrijgen
- Waar haalde je deze maaltijd/de ingrediënten voor de maaltijd vandaan? (supermarkt, andere winkels, donaties, voedselbank, eigen tuin, buurttuin, boer, kinship shopping, bestellen, etc)
- Is dit waar je normaal voedsel vandaan haalt? Waar ga je nog meer naartoe? % van voedsel wat je van waar haalt? Waarom ga je daar naartoe?
- Hoe kom je daar? Is dat makkelijk/moeilijk? Ver weg/dichtbij? Gaat er iemand mee?
- Wanneer/hoe vaak doe je boodschappen? Hoeveel tijd kost het je om eten te halen (per week?) - Welke tijd op de dag, week vs weekend?
- Let je op bepaalde eigenschappen van producten? Wat en waarom? (ook culturele achtergrond?)
- Zijn er dingen die je niet kan krijgen/niet koopt? Waarom niet?
- Wat vind je van het voedselaanbod in je wijk?

Opslag/koken (als nog niet benoemd in eerdere antwoorden)
- Opslag: heb je genoeg ruimte in huis om eten te bewaren? Bewaar je je eten op een bepaalde manier?
- Koken: hoe kook je normaal? Alleen/samen, waar, hoe? Andere ideeën die meespelen bij het koken?

Afval/recyclen
- Voor je maaltijd gisteravond, creëerde je toen afval?
- Zo ja, wat? En wat deed je daarmee?
- Is dat normaal ook zo? Soort afval, hoeveelheid, wat je ermee doet? Waarom doe je dit?

Voedselwensen
- Ben je tevreden met wat/hoe je eet over het algemeen?
- Is er iets wat je graag anders zou willen mbt eten? (bv gezonder, goedkoper, meer, minder, duurzamer, meer in lijn met cultuur, etc) Vraag door.
- Wat weerhoudt je ervan om dit te veranderen? (Barrières).

Specifiekere vragen circulair
(hoeven niet allemaal, afhankelijk van of al benoemd in eerdere antwoorden)
- Maak je je wel eens zorgen om het milieu? Zo ja, in welke mate heb je het gevoel dat je hier iets aan kan doen?

Verkrijgen voedsel
- Koop je wel eens lokaal of biologisch eten? Waarom wel/niet? Hoe vaak?
- Is dit soort eten te verkrijgen in jouw buurt? (vb winkels).
- Interesse/mogelijkheid om dit zelf te verbouwen?
- Koop je wel eens eten zonder of met minder verpakking? Waarom wel/niet? Hoe vaak?
- Is dit soort eten te verkrijgen in jouw buurt? (vb winkels).
- Wat zou je kunnen motiveren om meer lokaal/biologisch/zonder verpakking te kopen? Wat zou het makkelijker kunnen maken?

Afval/recyclen
- Deel je restjes/hergebruik je restjes? Zo ja, waarom/hoe vaak? Zo nee, waarom?
- Scheid je je afval (organisch, plastic, papier, glas). Waarom wel niet?
- Zijn er recyclemogelijkheden in je buurt (compost, bakken, etc?)

- Wat zou je kunnen motiveren om restjes op te eten/te delen. Te scheiden/recyclen? Wat zou het makkelijker kunnen maken?

Betekenis circulariteit en inclusiviteit
- Als ik circulariteit zeg (mbt voedsel), waar denk je dan aan?
- Zelfde voor inclusie/inclusiviteit?

Einde
- Heb ik alles gevraagd wat nodig is om jouw eetgewoontes te begrijpen, of is er nog meer dat je met me zou willen delen?
- Bedank nogmaals voor deelname: voor tijd en delen informatie.
- Vraag of de deelnemer de resultaten van het onderzoek willen hebben.
- Optie: vraag of de deelnemer nog meer mensen kent die mee zouden willen doen.

A.4. Interview guide for individuals (English)

Start
- Thank for participating
- Short introduction of myself
- Short introduction of research (stress that all answers are relevant, no right or wrong ones)
- Consent form (explanation anonymity)

Demographic characteristics
General
- Age (a range is also okay, if they don't want to share exactly)
- Highest level of education?
- Nationality? Cultural background?
- Do you work/do you receive benefits? Other activities, e.g. volunteer work?
- How much is your income at the moment?
- How much is your budget for food/food? What % of your income is this? Month/week?

Living
- Neighborhood in ZO:
- Amstel III/Bullewijk, Venserpolder, Amsterdamse Poort and surrounding areas, H-Buurt, Holendrecht, Reigersbos, Gein, Nellestein, Geerdinkhof/Kantershof, Ganzenhoef and surrounding areas, Bijlmer Museum, K-Buurt
    - https://maps.amsterdam.nl/arealayout/
- How long have you lived in ZO?
- How many people are in the household? How many children, how many adults?
- Are there people outside the household who also regularly eat with you?

Food practices
General
- What did you eat last night?
- Where and with whom?
- Is that a normal meal for you? Why/why not? At home, takeaway/order, prepared meals, eating out?
- Are you on a diet/do you have certain things you don't eat? (e.g. Halal, allergies, cultural background, vegetarian, vegan?)
- What is important to you in your food? (if sustainability, ask what that means for the person)

Obtaining food
- Where did you get this meal/the ingredients for the meal? (supermarket, other shops, donations, food bank, own garden, community garden, farmer, kinship shopping, ordering, etc)
- Is this where you normally get food from? Where else are you going? What % of the food do you get from where? Why are you going there?
- How do you get there? Is that easy/difficult? Far away/near? Is anyone coming with you?
- When/how often do you go shopping? How much time does it take you to get food (per week?) - What time of day, week vs weekend?
- Do you pay attention to certain properties of products? What and why? (also cultural background?)
- Are there things you can't get/won't buy? Why not?
- What do you think of the food offering in your neighborhood?

Storage/cooking (if not already mentioned in previous answers)
- Storage: do you have enough space in your home to store food? Do you store your food in a certain way?
- Cooking: how do you normally cook? Alone/together, where, how? Other ideas that play a role in cooking?

Waste/recycling
- For your meal last night, did you create waste?
- If so, what? And what did you do with that?
- Is that normally the case? Type of waste, quantity, what you do with it? Why are you doing this?

Food wishes
- Are you satisfied with what/how you eat in general?
- Is there anything you would like to be different about your food? (e.g. healthier, cheaper, more, less, more sustainable, more in line with culture, etc.) Ask further.
- What prevents you from changing this? (Barriers).

More specific questions circular
(not all are necessary, depending on whether already mentioned in previous answers)
- Do you ever worry about the environment? If so, to what extent do you feel you can do something about this?

Obtaining food
- Do you ever buy local or organic food? Why/why not? How often?
- Is this type of food available in your area? (e.g. shops).
- Interested/possible to grow this yourself?
- Do you ever buy food without or with less packaging? Why/why not? How often?
- Is this type of food available in your area? (e.g. shops).
- What could motivate you to buy more local/organic/without packaging? Anything that would make it easier for you?

Waste/recycling
- Do you share/reuse leftovers? If so, why/how often? If not, why?
- Do you separate your waste (organic, plastic, paper, glass)? Why/why not?
- Are there recycling options in your area (compost, bins, etc?)
- What could motivate you to eat/share leftovers? To separate/recycle waste? Anything that would make it easier for you?

Meaning of circularity and inclusivity
- When I say circularity (with regard to food), what do you think of?
- Same for inclusion/inclusiveness?

End

- Have I asked everything needed to understand your eating habits, or is there more you would like to share with me?

- Thank you again for participating: for your time and for sharing information.

- Ask if the participant wants the results of the research.

- Optional: ask if the participant knows more people who would like to participate.

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Appendix B: Additional information on the CIFS research project & its support of this thesis

This research has received support from the EWUU Alliance CIFS research project. The EWUU Alliance is a collaboration between the Technical University of Eindhoven, Wageningen University and Research, Utrecht University, and the University Medical Centre Utrecht in the Netherlands. It promotes cross-disciplinary collaboration between young researchers and students from the participating institutions on topics like health, food, energy, and circularity, aiming to contribute to societal transitions (EWUU, 2024).

The CIFS research project has received EWUU Alliance funding to explore '*how urban planning shapes the physical and social environments of different city-regions and how, in turn, the latter influence food choices and food and packaging recycling opportunities of different groups of citizens*' (EWUU, 2022). Through my supervisor Dr. Francesca Rubiconto, I became part of the CIFS research team and received support from said team. This support came in both conceptual and practical form, such as access to sample consent forms and interview guides, support from CIFS student assistants, and cost reimbursements.

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Appendix C: Code lists

(Nothing) = a-priori code, observed in data
(X) = a-priori code, not observed in data
(E) = emergent code

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Practices	Sub-practices	Sub-sub-practices	
Circular food practices	Obtaining	Minimization of potential food waste	Planning of what to shop for
			(E) Only accepting foods that you can use
			Obtaining less appreciated foods (about to go bad, imperfect)
			Obtaining surplus foods
		Minimization of potential packaging waste	Picking foods with less or renewable/ biodegradable packaging
			Using reusable containers/bags
		Obtaining local/seasonal food	Obtaining local food
			Obtaining seasonal food
			Buying directly from a farmer (short food chains)
		Participating in alternative food networks	(X) Packaging-free shops
			(X) Community-supported agriculture schemes
			(X) Dumpster-diving
			Digital platforms fighting food waste
			(E) Getting leftover food from friends/ family/acquaintances
			(E) School gardens
			(E) Bingo
			(E) Hunting/fishing

Practices	Sub-practices	Sub-sub-practices	
Circular food practices	Obtaining	Growing your own food	
		Obtaining organic food	
	Storing, cooking & eating	Storing, cooking with, & eating leftovers	
		Eating fewer or no animal products	
		Using food that is about to go bad	
		Not preparing too much food	
		(X) Storing in reusable containers	
		(E) Using parts of food that are generally discarded	
	Disposing	Food sharing & solidarity initiatives	
		Waste separation	Packaging separate collection
			Food waste separate collection
		Composting	
		(X) Reuse/upcycling of packaging	
		(X) Consumers' food waste serving as food for animals meant for human consumption	
		(E) Human food waste serving as food for pets	

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Practice elements	Meanings	(E) Health
		(E) Food should not be wasted
		(E) Convenience
		(E) Solidarity/Community
		(E) Enjoyment
		(E) Cultural appropriateness
		(E) Sustainability/care about the environment
		(E) Circularity
		(E) Taste
		(E) Variety/diversity
		(E) Quality
	Materials	(E) Mental space
		(E) General availability of food options
		(E) General availability of recycling/composting options
		(E) Finances
		(E) Access to space to grow food
	Competences	(E) Knowledge about food offerings in neighborhood
		(E) Knowledge about recycling/composting opportunities in the neighborhood
		(E) Cooking skills (creativity/flexibility)
		(E) Knowledge/skills for growing food

Appendix D: Consent forms

D.1. Consent form (Dutch)

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GEÏNFORMEERDE TOESTEMMING: FORMULIER VOOR ONDERZOEKDEELNEMERS

Vul dit formulier alstublieft in nadat u van de interviewer uitleg heeft gekregen over het onderzoeksproject. Aan het einde van dit formulier vindt u tevens een informatieblad met meer informatie over het onderzoeksproject.

Afstudeerproject: Masterscriptie voor Metropolitan Analysis, Design, and Engineering door Liesbeth Lens. De focus van de masterscriptie: Inclusiviteit en circulariteit van voedselsystemen in Amsterdam Zuidoost.
Duur: voorjaar 2023 – voorjaar 2024

Dit afstudeerproject maakt deel uit van een groter onderzoeksproject van de Universiteit Wageningen, Universiteit Utrecht en Universiteit Eindhoven, genaamd het Circular and Inclusive Food System (CIFS) project:

Naam van het project: Het bouwen van een gemeenschapsgerichte participatieve aanpak om te onderzoeken hoe stadsplanning de toegang van burgers tot circulaire en inclusieve voedselsystemen beïnvloedt. Onderdeel van het CIFS-project.
Duur: november 2022 – april 2024

Hoofdonderzoeker van het project: Dr. Francesca Rubiconto

Interviewer: Liesbeth Lens
Deelnemer/organisatie:

Bedankt voor uw interesse in dit onderzoeksproject. Voordat u akkoord gaat met deelname, hoort de interviewer het onderzoeksproject aan u uitleggen.

Als u vragen heeft over het deelnemersinformatieblad of de toelichting, kunt u deze stellen aan de onderzoekers voordat u besluit deel te nemen. U hoort een kopie van dit geïnformeerde toestemmingsformulier te krijgen, zodat u dit kunt bewaren en het op elk moment kunt raadplegen.

Deelnemersverklaring:
- Ik verklaar dat ik door de interviewer mondeling en schriftelijk ben geïnformeerd over de doelstellingen en het verloop van het project, alsmede over de mogelijke risico's.
- Ik neem vrijwillig deel aan dit onderzoek en accepteer de inhoud van het informatieblad dat ik heb gekregen over het bovengenoemde project. Ik heb voldoende tijd gehad om mijn beslissing te nemen.
- Ik begrijp dat mijn persoonlijke gegevens beschermd zijn en alleen op geanonimiseerde wijze zullen worden gebruikt.
- Ik kan mijn toestemming voor deelname aan het onderzoek op elk moment en zonder mezelf te hoeven rechtvaardigen, zonder enige nadelige gevolgen, intrekken en ik ben naar behoren geïnformeerd over mijn rechten om mijn persoonlijke gegevens te gebruiken.
- Ik ga ermee akkoord dat de interviewers een audio-opname maken ter ondersteuning van het documentatieproces. Ik ben mij ervan bewust dat ik de vrijheid heb om mijn toestemming achteraf te weigeren en/of in te trekken. De opname wordt uitsluitend gebruikt voor het transcriberen van het interview en wordt uitsluitend gedeeld met het projectteam. De opnames worden vóór het einde van het project verwijderd.

Een kopie van dit formulier is voor u.

Naam:

Handtekening:

Datum:

☐: Ik ga ermee akkoord dat de hoofdonderzoeker mijn persoonlijke contactgegevens bewaart om opnieuw contact op te nemen om te vragen of ik geïnteresseerd ben in deelname aan toekomstige onderzoeksprojecten.

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DEELNEMERSINFORMATIEBLAD CIFS PROJECT

Het doel van dit onderzoek is om een integraal beeld te krijgen van de voedselconsumptie en verspillingsgewoonten van burgers en organisaties. In dit deel van het onderzoek zijn we vooral geïnteresseerd in de fysieke en sociale barrières die je waarneemt en ervaart bij het maken van circulaire voedselkeuzes. Dit onderzoek maakt deel uit van het grotere CIFS-onderzoeksproject van de Universiteit Wageningen, Universiteit Utrecht en Universiteit Eindhoven. Het doel van dit onderzoeksproject is om te begrijpen hoe stadsplanning de voedselomgeving in steden vormgeeft, en in welke mate deze omgeving voedselkeuzes beïnvloedt. De bevindingen van het onderzoek zullen de voortdurende beleidsdialoog over het creëren van circulaire en inclusieve voedselsystemen ondersteunen.

Naam hoofdonderzoeker van het project: Dr. Francesca Rubiconto
Instelling/adres: Urban Economics Group, Hollandseweg 1, 6708 KN Wageningen
Contact details: francesca.rubiconto@wur.nl, cifs.researchproject@wur.nl
Naam interviewer: Liesbeth Lens

Wat moet ik doen voor dit onderzoek?
In dit onderzoek beantwoord je vragen van de onderzoeksteamleden over jouw ervaringen met inclusiviteit en circulariteit rond voedsel.

We verwachten dat het interview ongeveer 30-60 minuten zal duren.

Welke gegevens slaan jullie op?
Tijdens het project nemen we audio op van onze gesprekken. Als we dergelijke opnames maken, wordt dit materiaal na onze sessie getranscribeerd en geanonimiseerd. De transcripties kunnen op verschillende manieren worden gebruikt:
- Voor ons eigen lopende onderzoek
- Voor onderwijs- en trainingsdoeleinden
- Voor wetenschappelijke publicatie in artikelen of presentaties

Uw persoonlijke gegevens (naam, leeftijd en woonplaats) en gegevens die u op unieke wijze kunnen identificeren, zullen in dit materiaal niet worden gebruikt, tenzij u ons uitdrukkelijk verzoekt dit te doen.

Hoe lang bewaren jullie mijn gegevens?
Wij bewaren uw gegevens niet langer dan nodig is om het onderzoek af te ronden en de resultaten ervan te publiceren. Daarna vernietigen wij de gegevens.

Wat zijn de risico's voor mijn privacy?

Er wordt u gevraagd of u in het onderzoek geïdentificeerd wilt worden of niet. Als dit niet het geval is, zullen we voorzorgsmaatregelen nemen om ervoor te zorgen dat we geen privé-informatie over u verzamelen of opslaan tijdens ons contact, behalve uw e-mailadres om verdere opheldering te vragen. Al het interviewmateriaal wordt geanonimiseerd voordat het wordt bewaard. Als er tijdens het interview persoonlijke gegevens worden vermeld, worden deze in elke wetenschappelijke publicatie geanonimiseerd. De term 'geanonimiseerd' betekent dat uw persoonlijke gegevens voldoende zijn samengevoegd en beschermd, zodat niemand u opnieuw kan identificeren. Dit betekent dat niemand u opnieuw kan identificeren, tenzij hij of zij zich tot het uiterste inspant om dit te doen. Er moet echter worden opgemerkt dat absolute anonimiteit niet kan worden gegarandeerd.

Als (een deel van) de verzamelde informatie als gevaarlijk voor u kan worden beschouwd, vragen wij u ons onmiddellijk op de hoogte te stellen. Hoewel de inzichten uit onze interacties de ontwerpbeslissingen in het project nog steeds kunnen beïnvloeden, wordt uw interview verwijderd en uitgesloten van gebruik in publicaties of rapporten. Bovendien kunt u, zoals hieronder vermeld, uw deelname op elk moment intrekken, zonder gevolgen voor u.

Alle gegevens worden veilig verzameld, opgeslagen en in anonieme vorm gerapporteerd, in overeenstemming met het beleid van de Universiteit Wageningen en de Universiteit van Amsterdam op het gebied van Research Data Management en GDPR (de AVG). Alleen geautoriseerde onderzoekers hebben toegang tot de opgeslagen gegevens.

Zijn er voordelen voor mij?

Er zijn geen directe voordelen voor u. Het doel van het onderzoek is om het beleid op het gebied van voedselcirculariteit te helpen informeren. De uitkomst van het project, inclusief technische, juridische en beleidsaanbevelingen, zal worden gecommuniceerd aan relevante actoren. Dit kunnen bijvoorbeeld burgerorganisaties, overheidswerkers, of geldschieters die het ontwikkelen van beleid ondersteunen zijn.

Zijn er betalingen of kosten?

Nee, u krijgt geen vergoeding voor uw tijd en er zijn ook geen kosten aan uw deelname verbonden.

Wat als ik nog vragen heb?

U kunt ons tijdens het interview om meer uitleg vragen als er iets niet duidelijk is of als u meer informatie wilt ontvangen. Indien er na het interview vragen zijn, kunt u contact opnemen met het onderzoeksteam via francesca.rubiconto@wur.nl of cifs.researchproject@wur.nl.

D.2. Consent form (English)

INFORMED CONSENT FORM FOR RESEARCH PARTICIPANTS

Please fill in this form after receiving an explanation about the research project from the interviewer. At the end of this form, you will also find an information sheet with more information about the research project.

Thesis project: Master thesis for Metropolitan Analysis, Design, and Engineering by Liesbeth Lens. The focus of the Master thesis: inclusivity and circularity of food systems in Amsterdam Zuidoost.
Duration: Spring 2023 – Spring 2024

This thesis project is part of a larger research project by Wageningen University, Utrecht University, and Eindhoven University, called the Circular and Inclusive Food System (CIFS) project:

Name of the project: Building a community-based participatory approach to explore how urban planning influences citizens' access to circular and inclusive food systems. Part of the CIFS project.
Duration: November 2022 – April 2024
Principal Investigator of the project: Dr. Francesca Rubiconto

Interviewer: Liesbeth Lens
Participant/Organization:

Thank you for your interest in this research project. Before you agree to participate, the interviewer must explain the research project to you.

If you have any questions about the participant information sheet or the explanations, please ask the researchers before you decide to participate. A copy of this informed consent form must be given to you so that you can keep it and consult it at any time.

Participant's declaration:
- I declare that I have been informed orally and in writing by the interviewer about the objectives and the course of the project, as well as the possible risks.
- I am taking part in this study voluntarily and accept the contents of the information sheet I have been given about the above-mentioned project. I have had sufficient time to make my decision.
- I understand that my personal data are protected and will only be used in an anonymized manner.
- I can revoke my consent to participate in the study at any time and without having to justify myself, without any adverse effects and I have been duly informed of my rights to use my personal data.
- I agree with the interviewers making an audio recording to support the documentation process. I am aware that I am free to decline and/or withdraw my consent afterward. The recording will only be used for transcribing the interview and only be shared with the project team. The recordings will be deleted before the end of the project.

A copy of this form is for you.

Name:

Signature:

Date:

☐: I agree that the Principal Investigator may keep my personal contact data in order to be contacted again and to investigate whether I am interested in participating in future research projects.

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INFORMATION SHEET CIFS PROJECT

The purpose of this study is to obtain a comprehensive picture of the food consumption and waste habits of citizens and organizations. In this part of the study, we are especially interested in the physical and social barriers that you observe and experience in making circular food choices. This study is part of the bigger CIFS research project being undertaken by Wageningen University, Utrecht University, and Eindhoven University. The aim of this research project is to understand how urban planning shapes the food environment in cities, and to which extent this environment influences food choices. The findings of the study will support the ongoing policy dialogue on the creation of circular and inclusive food systems.

Name Principal Investigator: Dr. Francesca Rubiconto
Institution / **Address**: Urban Economics Group, Hollandseweg 1, 6708 KN Wageningen

Contact details: francesca.rubiconto@wur.nl, cifs.researchproject@wur.nl

Name Interviewer: Liesbeth Lens

What do I have to do for this study?
In this study, you will be answering questions from the research team members regarding your experience with inclusivity and circularity around food.

We expect the interview to last around 30-60 minutes.

What data will you store?
During the project, we will record audio of our conversations. If we make such recordings, this material will be transcribed and anonymized after our session. The transcriptions may be used in several ways:
- For our own ongoing research
- For teaching and training purposes
- For academic publication in articles or presentations.

Your personal details (name, age, and place of residence) and details that may uniquely identify you will not be used in any of this material unless you explicitly request we do this.

How long will you store my data?
We will store your data only as long as is needed to complete the user study and publish the results. Thereafter we will destroy the data.

What are the risks to my privacy?
You will be asked whether you would like to be identified in the study or not. If not, we will take precautions to ensure we do not collect or store any private information about you in the process of communicating with you other than your email to request further clarification. All interview material will be stored after anonymization. If any personal data is mentioned during the interview it will be anonymized in any scientific publication. The term "anonymized" means that your personal information has been sufficiently aggregated and protected, preventing anyone from re-identifying you. This means that no one can re-identify you unless they go to great lengths to do so. It should be noted, however, that absolute anonymity cannot be guaranteed.

If any of the collected information could be considered dangerous for you, we ask you to inform us immediately. While the insights from our interactions may inform the design decisions in the project, your interview will be deleted and excluded from use in any publications or reports. Also, as noted below, you can withdraw your participation at any time, without consequences to you.

All data will be collected and stored safely and reported in an anonymous form, in accordance with the University of Wageningen's and the University of Amsterdam's policy on Research Data Management and the GDPR. Only authorized researchers will have access to the data stored.

Are there any benefits for me?
There are no direct benefits to you. The objective of the study is to help inform policy on food circularity. The outcome of the project, including technical, legal, and policy recommendations will be communicated to relevant communities, civil society actors, public workers, and authorities, as well as funders who may in the future support the development of policy.

Are there any payments or costs?
No, you will not be paid for your time, nor are there any costs.

What if I have more questions?
Please ask us during the interview if there is anything that is not clear or if you would like to receive more information. If any questions arise after the interview, you can contact the research team via francesca.rubiconto@wur.nl or cifs.researchproject@wur.nl.

Appendix E: Results co-occurrence analysis practice elements & sub-practices

Results of the co-occurrence analysis in Atlas.ti, of meaning, material and competence elements with food sub-practices in the individual interviews. Only co-occurrences of with a score of at least three are included to increase the focus of the analysis on the most material practice elements.

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Filter quotations from documents in group **Citizens**		1. Food practices 229	1.2. Obtaining 119	1.3. Storing,… 59	1.6 Disposing 77
2. Practice elements	423	110	56	32	34
2.1. Meanings	309	71	36	24	23
2.1.1.e. Health	64	16	8	7	2
2.1.11.e Food should not be wasted	13	10		6	5
2.1.12.e Convenience	9	5	2		3
2.1.13.e Solidarity/Community	66	10	5	1	4
2.1.14.e. Enjoyment	10	3	3	1	
2.1.2.e. Cultural-appropriateness	63	20	13	7	4
2.1.3.e. Sustainability/care about environment	31	5	3	2	
2.1.4.e. Circularity	29	6		3	5
2.1.6.e. Taste	29	7	5	3	3
2.1.7.e. Variety/diversity	31	4	3	1	
2.1.9.e Quality	17	8	7	2	
2.2. Materials	192	52	30	9	14
2.2.13.e. Mental space	17	4	3	1	
2.2.2.e. General availability of food options	24	7	7		
2.2.4.e. General availability of recycling/composting options	11	6			6
2.2.6.e. Finances	112	25	19	4	3
2.2.9.e Access to space to grow food	10	3	3		
2.3. Competences	71	24	12	6	10
2.3.1.e. Knowledge about food offerings in the neighborhood	9	4	4		
2.3.2.e. Knowledge about recycling/composting opportunities in the neighborhood	7	3			3
2.3.6.e. Cooking skills (creativity/flexibility)	20	6	3	4	2
2.3.9.e. Knowledge/skills for growing food	6	3	3		

Appendix F: Additional insights from organizational interviews

Next to the more practical suggestions from the low-income individuals themselves on how to increase their adoption of circular food practices, insights into the challenges and strengths of low-income communities in Amsterdam Zuidoost emerged from the organizational interviews. In the next few paragraphs, these are shortly discussed.

Life problems and/or financial pressures are a priority for this group

Multiple organizational interviewees stressed that any environmental or circular concerns, if present, take a backseat to more pressing problems in the lives of low-income individuals, such as financial survival:

> *Well, I think a large part of them just has to survive. So if you have to survive then you are not concerned with all those other things. … There's something else at number one and number two and number three. … They cannot be blamed. It is a pity that it is not easier to think about sustainability. So there could still be something to gain there. – o4*
>
> *Well, they're just happy that they can get a hot meal and that they can get some meat. Proteins and all that, because… It's actually a bit distressing around here. I know people who actually only live on bread and toppings. – o9*

Quotes from the individual interviews do support this insight from the organizational interviews:

> *[Do you ever worry about The Environment or How the World is doing?] I worry about my wife when I'm dead. … Because she didn't work here. … That really worries me. So how she should live on. … I don't know if she's going to get benefits. … Then she might not be able to pay the rent and I don't want her to end up on the street. ... So I'm really worried about that. … But I can't put money away for it. Because we live on the edge, seriously. Because we often send those things to Suriname and things like that. – c10*

Additionally, there is the question of whether the burden of contributing to the circularity of the food system should be placed on a group of citizens who are already struggling, as stated by multiple interviewees, both individual and organizational:

> *Yes, because then I think about the other side. Indeed, I am very busy with my good heart and I want to do well. And then I think yes, I live around the corner from Tata Steel, so to speak, and then I think yes. What impact does it have and how much mental energy should it cost me compared to that? So yes. So that's a difficult balance, so to speak. – c4*

Health is an important issue in Amsterdam Zuidoost

In every organizational interview, health was mentioned as an important issue in Amsterdam Zuidoost, especially for low-income individuals. Due to inequality in access to healthy food and stress, health issues are said to be more prevalent among this group. The municipal interviewee shared that when they look at the municipal food strategy, the topics of poverty, food waste, health, and urban agriculture, and especially the connections between them are most relevant in Amsterdam Zuidoost. The private initiatives and NGOs also paid special attention to the healthiness of the meals they provide.

Cultural appropriateness of food is valued strongly

Multiple organizational interviews also stressed the strong value that inhabitants of Amsterdam Zuidoost place on culturally appropriate foods, even if buying them puts additional stress on the food budget. Again, this is also observed in the individual interviews:

> *And yet it is bought. So you can start to wonder, gosh, this appreciation is so high that people are also prepared to spend quite a large part, or perhaps even a larger part in proportion to their salary, on these types of vegetables. – o2*

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Yes, it is expensive. … You can't buy it every week. … But sometimes you can. At Christmas I bought, uh, goat meat. Goat meat is expensive here. ... That's really a Curaçaoan [food] ... I bought it … To eat at Christmas. … But you can't buy it every time. [No no no. And would you like that? To buy it every time.] No, nope. [then it won't be special anymore.] – c6

This appreciation of cultural foods sometimes goes hand in hand with agricultural competences:

For example, the Surinamese population group, but also the African community. There are simply a lot of people in there with a traditional link to agriculture. So many Surinamese are actually used to having a yard around their house, where they can just... … Where things grow and many Africans I speak to, yes, they come from the countryside and they are used to farming. And the fact that they don't do that here doesn't mean that they necessarily don't have the knowledge or don't have the desire. – o7

Focus on what is already there: support local initiatives

The organizational interviews also stressed the importance of focussing on what is already there in Amsterdam Zuidoost. Historically, the inhabitants of Zuidoost do not always have the best relationship with the government, which can lead to a sensitivity to the feeling of being told what to do by the city government. Hence, supporting local initiatives is seen as a more successful strategy:

I also think that Zuidoost has a specific attitude from residents towards the government. ... Well, historically speaking, there has been a bit of distrust of the government, especially among residents who have lived here for much longer, and at the same time there is also a great deal of dependence on that same government. So a kind of yes, that is also quite schizophrenic at times, a kind of attitude of, well, the government should do something about it, and at the same time a feeling of yes, the government will never do anything about it. and that is typical of Zuidoost. – o7

What is needed in the neighborhood is also to especially search out the bottom up initiatives and especially not impose too many things from the central city or so on. So very much looking for the energy and initiatives that exist in the district and strengthening that. – o3

This also links to the recommendation by organizational interviewees to consider the scale of projects in Amsterdam Zuidoost. Projects tend to be most successful in Zuidoost when they are started by the inhabitants: this ensures a human scale and a strong feeling of ownership increases the longevity of a project. There is however a need for financial and capacity support among initiatives that contribute to circularity in the food system in Amsterdam Zuidoost too.

Amsterdam Zuidoost has a strong sense of community: especially at the neighborhood level

Many of the organizational interviews mentioned the strong sense of solidarity/community in Amsterdam Zuidoost:

I think that is heart-warming. In Zuidoost you are also more willing to do things for each other, right? So, for example, those food banks. Yes, they are here and they are really needed. But you also notice that they are also quite supported. Just from society. Many more people are aware that those food banks exist. – o7

This sense of solidarity/community was mostly mentioned in one of two forms: firstly, there is the community that forms on the neighborhood level:

So it all works a bit per neighborhood. And even more so because you have a name for each neighborhood, but usually also a community center and a residents' platform. That's just kind of the unit in which everything [is organized]. Everyone comes in their neighborhood and not so much outside.

And there you know fewer people, there you have less to do with.– o5

Secondly, there are the communities that have formed around certain cultural backgrounds. These communities are often well-organized but tend to not mix as much with each other.

Because those people have their own community. They are very well organized. They all have boards. And not all of them have immediately a path to solutions with those boards. But they have arranged everything internally.– o5

So you have all these separate communities here. And we also speak of THE community. That means the collective of all those communities here. - o5

Language barriers
Finally, three of the organizational interviewees mentioned that language barriers also play a role in the access of low-income individuals in Amsterdam Zuidoost to information about food practices that contribute to circularity, potentially limiting their engagement in such practices.

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