Exploring food provisioning practices of households with a migration background through Food Asset Mapping

A case study of Wageningen, the Netherlands

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Abstract

The increased human mobility and food systems globalisation in the urban scene of the Netherlands prompts the need for an inclusive food environment, which is widely featured in the Food Agendas published by many Dutch cities. Wageningen Food Agenda 2021-2030 indicates several knowledge gaps including the relationship between residents with a migration background and the surrounding food environment. This research aims to explore the day-to-day food provisioning practices of households with a migration background that make use of the food environment of Wageningen.

Through the analytical lenses of Social Practice Theory and the Capability Approach, semi-structured interviews were conducted that served as the basis for the qualitative analysis. Moreover, participants were asked to take photographs of their daily food provisioning routines, to create a Food Asset Map that aimed to provide an overview of all food assets used by the participants.

Analysing the gathered data demonstrates that households that participated in the study made use of a wide range of both formal and informal food assets located within and outside the premises of Wageningen municipality, depicted in a Food Asset Map. The results show that participants' attitudes towards quality, assortment, price and other characteristics of food assets were influenced by cultural and other personal norms and values. The households' ability to enact the valued food provisioning practices was determined by the way the local food environment met the households' needs. Although many food practices could be recreated within the premises of the Wageningen food environment, all households have indicated to struggle to meet specific food preferences within the premises of the formal food environment and opt for alternative and informal means of food provisioning. Moreover, the study determined that households base their food provisioning choices on a multitude of food asset characteristics like availability, accommodation, affordability, acceptability and accessibility.

In conclusion, this research contributes to creating a better understanding of the ways households with a migration background make use of the food environment in Wageningen, which supports the Wageningen Food Agenda 2021-2030 goals. It is argued that the Wageningen food environment is becoming progressively more transnational as it is co-created by its residents through their daily food routines that are driven by their values, habits, and a longing for a sense of belonging, which is reflected in the rising availability of suppliers of culturally appropriate products. Based on these findings it is suggested that researchers and practitioners strive to look beyond the food environment's inclusivity by focusing on studying the already existing less dominant foodways. Future research is needed to enrich these conclusions by identifying how households with a migration background balance their food-related wishes and needs with the options present in a food environment.

Keywords: Food access, urban food environment, migration background, daily food practices, food provisioning, inclusiveness, transnationalism, the Netherlands, Food Asset Mapping

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Abbreviations

Abbreviation	Definition
CA	The Capability Approach
FAO	The Food and Agriculture Organization of the United Nations
MB	A Migration Background
SPT	Social Practice Theory

1. Introduction

1.1 Food practices in a transnational society of the Netherlands

In 2021, 93 per cent of the population of the Netherlands lived in urban areas, showcasing the prominence of urbanization in the country (The World Bank, 2023). While the ever-changing demographics of Dutch cities shape the existing food environment to a degree, the urban foodscape has its own significant influence on consumer behaviour (van der Gaast et al, 2020; FAO, 2016). The immediate food environment that surrounds an individual has shown to have a direct impact on food options, moulding a person's long-term food purchasing and consumption behaviour (Ocké, et al., 2017). As a result of evermore globalising agro-food chains, more and more non-native foods are becoming daily staples of the Dutch society's diet (Geurts et al., 2017). Over the past two decades, the Dutch urban foodscape has shifted towards greater availability of convenience and ready-to-eat food retailers, supplying largely pre-packaged and processed products (Pinho, et al., 2020; Ocké, et al., 2017). Therefore, this dominant obesogenic and convenience-oriented food environment present in Dutch cities challenges the transition to a healthier and more sustainable diet (Ocké, et al., 2017; Nicolaou, et al., 2012).

The multi-ethnicity of urban residents adds layers of intricacy by altering the dynamics between food practices and the established food environment (van der Gaast et al., 2020). Over the years Dutch cities have become a residence place for a growing number of inhabitants with diverse cultural backgrounds (CBS, 2022a; Brons, Oosterveer, & Wertheim-Heck, 2020). In 2022, 26.2 per cent of the Dutch population was recorded to have a migration background, which comprises both people born abroad (first generation) as well as individuals born in the Netherlands with at least one parent with a migration history (second generation). The population group with a migration background has become greatly diverse both from the perspective of the country of origin and duration of stay in the Netherlands (CBS, 2022b).

Food habits and practices vary significantly among inhabitants of multi-ethnic societies like the Netherlands (Brons et al., 2020; Geurts et al., 2017). For many households living in the Netherlands, the culturally appropriate food practices vary from the surrounding food environment. A study that explored the well-being of Ghanaian migrants in the Netherlands has demonstrated how interlinked the participants' ideologies and values are with their experience of food, which has the potential to impact how one feels towards the surrounding them food environment (Visser, Bailey, & Meijering, 2014). In the study by Visser et al. (2014), the practices of buying, cooking, sharing and eating culturally appropriate food represented key aspects of the well-being of the interviewees.

1.2 Defining the food environment

To investigate a city's availability and (cultural) appropriateness of food from a resident perspective the *food environment* concept will be employed in this study. As defined by the Food and Agriculture Organization of the United Nations (FAO) food environments are "*the settings with all the different types of food made available and accessible to people as they go about their daily lives*" (FAO, 2016). Other authors define the food environment as an interface set within the greater food system that facilitates food provisioning and consumption for its inhabitants (Brons, 2022; Turner, et al., 2018). The local food environment that surrounds an individual has a direct influence on the individual's access to food (Lake, 2018). Urbanization, shifting prosperity levels, technological development and other developments alter the food environment and affect inhabitant's food access (Pinho, et al., 2020). This can also be observed in the food environments of the Netherlands, reflected in the rising number of food delivery outlets and the declining availability of local food shops like bakeries and butchers (Pinho, et al., 2020)

The various food outlets as well as the more informal food provisioning spaces that make up the food environment are referred to as *food assets* by Baker (2018). According to the publication, food assets represent the multiplicity of food-offering places that support the food security of the local communities and neighbourhoods such as "*food enterprises, markets, retailers, community gardens, urban farms, community kitchens, student nutrition programs, emergency food distribution*

and community food organizations and centers" (Baker, 2018). The food environment is composed of food assets that can be both formal (market) and informal (non-market-based), which may include retail outlets of varying scopes, restaurants, takeaway outlets, home-growing setups, foraging locations and forms of food transfers (e.g., sharing, gifts, donations) and other (Turner, et al., 2018; Lake, 2018; Soma, Li, & Shulman, 2022). A study by Soma et al. (2021) has demonstrated that informal food assets, such as food-sharing practices, community bartering, 'freeganism' and dumpster diving play a crucial role in the food security of Vancouver residents (Soma, Shulman, Li, Bulkan, & Curtis, 2021). In this thesis, the various formal and informal ways in which food is attained will be referred to as *food provisioning practices*, which is a concept introduced in the study by Veen et al. (2012) that allows the reader to go beyond the producer-consumer dichotomy and consider *all* activities through which food is procured (Veen, Derkzen, & Wiskerke, 2012; McIntyre & Rondeau, 2011). Further elaboration on this concept will follow in the theoretical framework (*Chapter 2*).

1.3 Towards an inclusive food environment in the Netherlands

As a response to the earlier-mentioned developments in the urban scene, a more inclusive, sustainable and healthy food environment has become a widely featured theme in the Dutch Political Agenda (NWO, 2023; UU, 2022). Worldwide an increasing number of cities have formed multi-year food strategies, with Dutch cities like Almere, Amsterdam, Groningen, Rotterdam, Ede and Wageningen following these developments by publishing Food Agendas (Sibbing, Bruil, & Hollenberg, 2021). The City Deal 'Food on the Urban Agenda' has been developed to create more sustainable food systems and facilitate a transition in the urban food environments by shifting residents' eating patterns and increasing the consumption of local products (NWO, 2023; Sibbing, Candel, & Termeer, 2019; AgendaStad, n.d.). Efforts to create a more inclusive food environment are made not only by Dutch municipalities but also by bottom-up food initiatives like 'Het Eetshap'[1] and research organizations like The Dutch Research Agenda (NWA) (Het Eetschap, 2020; NWO, 2023).

While efforts are made by municipalities to set transition strategies towards a more resilient and inclusive (urban) food environment, often little is known about the way residents navigate themselves within the existing food environment, as stated in the Food Agenda of Wageningen (Sibbing, Bruil, & Hollenberg, 2021). Therefore, there is a need to understand the day-to-day practices that form the relationship between the citizens/consumers and the surrounding them food environment (Brons, 2022; Visser, Bailey, & Meijering, 2014).

1.3.1 Food Asset Mapping

Food asset mapping is an approach that resonates with the growing interest in food-sensitive planning, public health, and food environment resiliency (Baker, 2018). It is a tool that can facilitate the creation of an overview of the used food-related resources in a neighbourhood or city (Pothukuchi, 2004). Food asset mapping is one of the many tools used in food system analysis and planning that is becoming increasingly popular within the food system transition governance in the Netherlands. Projects like 'Assessment and Planning of the Utrecht City Region Food System' published by the RUAF Foundation and 'Urban Agriculture Map' launched in Amersfoort aim at mapping and bringing together food-related stakeholders (Haenen, Renting, Dubbeling, & Hoekstra, 2019; de Feijter, 2017).

Many mapping approaches often lack citizen engagement as they are not centred around the local community perspectives. A recent study by Soma et al. (2022) executed in Vancouver, Canada, offers an inclusive alternative through direct engagement with a group of diverse community members belonging to racialized and often disadvantaged groups (Soma, Li, & Shulman, 2022). The research explored the local food assets through a social practice theory framework, navigating

[1] *'Het Eetshap' Foundation* initiates projects in the domain of community participation and the promotion of sustainable and healthy food habits with great attention to food cultures and the identity of the participants (Het Eetschap, 2020).

through everyday food practices. Besides resulting in the establishment of a citizen science food asset map, the study has identified hidden food assets, meanings, barriers and opportunities in relation to issues of resiliency, decolonization and food justice in the food environment of Vancouver (Soma, Li, & Shulman, 2022).

1.4 Beyond in- and exclusion in the food environment

As mentioned earlier, the concept of inclusion in the food environment is gaining a rising popularity amongst governing actors and others. Brons's (2022) research based in Almere, the Netherlands, investigated the topic of inclusion and exclusion in urban food practices in the context of increasing multi-ethnic cities. The study of Brons (2022, p.26) quotes a definition of social inclusion established by Hinrichs and Kremer (2002): "*Social inclusion … can be defined as an ongoing and reflexive process of full and engaged participation by all interested or affected social actors, regardless of their socio-economic or cultural resources*" (p.68). Brons (2022) challenges Hinrichs and Kremer's (2002) notion by problematising the use of socio-economic and cultural resources as frameworks through which in- and exclusion are understood and instead proposes to recognize diversity, nuances and dynamics of daily (urban) food practices.

Furthermore, Brons (2022, p. 138) argues that a constant definition of what makes *inclusive* food practices cannot exist due to the ever-changing food practices and food environment. The research by Brons et al. (2020) has shown that residents with a migration background adapt their practices to meet their new food environment while co-creating and shaping it. A new food environment not only influences eating and cooking habits but profoundly shapes food provisioning practices (Huizinga & van Hoven, 2018; Brons et al, 2020; Visser et al, 2014). Home growing, online shopping, food preservation and network establishment with local producers are examples of newly formed access methods of culturally appropriate food by Syrian migrants in Almere (Brons et al., 2020). "*This counters the understanding of this 'vulnerable' group as 'excluded' and instead highlights the resourcefulness of their everyday food practices*." (Brons, 2022, p. 138). This quote echoes Ozkazanc-Pan's (2019) critique of the concept of social inclusion.

Ozkazanc-Pan (2019) proposes to look beyond the idea proposed by Hinrichs and Kremer (2002) that formulates social inclusion as the "*process of full and engaged participation by all interested or affected social actors*" (p. 68, emphasis added). Ozkazanc-Pan (2019) states: "*In other words, if inclusion is the ability of an outsider to enter a space that was not intended for or created by them, belonging is the result of creating spaces and sites through intention and action*." (p. 483). In the modern age of mobility, multicultural societies and transnationalism create new perceptions of what is identity, citizenship and belonging (Ozkazanc-Pan, 2019). Ozkazanc-Pan (2019) argues that the notion of society as a space in which 'outsiders' can be included into when they fulfil expected rules, norms and practices remains the status quo (p. 483). Instead, the author offers the superdiversity framework that helps understand the migrant experience, creating opportunities for one to maintain connections with several places, spaces and people expanding beyond one nation-state.

Moreover, Ozkazanc-Pan (2019) argues that being included may not contribute to a sense of belonging for those who are participating in that distinct environment; therefore, the author proposes to analyse how individuals engage in "*meaningful and emergent ways of being and belonging in their personal and professional lives*" (p. 482). Even when making use of the surrounding food environment, individuals with a migration background may experience a cultural clash with the host culture's food practices, linked to the differences in food experiences (Visser, Bailey, & Meijering, 2014). Therefore, as argued by Ozkazanc-Pan (2019) it is crucial to acknowledge how belonging takes shape for individuals that make use of and live in the environment, which could contribute to shaping more 'culturally safe spaces' (p. 484).

Houtkamp (2015) proposes another alternative way of viewing inclusion, suggesting that a shift from national inclusion to transnational inclusion is necessary to acknowledge the shift to the new transnational paradigm. Transnational inclusion defined as "*the possibilities of cultural minorities to express their heritage culture across the borders of the nation-state*", is inevitable in modern times and denying it could lead to cultural tensions (Houtkamp, 2015, pp. 80-82). Based on Houtkamp (2015) and Ozkazanc-Pan (2019) articles, looking beyond the classical understanding of inclusion, as equal participation of members of society in a set nation, is key, especially in the context of food as shown by Brons (2022).

1.4.1 Sense of belonging to a (food) environment

As mentioned earlier, besides being significant from a nutritional viewpoint, food has the potential to serve as a medium for identity and (cultural) values (Brons, Oosterveer, & Wertheim-Heck, 2020; Hammelman & Hayes-Conroy, 2014). In their study, Lin, Pang, & Liao (2020) explored the identity and belonging experiences of Belgian Taiwanese immigrant women through their daily food practices, such as purchasing, cultivating, preparing, and sharing food. The study shows that home and ethnic foods play a dual role in the immigrants' homemaking by simultaneously supporting the connection of their prior and present lives and assisting the immigrants' construction of a sense of belonging to the new place, reducing their sense of loss (Liu, Pang, 2019, as cited in Lin, Pang, & Liao, 2020). Besides that, the source argues that home/ethnic foods can serve as a medium for immigrants to gain and maintain friendships and social contacts in the new society (Lin, Pang, & Liao, 2020).

The food environment plays a significant role in a migrant's daily livelihood, exposing one to challenges that go beyond finding culturally appropriate food. In a study by Coakley (2012), the experiences of Polish migrants with the Irish foodscape were investigated. Struggles connected to the Irish food environment surfaced insecurities like financial difficulties, language barrier and job-linked worries, while finding Polish products helped the responders to overcome the 'feeling of dislocation', increasing the sense of home (Coakley, 2012, p. 321). This shows that products from a home country can also impact the emotional state of an individual with a migration background (Coakley, 2012). The study also pointed out the benefits of the Polish migrants being exposed to a new food environment as it has increased the opportunities to try new cuisines (both the host country-based and through intercultural connections), enrich diets with new products, and reduce the upbringing influences on dietary choices; all transforming Polish migrant's food preferences and routines after moving to Ireland (Coakley, 2012, p. 322).

1.5 Problem statement

The increasing mobility in the modern age shapes our societies, values, habits, attitudes, as well as our food systems. Greater mobility fosters an ever more globalising food selection available in the food stores, resulting in progressively wide-ranging and internationalising eating patterns amongst the populations of countries like the Netherlands. Moreover, residents themselves carry a more and more varied set of preferences linked to food, which can be linked to the diversifying migration backgrounds, which have the potential to shape one's eating habits and food-related practices.

While the matter of creating an inclusive food environment has become increasingly popular in recent years, some scholars propose the idea that strives to go beyond inclusivity. Some literature proposes to view the food environment as continuously co-created and shaped by *all* residents through their daily food provisioning practices. In this research, the focus will be set on the individual experiences of the residents with a migration background who make use of and maintain their daily routines in a food environment. Exploring the individual and/or household experiences with leaving familiar food routines and becoming accustomed to a new food environment is at the centre of this study. Chapter 3.3 provides an overview of how the problem statement has been translated into this study's conceptual framework.

The study will be conducted in the food environment of Wageningen, a multi-ethnic municipality, and will map out the food assets used by the households with a migration background that reside within that municipality. By emphasising the routine everyday life of residents, a better understanding of the Wageningen food environment and its appropriateness in relation to the diverse cultural backgrounds of its inhabitants will be obtained. More information on the case study is provided in Chapter 3.1.

2. Theoretical framework

Food routines and preferences of individuals with a migration background and their ability to meet their needs in the existing food environment are the central points of the study. To investigate the individual's ability to realize the valued (or not) food provisioning practices, as well as the food environment's accommodation, the Social Practice Theory (SPT) with the Capability Approach (CA) are applied. While SPT is used to establish a practice-based perspective from which the research is executed, the CA supports the analysis of the interactions between the food environment and its users. The theoretical framework of this paper is based on the research designs of earlier published studies by Brons et al., (2020) and Visser et al., (2021) investigating the food practices of individuals with a migration background and families with low-income respectively, in the context of the Dutch food environment.

2.1 Social Practice Theory

To obtain a better understanding of the appropriateness of the food environment for households with a migration background, the social practice theory can be applied to determine the underlying nature of the household's routines, demands, and habits linked to food provisioning and their relation to the surrounding food environment (Walker, 2013). Situated across space and time, social practices are said to be a fundamental subject of social science, as social practices highlight the dynamics of the routine reproduction of everyday life (Shove, Pantzar, & Watson, 2012; Walker, 2013).

The SPT theory offers the concept of '*functionings*' that refers to a set of practices that a person may value doing or being, ranging from nourishment to being a member of a community (Walker, 2013; Sen, 1991). Functionings are the achievements of an individual that greatly differ per person based on contextual differences and individual wishes and needs (Sen, 1991). A person's well-being and achievements should not be judged merely by the characteristics of the commodities possessed and used to achieve the valued functionings, as the conversion of commodity characteristics into the achievements of an individual's functioning depends on varying personal and social factors (Sen, 1991; Shove, Pantzar, & Watson, 2012). This not only points to the significance of personal perception on the functioning performed but also to how social, cultural and broader settings (e.g., position within the family and society) determine the ability of one to pursue the functionings that are valued by them (Sen, 1991; Walker, 2013). Walker (2013) states that the individual's capability to achieve such functionings is the starting point of justice, as the successful achievement of the practitioner-valued functionings is the basis of a good life.

In this study, functionings are represented by both valued and not food provisioning practices. By taking the food provisioning practices of households as the central unit of investigation, and by studying them as performances, a deeper understanding of how practices are reproduced and shaped can be obtained (Shove, Pantzar, & Watson, 2012; Walker, 2013). Focusing on practices helps to unravel the predominantly practical characteristics of everyday life by highlighting the individual's role as a '*knowledgeable and capable actor'* (Giddens, 1984; Sayer, 2016; Brons, 2022; Shove, Pantzar, & Watson, 2012). A middle ground between structural and agency-centred approaches is established by applying social practice theory, as in the case of SPT the individual is deemed to be an expert in their daily life who behaves according to the established routines influenced by their socio-material context (Brons, 2022, pp. 117-120).

2.2 Capability Approach

The Social Practice Theory helps frame the subject of investigation, as it focuses on the functionings of an individual (valuable practices of being and doing). As discussed in the SPT chapter, a successful achievement of the practitioner-valued functionings is dependent on the capabilities of that person (Visser, Hutter, & Haisma, 2016). This corresponds with the theory presented in the capability

approach (CA) developed by Sen (1999). The CA can be used in assessing well-being and inequality based on one's capability to reproduce valued practices (Sen, 1999; Visser & Haisma, 2021). The key focus of the CA is "*to identify the possibilities of and the restrictions on people's well-being by studying the details of people's perceptions of the mechanisms which influence their freedom, as well as of their opportunities to achieve valuable functionings*" (Visser, Hutter, & Haisma, 2016). The CA excludes the ranking of functionings, as according to the approach everyone should have access to opportunities to execute functionings they deem to be valuable (Visser, Hutter, & Haisma, 2016). As introduced in the SPT analysis, valued functionings greatly vary based on one's understanding of well-being determined by their '*cultural meaning system*' (Visser, Hutter, & Haisma, 2016). Social and symbolic beliefs, together with opportunities to exercise certain practices alter the prospects of being a practice carrier (Shove, Pantzar, & Watson, 2012). By studying functionings one deems valuable together with one's capabilities deeper understanding of daily life opportunities and outcomes and how these unfold can be attained (Walker, 2013). When putting the CA approach in relation to valued food provisioning practices, the theory not only enables the investigation of the barriers that one may have to execute a practice but helps uncover the broader structural complexities in which the valued functionings are performed, thus revealing the intricacies of the food environment.

The successful achievement of valued functionings is dependent on an individual's true opportunities – the capabilities, which are moulded by internal and external factors (Visser & Haisma, 2021). Individual's endowments are composed of "*biology, knowledge and skills as well as the external environment including social, material and environmental factors*", which act as resources/instruments contributing to or limiting one's capabilities, such as financial means to enact valued food practices (Chiappero-Martinetti & Venkatapuram, 2014; Visser & Haisma, 2021). Endowments may also include political and cultural practices, habits, traditions, social values and norms (Chiappero-Martinetti & Venkatapuram, 2014), such as faith-based dietary preferences.

Looking merely at one's endowments fails to grasp the effect of a wider context of one's reality (Visser & Haisma, 2021). Therefore, conversion defined as external social and environmental characteristics, which either enable or disable the transformation of an individual's endowments into effective capabilities should be added to the analysis (Visser, Hutter, & Haisma, 2016; Chiappero-Martinetti & Venkatapuram, 2014). For example, lack of shop access or socio-cultural impositions restricting one's opportunities to achieve valued food practices (Visser & Haisma, 2021). Conversion factors are essential in understanding equality through recognising the contextual diversity of people's lives (Chiappero-Martinetti & Venkatapuram, 2014).

While one's capabilities shape the opportunities to achieve valued functionings, they alone are not adequate (Visser, Hutter, & Haisma, 2016). The agency of an individual is the driving force of human choice, pursuit and realization of functionings, which "*enables people to demand and achieve further freedoms allowing them to contribute both their own development and to that of their community*" (Visser, Hutter, & Haisma, 2016). Concurrently, existing capabilities enable the person to perform their agency (Visser & Haisma, 2021).

In the context of food provisioning, applying the CA can help identify the true opportunities for a person to achieve the food practices that they value and highlight the reasons behind the success differences (Visser & Haisma, 2021). According to Visser et al. (2016), endowments (e.g., preferences and available resources), conversion opportunities (e.g., political and cultural context) and agency shape a person's food choices. The study by Visser et al. (2021) that took place in the Northern Netherlands investigated the capabilities of families with a low income to achieve valued functionings that were translated in the study as fulfilling acquisition food practices. This study has shown that the underlying endowments that restricted the household's capabilities to ensure healthy or harmonious meals at home were financial constraints, health issues and access to knowledge. The social and cultural context (conversion) facilitated information obtainment regarding food and facilitated

support in food provisioning, while established cultural norms (endowments) shaped the eating habits of the family members (Visser & Haisma, 2021).

2.3 Food Access Dimensions

To complete the theoretical framework the food access dimensions are added to the analysis. The five food access dimensions listed below provide lenses through which the existing possibilities and restrictions to enact valued funcitonings within the local food environment can be analysed. To explore whether the food environment meets the food access needs of the city residents, it is suggested by some authors to divide the concept of food access into five food access dimensions:

availability - adequacy and presence of food outlets, the assortment of food items offered,

accommodation - fittingness of the environment to one's personal and community/cultural preferences and needs,

affordability - value and costs of food, consumer's perception of worth,

acceptability - individual's standards and attitudes towards the local food environment and products offered (e.g., food quality),

accessibility - the geographical location, proximity and opening hours. (Caspi, Sorensen, Subramanian, & Kawachi, 2012; Ginsburg, et al., 2019).

The following two sub-chapters introduce the accommodation (in *Chapter 2.3.1*) and accessibility (in *Chapter 2.3.2*) dimensions. The conceptual framework of the study can be found in Chapter 3.3, which provides an overview of how the SPT and CA theories and the food access dimensions are translated into this research design.

2.3.1 Culture-related capabilities

Valued functionings greatly vary based on one's '*cultural meaning system'*, which shapes the understanding of well-being and valued way of living of every individual (Sayer, 2016; Visser, Hutter, & Haisma, 2016). Koc et al. (2002) state that "*food choices, like various other cultural expressions and practices, offer insights on how we present ourselves, shape our identities, define our membership, and express our distance from others*". Access inequalities in resources and opportunities have an impact on the possibilities of an individual to enact valued ways of living (functionings) that are key for the sense of worth, well-being, self-respect and recognition (Sayer, 2016), including the access to culturally appropriate food for individuals with a migration background in the Netherlands, as discovered in the study by Visser et al., (2014).

Social and cultural hierarchies within a society shape the daily practices enacted by a population (Shove, Pantzar, & Watson, 2012). This echoes the notion that food choices within a confined space are shaped by the multiplicity of personal, collective, cultural, historical and economic contexts (Koc & Welsh, 2002). These hierarchies like food norms and dominant food choices create privilege for individuals through their ability to perform the valued social practices by means of participation (Shove, Pantzar, & Watson, 2012). This resonates with the notion that individuals lacking the means to participate in certain practices valued by the wider society are often subjected to social exclusion (Shove, Pantzar, & Watson, 2012).

2.3.2 Interplay of practices and the living environments

Practices are reproduced and conducted over space and time (Walker, 2013). Many practices, especially food-related, rely on the supply of products, tools and infrastructure (Shove, Pantzar, & Watson, 2012). Spaces shape a practice by providing resources and geographical locations, while simultaneously being co-created by repeated practices that take place in those spaces (Shove, Pantzar, & Watson, 2012). While spatial arrangements assist "*the intersection and the flow of moralities, cultures, economic resources, knowledge, power and relations of trust*", studies show that the design and operation of the urban infrastructure can construct access inequalities, altering the distribution

of social practices within a city (Shove, Pantzar, & Watson, 2012, pp. 85-86). Space, thus, the environment in which practice takes place moulds the capabilities of the individual's functionings. Spaces that enable a continuous enactment of practices can be referred to as '*viable practice spaces*' (Shove, Pantzar, & Watson, 2012).

Moreover, resources available to an individual often determine one's ability to escape spatial limitations and overcome unequal distribution of resources (Shove, Pantzar, & Watson, 2012). The spatial availability of resources can influence the sense of belonging to the city, neighbourhood and community (Stewart, et al., 2009).

3. Context and research questions

This chapter introduces the context of the case investigated in this study. Besides that, drawn research questions and the aim of the study are described, alongside the way in which the covered earlier theoretical framework relates to the attainment of the set research goals.

3.1 Case: Wageningen food environment

Wageningen municipality, located in the province of Gelderland, the Netherlands, has set goals designed to help the city work "*towards making healthy and sustainable food accessible for everyone in the city*" (WageningenEetDuurzaam, 2023). A Food Agenda 2021-2030 has been published, as a response to the growing awareness of the importance of food policy's contribution to the creation of sustainable and healthy cities (Sibbing, Bruil, & Hollenberg, 2021). The publicly shared ambitions focus on the pursuit of a healthy food environment, sustainable and local food production and sourcing, reduction of food waste, and the transition towards a more plant-based diet (WageningenEetDuurzaam, 2023). The Food Agenda 2021-2030 points out knowledge gaps that constrain a transition to a healthy and sustainable food environment in Wageningen. "*Lack of information about everything that happens in the city [Wageningen] in relation to food*" is stated to be a common thread based on the study (Sibbing, Bruil, & Hollenberg, 2021). This lack of knowledge about the food environment is stated to potentially hinder collaboration and development amongst residents and other actors (Sibbing, Bruil, & Hollenberg, 2021). The participation of resident groups with a migration background or with low income in food-related initiatives is also said to be limited. Moreover, the financial accessibility of healthy and sustainable foods is identified as a major barrier. Other challenges linked to land accessibility, policy domains and governance are indicated (Sibbing, Bruil, & Hollenberg, 2021).

In 2022, the number of citizens in the municipality of Wageningen has risen to 39,939 people, which equates to 22,877 households (AlleCijfers.nl, 2023). In the same year, 29.13% of all residents of Wageningen municipality had a migration background, 14.54% of which had a western migration background (residents with a migration background from countries in Europe (excluding Turkey), North America and Oceania or Indonesia or Japan) and 14.59% had a non-western migration background (residents with a migration background from Turkey, Africa, Latin America and Asia apart from Indonesia and Japan) (AlleCijfers.nl, 2023).

3.2 Aim, relevance and research questions

The thesis aims to contribute to bridging the knowledge gaps established in the Food Agenda 2021-2030.[2] This will be accomplished by investigating one of the identified gaps, which is the lack of overview of food-related activities and developments that take place on the premises of the municipality, especially within the lives of households with a migration background (MB) (Sibbing, Bruil, & Hollenberg, 2021). The study explores the Wageningen food environment, as a multi-ethnic municipality, and maps out the food assets used by the households with a MB. Through this, a better understanding of the Wageningen food environment and its appropriateness in relation to the diverse cultural backgrounds of households is obtained.

Similar to the study of Some et al. (2022), this research aims to contribute to the food systems planning approach by applying food asset mapping in Wageningen municipality, which has not been previously executed in the context of the Dutch food environment. A food asset map of Wageningen is designed by means of mapping out food provisioning locations of households with a MB, which can create a medium for further research.

Previous studies have shown that there is an apparent lack of citizen engagement in studies that employ the food asset mapping approach (Soma, Li, & Shulman, 2022). Therefore, this research

[2] Disclaimer: This research has not been assigned by the Municipality of Wageningen or any other actor.

paper investigates the citizens' perspectives on the surrounding food environment and its inclusivity, throughout addressing the participants' ability to achieve valued (or not) food provisioning practices in their daily routines. The study explores the ways households with a migration background navigate themselves in the local food environment of Wageningen municipality through formal and informal food provisioning. The focus is set on gaining a deeper understanding of the factors that play a role in food access of the households with a MB and other potential aspects that influence the households' food provisioning practices.

The main research question that the study aims to investigate is:

How do households with various migration backgrounds navigate themselves in the multi-ethnic food environment of Wageningen?

Sub-questions:

- *What food assets do households with various migration backgrounds make use of to access food in Wageningen?*
- *How do the households' capabilities shape their food provisioning practices?*
- *How does the cultural background of a household shape the perception of valued (or not) food provisioning practices?*
- *How does the food environment of Wageningen contribute (or not) to the households' achievement of valued food provisioning practices?*

3.3 Conceptual framework: Application of the theoretical framework

This research focuses on the food provisioning practices of households with a MB that make use of the food environment of Wageningen, through the lenses of social practice theory and the capability approach. Participants' perceptions and experiences linked to the factors that influence their freedoms to achieve the valued (or not) food provisioning practices in their living environment are put central. Therefore, the participants' perceived endowments and conversion factors, alongside their agency linked to food provisioning are explored. The findings are then analysed through the earlier-mentioned concept of food access dimensions (see *Figure 1*). As in the study of Visser & Haisma (2021), applying the suggested theories will help uncover the reasons behind participants' successful and failed realizations of valued food provisioning practices.

Similar to the approach taken by Visser et al. (2021) on 'fulfilling food acquisition practices', the definition of a valued food provisioning practices will vary depending on participants social and cultural values and context (e.g., purchasing culturally appropriate food; purchasing healthy food for an affordable price) (Visser & Haisma, 2021).

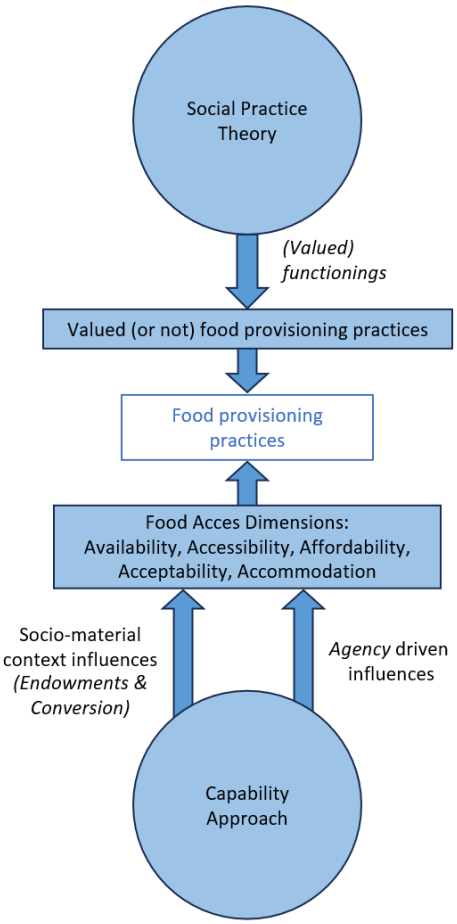


Figure 1. Conceptual Framework visualisation. Created by the author.

4. Methods

The following chapter will address the methodological approach utilized in the study, which is composed of several research methods, due to the exploratory nature of the study. Moreover, the chapter will shed light on the research population that agreed to participate in the study, the ways data was collected and analysed, as well as the matters of ethics and study limitations.

4.1 Food Asset Mapping Approach

A Food Asset Map from the perspectives of the interviewed households that live in Wageningen is designed by means of mapping out food provisioning locations. The community perspectives on the local food environment have been the central investigation point of this research. The map serves as an overview of the mentioned food provisioning locations, which enables further analysis of the complexities of household food-related practices in this research. The information on food assets was gathered through semi-structured interviews and a photovoice approach (see *Chapter 4.2*). The Food Asset Map was designed and realized with the means of My Maps a free-of-charge Google platform. The map uses colour-coding to group the assets into sub-groups like *Food service providers, Supermarkets, etc*. A simplified version of the map is presented in the *Results chapters*, which includes the most frequently mentioned food assets accompanied by images taken by the participants, with some exceptions.

4.2 Photovoice approach and semi-structured interviews

The photovoice approach was used in the study to visually document participants' daily routine of food provisioning (market or non-market-based) practices through photography (Turner, et al., 2018). The photovoice approach is a participatory research method developed by Wang and Burris (1997). This approach combines photography with interviews to share participants' lived experiences and knowledge (Wang & Burris, 1997). One of the main goals of photovoice is to empower the participants and to "*enable people to record and reflect their community's strengths and concerns*" (Wang & Burris, 1997), which compliments the set goals of the study, as it leaves room for the participants to share their interpretations of the food environment and their daily food provisioning routines through the pictures taken by them.

In this study, the photos were used to observe which food assets are used daily by the sample group. The visual data was used in combination with *semi-structured interviews* and was rather used as an '*interview stimuli*' (Boeije, 2010). Photo-elicitation is seen as an effective method to engage participants in the study process (Boeije, 2010). The researcher found that the photography '*assignment*' excited some participants, attracted some to the study and eased the communication between the parties.

The researcher had two contact moments with each household in the form of an introduction interview and a second exploratory interview, excluding the informal conversations and online dialogues linked to organizational matters (see *Table 1*). Interviews took place at the city library, local cafés, participants' homes, job offices and online. During the initial contact and the first interview, participants were informed about the use of photography in the study. During the introduction (first) interview, a verbal explanation of the photovoice approach (brief training) was given alongside the printed guidelines, which included instructions on the research method in question and privacy matters related to photography (see *Appendix 2* and *3* for the Research Handbook and Informed Consent Form). Privacy risks related to geolocation, identity privacy of the participants and other residents, or depiction of confidential life details, were discussed in the introduction interview, to avoid ill will (Soma, Li, & Shulman, 2022; Wang, Cash, & Powers, 2000). The participants were asked to take photos with their mobile devices for familiarity reasons. The use of phones increased the participants' likeliness to take pictures of their daily activities and simplified the sharing of the

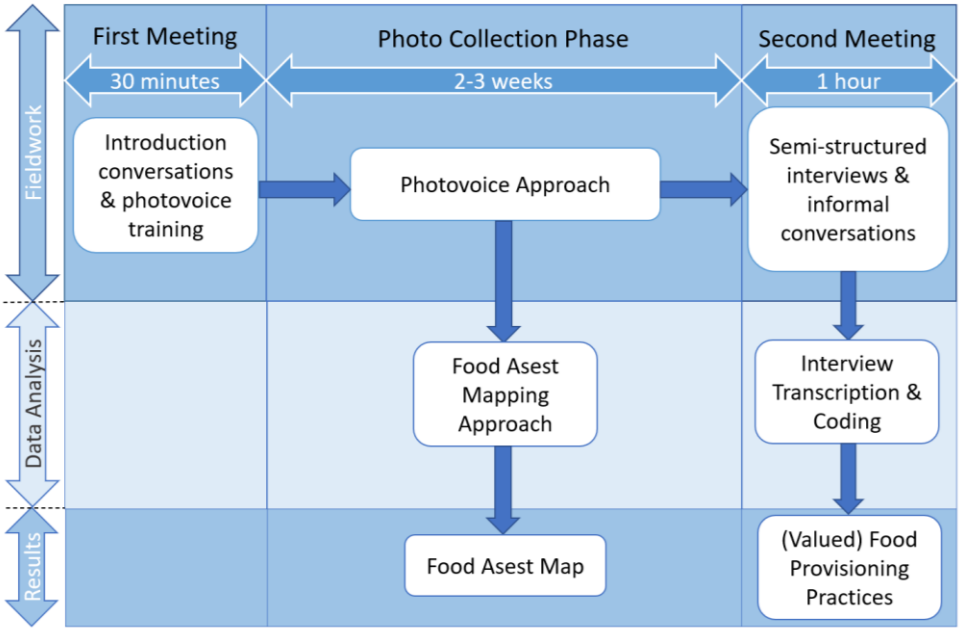
collected data. The option to provide single-use cameras was offered to every participant. The participants were asked to take photographs over the course of two to three weeks.

While the photovoice approach is commonly applied in combination with focus group studies, previous research by Castleden et al. (2008) and Soma et al. (2022) have instead incorporated in-depth one-on-one semi-structured interviews (Castleden, Garvin, & Huu-ay-aht First Nation, 2008; Soma, Li, & Shulman, 2022). Although semi-structured interviews are not entirely pre-structured, a guiding list of questions is advised (Boeije, 2010). In this study, the interviews were executed around a prepared list of questions grounded in the preliminary literature review, addressing the main objectives of the research (see *Appendix 4*). The questions were addressed in a flexible order, depending on the flow of the conversation. Space for topic deviation by the participant was granted. New topics mentioned like online grocery shopping, which were seen as significant were further elaborated on providing unanticipated results such as personal connections with shop owners. The flexibility of the semi-structured interviews helped to gain a deeper understanding of the food assets photographed and/or mentioned while shedding light on the overall relation of the residents to the food environment of Wageningen. The photovoice guideline, together with the interview guides can be found in the *Appendices* of this document.

Informal conversations played a significant role at the start of the study, as they provided a natural way for the researcher to communicate and build relationships with the (potential) interviewees through small talks and dialogues about (non-)related topics (Swain & Spire, 2020). Informal conversations were not recorded, as they were used as a means of allowing the parties (the participants and the researcher) to get more familiar with each other.

Additionally, to the executed interviews, one of the households (P2 & P3) has invited the researcher to join their Sunday afternoon grocery shopping. This unplanned *participant observation* has helped to confirm the activities and habits previously mentioned by the household and shed light on other details, such as the preference of Sunday grocery shopping, due to free parking in the city centre, which did not previously follow from the conversations. During the participant observation, the researcher focused on three elements discussed by Boeije (2010): what people do, what people know and what people create and use; which relate to the endowments, capabilities and agency concepts from the theoretical framework. The observation was documented in writing and coded alongside the interview transcripts, ensuring its incorporation into the study's dataset.

Table 1. Visualisation of methodological approach and data collection phases. Created by the author.



4.3 Research population

The researcher's network within the municipality was used to initiate a sampling technique called snowball sampling, which was appropriate due to the study's exploratory characteristics (Atkinson & Flint, 2001). Initial recruitment of participants was executed through the distribution of flyers (see *Appendix 1*) during the open-air market on Wednesdays and Saturdays. The network of the researcher was then utilized to increase the sample size of the study. The snowball sampling technique has assisted in the recruitment of six out of nine participants.

A group of seven to ten participants is suggested as ideal for the Photovoice approach (*Chapter 4.2*), in relation to the limited number (1) of study facilitators (Wang C. C., 1999; Palibroda, Krieg, Murdock, & Havelock, 2009; Soma, Li, & Shulman, 2022). Nine households participated in the study, which amounted to a total of thirteen individuals. In the interviews of three households both partners were present during at least one of the interviews. One participant (P6) brought their underaged child (P7) to the second interview, due to the scheduled parenting responsibilities at the time of the interview. The child was not interviewed directly and did not participate actively in the conversation but did voice (dis)agreement with their parent's answers, giving minor inputs based on their own initiative.

When this study took place, all members of the participating households resided within the premises of Wageningen municipality for over a year. Some households have lived in Wageningen for over twenty years, see *Table 2*. The sample of participants represents a diverse range of individuals with varying ages, genders, years spent in Wageningen, migration backgrounds, household sizes and parental status. There is an almost equal division of female and male participants while the age ranges from 27 to 70 years. Eight backgrounds are represented among the interviewed nine households covering several geographical regions of the world such as Southern Asia, South-Eastern Asia, Africa, Western Asia, Eastern Europe, Central America and Eastern Asia based on the United Nations geoscheme. One participant had mixed ancestry (Yemen and Russia). Two households were from Afghanistan and two were from Costa Rica. The repeating background came to be due to the employed snowball sampling technique. Participant 5 did not specify their country of origin but referred to a French-speaking country on the African continent. The household size (including the number of children), the number of years spent in Wageningen, and other general information received from the participated households can be found in *Table 2*.

Table 2. List of participants with general information. Created by the author.

Household	Participant	Years in Wageningen	Age	Background	Household size	Children living at home
1	**1**	>20	55	Afghanistan	4	2
2 & 3	**2**	22	47	Iran	3	1
	3	9	50	Iran		
4	**4**	19.5*	70	West Papua	4	3
5	**5**	4	-	A country located in Africa**	1	-
6	**6**	4	38	Yemen/Russia	1-3***	2
	7	-	<18	Yemen/Russia		Child of P6****
8 & 9	**8**	4	29	Costa Rica	2	-
	9	4	34	Costa Rica		-
10 & 11	**10**	17	27	Afghanistan	2	-
	11	1	27	Afghanistan		-
12	**12**	2	28	China	2	-
13	**13**	13	36	Costa Rica	4	2

* - Participant 4 first moved to the Netherlands in 1984 but then moved abroad for nearly 20 years. Recently they moved back to the Netherlands and came back to Wageningen.

** - Participant 5 did not specify their country of origin but referred to a French-speaking country on the African continent.

*** - The two children of Participant 6 live partly at P6 home and in the house of the other parent.

**** - The child of Participant 6 was present during the second interview but was not interviewed directly and did not actively participate

The presence of a history of relocation to the Netherlands during the lifetime of the interviewee was the main recruitment criteria. This specific criterion was chosen to avoid complexities linked to the dietary preferences of individuals with a second-generation MB. Besides that, a decision was made to attempt to evade individuals registered as students into the sample group since students' household structures, lifestyles, dietary patterns and budgets can vary significantly from other residents. At the time of the study, two participants were jobless for sick leave and pension reasons, while one participant did not indicate their occupation status. One household consisted of one working partner and one partner still finishing a master's degree. Although one of the participants had a student status during the period of the study, the household was included in the research due to the partners' long-term relationship, age (around 30), and independent living style in a household of two. Besides that, the single income stream of the household complicates the financial situation concerning food provisioning. Furthermore, only Dutch or English-speaking residents were recruited.

4.4 Recording and analysing data

Throughout the data collection, several documents were kept with the purpose of maintaining an overview of the research process. One document contained a detailed list of participating residents with a marked number of meetings executed for each informant since there were two meetings planned per interviewee. With the use of a voice recording device, the interviews were audio-recorded with the participant's permission, following the *Informed Consent* guidelines. The one participant observation executed was documented in writing directly after the observation took place.

Table 3. Examples of quotes from the study interviews and codes applied. Created by the author.

Social interactions and the Food environment	**Limitations**
Family and friends	*Lack of products / missing*
P1: "Occasionally I go to a friend of mine he has a garden. In the Wageningen Hoog occasionally. Yes, occasionally I pick up vegetables from there."	P2: "Iranian ingredients some vegetables cannot be made here. For example, if you find vegetables, you can make it yourself..."
P13: "Yeah. Yes. So normally for celebrations like whether it's a birthday or sometfhing else, it's, it's usually that we get together in a friend's house, whether it's our house or someone else. And then we, like, eat their usually in their summer will be BBQ like everyone else. I think in the summer, but if not, yeah, we just make food at home. We have a late lunch."	P4: "Yes fish and papaya, because we have a kind of papaya there, in Biak where I come from, Biak has a special taste of fruit."
Children	*Costs*
P4: "Because the children love Indonesian food and there you have a special kind of Javanese food, and they like it, so I like that too, so yes."	P3: "Here because of war it has also become more expensive. Compared to a few months ago. It has also become expensive here."
P13: "Restaurants. Not so much with kids, it's difficult to go to a restaurant and sit them and wait for them."	P4: "Here in the Netherlands, fish is more expensive than meat, yes."

A total of 18 interviews, two interviews per household, were transcribed and coded. *Open coding* was used at the start of the data analysis, which is a method applied when exploring the collected data that helped the researcher identify main concepts and elements, as well as start data conceptualization (Boeije, 2010). Both transcription and coding took place in Microsoft Word. Content that related to existing codes or implied a new code was highlighted in the margins of the transcript with the use of the 'Comment' function in Microsoft Word. A combination of deductive and inductive coding was used linked to the semi-structured nature of the interviews. Unplanned topics and answers fostered an inductive coding technique resulting in the appearance of unanticipated codes. *Axial coding* was then applied to determine dominant concepts and themes and to organize the codes into categories (Boeije, 2010). Nine categories were identified under which most major ones were 'Used and Mentioned Food Assets', 'Noted Aspects of the Food Environment', 'Adapting strategies', 'Feelings and Meanings' and 'Social Interactions and the Food Environment' (see *Table 10* in *Appendix 5*). *Table 3* provides examples of quotes grouped under two umbrella coding categories. During the *selective (theoretical) coding* phase a reassemblage of the categories was performed to connect these to the theoretical framework of the study (Boeije, 2010).

4.5 Ethics and limitations

4.5.1 Ethical considerations and confidentiality

It was essential for the researcher to gain consent from the participants about their involvement in the study. Through the *Informed consent* form, the researcher has made sure to communicate the nature of the data collection and the goal of the study and to ensure the privacy, confidentiality and anonymity of the participants (Boeije, 2010). More explanation regarding study methods was handed out in the form of a *Research Handbook*. The researcher has made sure to communicate to the participants that in case of their disagreement with the consent form, they are encouraged to question the form and give recommendations. Additionally, it was clarified that participants may withdraw from the study and revoke the collected by or with them data at any moment of the study.

Several sensitive topics were addressed in the study, for instance, the affordability of food available in Wageningen. Emotional topics, such as migration and feeling of belonging, also surfaced in the interviews. The interviewer made sure to have created a sense of trust and understanding prior to covering more emotionally charged themes. This was achieved by having several contact moments before the exploratory (second) interview and by placing such topics later in the second interview. Most importantly, the interviewer has repeatedly mentioned during the interviews that the participants can choose not to respond to any of the stated questions or withdraw their answers.

4.5.2 Study limitations

When talking about the limitations of the study design it should be mentioned that this study made use of visuals produced by the interviewees at the request of the researcher (Boeije, 2010). It must be kept in mind that "*pictures are merely productions of the photographer who operated the camera*", offering only a limited view of reality (Boeije, 2010). While photographs are frequently used in sociological studies, the scientific quality of research-based solely on visuals is often contested, due to potential manipulations but also the photographer's ability to (un)intentionally mislead the study. Therefore, this study made use of semi-structured interviews and participant observations. Moreover, the study is based on qualitative data analysis, which includes interpretations of the empirical data by the researcher, potentially leading to biased findings (Boeije, 2010). To confine this limitation, all interviews were recorded, transcribed and coded.

Lastly, the author of this paper has manually translated the used quotes in this document as most of the interviews were conducted in Dutch. Therefore, the potential for translation inconsistencies must be acknowledged.

Results

Prior to looking at how the Wageningen food environment supports and/or inhibits the daily (and/or valued) food provisioning practices of the interviewed residents, Chapter 5 focuses on drawing an overview of the currently used food assets indicated by the participants. Chapter 6 explores the details of household food provisioning practices by analysing the gathered results through the lens of the five food access dimensions.

5. Food assets used in Wageningen and the surroundings

Food assets shared by the interviewed residents are gathered and translated in the form of a Food Asset Map that can be accessed via this link. Several locations such as private gardens, places of family/friend/community gatherings and mealtime, locations outside of the Netherlands and online stores have been added to the online map on randomized locations. This has been done to ensure that these both formal and informal practices are not undermined, as they are a great part of household's daily food routines, as will be covered further.

To start, many food assets indicated on the map are referred to by multiple participants, which may be due to the city limitations, such as size, selection of food access locations, and personal (and/or cultural) preferences of the residents interviewed. Moreover, almost all households (eight out of nine) mentioned frequently visiting food assets located outside of Wageningen municipality like supermarkets, toko's[3], food service providers, farms and slaughterhouses.

Food assets that are most popular amongst the nine households are supermarkets with LIDL (9), Jumbo (7) and Albert Heijn (6) being most often used. The open-air market, which is open on Wednesday and Saturday is recurrently visited by all households. Toko's such as Ivan Market (5) and Zam Zam (5) are popular among the households. See *Table 4* and *Table 5* in the text and *Table 9* presented in *Appendix 5* for the list of food assets used by the households and the number of households that visit each specific location or partake in a mentioned food practice. These are visualised on the following page.

Table 4. The number of households that mentioned supermarkets, toko's and the market. Created by the author.

Type of food asset / practice	*# of households mentioned*
Supermarket	
LIDL	9
Jumbo	7
Albert Heijn	6
ALDI	5
Hoogvliet	4
Jan Linders	3
Action	2
Jumbo (Ede)	1
Toko's	
Ivan market	5
Zam Zam	5
Wageningen Markt	3
Toko Indrani	3
The Glorious One Tropical foodstuff	2
Lale market (Ede)	2
Amazing Oriental (Duiven)	1
Toko Nieuw China	1
Marhaba (Ede)	1
Safari supermarket (Ede)	1
Market	
Market	9
Fish stand at the market	1
Fries stand at the market	1

[3] The implemented in this study umbrella term 'Toko' will refer to Asian, Surinamese, Antillean, African, Latin American, Eastern European, Arab and other retailers that offer a wide range of culturally appropriate and cuisine-specific products. "Ethnic" is a term frequently used as a racial code and as a synonym for non-white (Joassart-Marcelli & Bosco, 2020), therefore, the frequently used and debated in academia term 'Ethnic stores' will be replaced by 'Toko's' in this study.

1. Colours around the picture frames indicate a subgroup: e.g., Red for supermarkets, Dark blue for toko's;
2. Numbers next to the food assets stand for the total number of participants that mentioned the food asset or practice;
3. The food assets located outside of Wageningen (or online) or locations, which cannot be made public, are not linked by a line to the map;
4. Pictures of Dominos, McDonald's and the Slaughterhouse Diepeveen Herveld B.V. are retrieved from Google Maps.

The list of food service providers such as restaurants, fast-food outlets, caterers, cafes, etc. is by far the most extensive category of food assets adding up to 24 different locations within and outside of Wageningen. The most frequently used are Domino's Pizza (5) next to the Wageningen bus station and McDonald's (3) located in Ede, a neigbouring city. See *Table 9* in the Appendices.

While formal market-based food assets are commonly used by all participants, more informal ways of food access such as eating together/sharing meals with family and friends are the next most popular food provisioning method. Six participants mentioned that they invite friends over or are invited for mealtime either on a regular basis or for special occasions such as (religious) celebrations. Receiving and/or sharing food directly with members of a close family and friend circle was mentioned by four residents.

Provisioning at local food producers and processors is a prominent subject for many participants. Three participants mentioned making use of gardens located within Wageningen city premises, which are either run by their friends, neighbours or other residents they do not know personally but have connections with through their network. One participant noted that they have their own garden which they take care of as a hobby (P6). Two households said to have herbal gardens. The gardens are enjoyed during the growing season. Slaughterhouses and butchers are the next most used types of local food providers, see *Table 5*, with one slaughterhouse in Herveld called *Diepeveen Herveld B.V.* being visited by three interviewed households. In total three farms and farm shops are visited but only by two households. One household stated to forage in their neighbourhood and only one other household made use of two different children's farms in the surrounding of Wageningen. The motivation behind participants' preference in making use of local food sources will be elaborated on in the following chapters.

Table 5. The number of households that mentioned types of food assets and practices. Created by the author.

Type of food assets / practices	*# of households mentioned*
Gardening	6
Getting food from a garden in the neighbourhood	3
Growing herbs	2
Maintaining a personal garden as a hobby	1
Slaughter house / Butcher	4
Diepeveen Herveld B.V. (Herveld)	3
Nature Butcher Keijzer & Van Santen (Natuurslagerij Van Santen)	1
Farm / Farm shop	3
Hoge Born Farm	1
De Hooilanden (Bennekom)	1
Kraats Eiren (Bennekom)	1
Children farms	2
Boerderij Hoekelum	1
Stadsboerderij Wageningen	1
Foraging	1
Collecting blackberries around the city	1

Online shopping and ready-to-eat food ordering apps, websites and Facebook groups were mentioned eight times with *Thuisbezorgd* delivery company being the most popular and used by three households. *To Good To Go* an application that lets you purchase unsold food that would otherwise be thrown away is used by two households. Two other online shops *Colhande Online Shop* and *Ochama* and one Facebook group called *La pulper Facebook Shop* were mentioned by two households, which were all used to buy culturally significant produce that is not readily available in Wageningen. More on online shopping and the importance of home-country produce in Chapter 6.1 and 6.2.1.

Several food assets where free food can be accessed were mentioned in the interviews. Two households mentioned Wageningen Mosque (*The Islamic Center Wageningen Foundation*) offers free meals during several holidays and festivity periods (P1, P10 & P11). Other two households mentioned that they appreciate spending time and enjoying the free coffee at coffee table the Hoogvliet supermarket. Other two said to occasionally receive free meals from their place of work – a catering company called *Food of Cultures*. One household receives food aid from the Foodbank (*Voedselbank Neder-Veluwe en Omstreken)*, and another household is part of the *Foodsharing Wageningen* group.

6. Household food provisioning practices in Wageningen

This chapter presents the findings of the study through the established conceptual framework (see *Chapter 3.3*). Valued (or not) food provisioning practices are analysed from the perspectives of the identified capabilities and agency influences of the participants that take place in and outside of Wageningen. The food provisioning practices are analysed through the lens of the aforementioned food access dimensions and are structured accordingly.

6.1 Food availability

To start with the analysis, *food availability* in Wageningen municipality will be put central. Food availability in the context of the food access dimensions refers to the adequacy of food outlets and the assortment of food items offered (Caspi, Sorensen, Subramanian, & Kawachi, 2012). When looking at food availability five residents specified to be generally pleased with the range of food outlets found in the city premises. This shows that their personal food preferences **(endowments)** can be *generally* met by the assortment available in the Wageningen food environment **(conversion)**:

> *P1: "That I can buy anything. If I want something, I can buy it. Except for a few products."*
>
> *P2: "We get a good feeling from doing groceries […]. That we simply can choose from the products. Yes, that's fine, good."*
>
> *P5: "No, I'm fully satisfied since I get what I want."*
>
> *P13: "[…] I find it very interesting how small town has so many supermarkets […]"*

The households deemed the availability to be adequate and some were even surprised by the amount of food stores available in a relatively small municipality. Five households that have lived in Wageningen for longer have noted specific changes in the food environment such as the opening of new and larger stores and the overall increase in the number of grocery stores in the last years. The rising number of grocery stores was pointed out by two participants to make grocery shopping easier and have made a wider range of products more readily available.

The topic of food availability was not a widely elaborated topic since all households agreed with the adequacy of food outlets. Particularly, the accessibility of the existing food outlets being satisfactory for most of the participants (more in *Chapter 6.5*). However, the food assortment linked to the availability of culturally appropriate food, affordability of products and/or the sufficiency of products that meet the households' standards (acceptability) were more reoccurring in the interviews. For example, when questioned about the food availability in the municipality Participant 4 answered the following: *"Yes, yes, yes, we have no problem of having a shortage of food. No, we get enough food from the food bank."*; showing the complexities of food availability in relation to affordability and other dimensions (more in *Chapter 6.3*). Moreover, it has been pointed out that many of the specific products that satisfy the needs of the households can be accessed in Wageningen if the household is willing to pay the price or find new ways of accessing such ingredients. The chapters that follow elaborate further on these food access dimensions.

Based on the interviews, the variety of products at the available suppliers also seems to differ at each supermarket, toko's, Saturday market, and others, providing a wide assortment of products with ranging qualities. Moreover, the availability of a good assortment in a store was frequently judged by the participants according to the presence of advertisements. Participant 1 expressed: *"For example, LIDL usually has good discounts and also good products, such as vegetables."*

The attitudes towards the availability of restaurants were polarized, with some households enjoying the accessibility and range of available eating-out locations (P4, P13), and others showing a dislike linked to the options available in Wageningen (P10 & P11), which shows the differences in

participant's **endowments**. While others said to miss specific locations like McDonald's others on the contrary said to be happy that they do not cater within the premises of the city (**conversion**):

> *P12: "I think first they should ask the KFC or McDonald's open their shopping in Wageningen. And others, I think, it's already quite good. I'm already quite satisfied with the situation."*

> *P13: "[…] I'm glad we don't have it (McDonald's) all here because otherwise I will eat less healthy because what things making you happy is usually the unhealthy ones. […] Like now, I think, more than a year ago, I don't go to a McDonald's. We don't have to go. We don't see it. But if you have those choices here, you will go more […]"*

Besides elaborating on how the food availability in Wageningen does and does not align with their preferred food practices, the interviewed households mentioned ways in which they go around and/or cope with the deficit of certain food sites or the lack of assortment **(agency)**. This includes increasing the availability of assortments through online grocery shopping (*see column 1*), making use of other available food assets such as gardens and farms (*see column 2 & 8*) or other ways mentioned in the following chapters, like commuting to other cities and even countries (*Chapter 6.5*).

1. Online grocery shopping

Participant 12 stated not to miss any culturally significant products, as they frequently made use of Ochama – an online store that offers and delivers a wide variety of Chinese, Japanese, South Korean and other products for a more affordable price than in the supermarket, as the participant described it. Besides ordering specific varieties of fresh produce attributed to the participant's cuisine preferences and other products like dumplings and seasonings (e.g., curry) that cannot be found in Wageningen, the participant purchases products that are more readily available such as potatoes and eggs, due to lower price.

P12: "So sometimes some food I can only buy from online. So, if I want to eat it immediately today or tomorrow, it's not possible. I always have to plan it like several days in advance to plan for that kind of meal."

Delivery time and availability of ordering slots are the main drawbacks of the Ochama app, said by Participant 12. When meeting a certain value of the package, Ochama delivers the products directly to the home of the costumer. The packages can otherwise be picked-up at several locations in the city. According to Participant 12, Ochama is highly popular amongst the Asian community of Wageningen.

Figure 2. Logo of Ochama online grocery store (Ochama, 2023)

Figure 3. Logo of Facebook group La Pulpería Latin American Market (Lapulperia.eu, 2023)

Figure 4. Logo of Colhanda online store (Colhanda, 2023)

Household 13 mentioned to make use of two online stores that sell Latin American produce, called La Pulpería Latin American Market and Colhanda. Traditional Costa Rican cheese and pasty, sauces (e.g., Salsa Lizano), and other products are ordered by Participant 13 through those online stores: *"[…] So, two websites and there I buy sometimes more out of like not that we needed for everyday cuisine like if you make a dish but more like sometimes to treat myself."*

2. Gardening

A way of sourcing fresh produce mentioned by the households was gardening. Three households (P1, P2 & P3, P12) have mentioned to buy or receive produce from their acquaintance's gardens, appreciating the freshness and the low costs of the produce. Participant 12 mentioned that the garden that the make use of sells vegetable varieties that cannot be bought in a grocery store, while overall having a limited assortment. Participant 5 said to have their own garden for recreational purposes, rather than for food provisioning: *"For fun, because you don't know if it will produce or not."*

Figure 2. Garden of an acquaintance of Participant 12. Photograph taken by P12.

Two households said to grow herbs like thyme and basil in their apartments for cooking:

P8: "[…] because we find out that if we continue buying the small dry spices they were not as good as the fresh ones. Plus, I love plants in general, so it was like, okay, if I can have alive the rest of the plants, I could have also this kind of plants."

Many participants have responded fondly about the idea of gardening and would have liked to be able to grow their own food. For example, Participant 13 expressed: "*[…] I think maybe when I have more time, I wish I have my own small 'tuin' (garden) […] But it's a difficult for now."* Others have said not to have the passion, time or space for it (P8 & P9) or said to have tried growing herbs but have failed at it (P12).

Besides gardening, one of the households forages blackberries in their neighbourhood. The gathered berries are then processed into homemade jam and enjoyed throughout the year. Connected to the idea of foraging and food gathering, Participant 4 mentioned to wish for the municipality to plant more fruit trees freely available for all residents in public spaces: *"[…] Why can't we just pick something to take home for the children or for us which is free from nature? In Papua you can do this [...]"* (P4). All the activities linked to gardening and foraging are seasonal (besides growing indoor herbs), which is a limitation mentioned by five households, thus limiting the availability of these food provisioning practices.

Moreover, the interviewed residents said to adjust their eating practices to the newly available selection of cuisines, eating norms and dietary preferences. Household 13 has mentioned to have experienced a shift in their dining-related norms after moving to the Netherlands. This was expressed through the no longer prevailing cultural norm of finishing the plate, which was indicated by the family as a greatly respected eating practice in Costa Rica. Now the family avoids overeating by keeping a balance. Household 8 & 9 said to have started to eat plant-based alternatives like "*tofu or this veggie based meat"* (P8 & P9) through their new vegan and vegetarian acquaintances. Other examples of the adjustment to new eating practices include trying new cuisines like Chinese, South Korean, Japanese and others at home, speciality stores and restaurants.

6.2 Food accommodation

The food accommodation dimension is described as the fittingness of the environment to one's personal and/or community/cultural preferences and needs (Caspi, Sorensen, Subramanian, & Kawachi, 2012; Ginsburg, et al., 2019). One of the main focuses of the study is to see what food provisioning practices are seen as culturally fitting and determine whether the local food environment meets the needs of the household's cultural values. This will be elaborated on in this chapter.

6.2.1 Home country cuisine

The interviewed households expressed a great affection for their home country's cuisine and products. For example, Household 2 & 3 clearly stated to prefer eating Iranian food over Dutch cuisine. Households from Western Asia and South-Eastern Asia said to base their diet largely on rice, which is a staple product in their home countries, and occasionally include other carbs like potatoes and French fries.

Generally, the households have said to be content with the variety of culturally fitting food present in Wageningen. Several households specifically mentioned appreciating the change in the food environment, as it has made them experiment with their diet and cooking and has allowed them to get accustomed to other cuisines:

> *P8: "Like before, I said that I miss a lot of things. But it's part also of the process of being outside of your country and adaptation is a thing that takes time. So of course, we are going to miss a lot of things, but we feel satisfied because we still enjoy new food that we found here. Also, the mix of cultures help us to meet new type of food. For example, with Chinese I know a lot of new types and we start doing them because we like it so […]."*

Household 13 mentioned the wide range of Latin and Italian products in Lidl supermarket, Household 4 mentioned finding certain Indonesian ingredients to be very accessible in regular supermarkets like Hoogvliet and Jumbo. The quality of some culturally specific products available in large retail stores like bread and basmati rice are disliked by four households but fitting replacements were said to be found in toko's. Toko's are referred to as the place go-to for international products by all the households that make use of them (*see column 4*). This showcases that the food environment overall enables the households to meet their dietary preferences **(conversion)**. Nevertheless, specific products were mentioned to be lacking in the food environment of Wageningen, which created dissatisfaction amongst the households.

Meat and fish

The significance of the incorporation of animal protein in a diet was pointed out by almost all households. As Participant 8 explained: *"I don't know if it is for a cultural thing or what, but we definitely need animal protein: milk, yoghurt, meat, even fish; like these kind of things."* Some pointed out the importance of red meat, while others preferred fish, depending on what is common in their cuisine. For example, Participant 4 who grew up in Biak, an island located near the Northern coast of Papua, spoke fondly about the freshness and quality of fish back home. Beyond cultural significance, fish is seen as a healthy food source by the participants who mentioned it (P4, P8). *Participant 8 stated: "[…] nowadays we sometimes have to eat like these pills with Omega because we don't complete the requirements, or yeah, we do like blood test, and we do not have these kind of requirements."* (More on nutrition in *Chapter 6.4*). Such eating preferences, values and norms can be categorised as the households' **endowments**.

Meat, which is stated to be of great importance and referred to as a "*cultural staple*" (P8) for the interviewed households, seems to be deficient in Wageningen. The households pointed out that they are most dissatisfied with the costs and quality of the meat available in supermarkets. The lack

of appropriate meat leads to the households not being able to recreate sentimental dishes linked to family or cultural heritage:

P8: *"Means that I cannot prepare the things that I used to eat in Costa Rica, not even once in a month. So, I miss a lot. […] because my grandma used to prepare for me, and I do it as a […] in a way to remember her or to remember my memories with her."*

This showcases that the external conditions (lack of satisfactory meat options in the direct food environment) inhibit a successful **conversion** of a significant food practice on a regular basis.

To overcome these limitations, Household 10 & 11 stated to opt for pork, eggs, turkey and chicken, instead of red meat, when doing groceries in Wageningen. When purchasing (red) meat, six households mentioned going to other locations, instead of regular supermarkets. These include toko's, butchers and slaughterhouses, which according to the participants offer a wider variety of meat, an overall better quality, and occasionally a lower price (in the case of toko's). Participant 12 mentioned that lamb meat is only available in toko's in the city. *See Column 3.* These ways of coping with the deficiency of appropriate meat products showcase the **agency** that the households are willing to execute to meet their needs.

Similar to meat, fish is also seen as overly expensive. One of the participants indicated that not being able to eat good quality fresh fish daily has been a challenging dietary shift and a cultural shock. Fish has become a luxury product for special occasions for Household 4. On regular days fish is substituted with meat, as it is cheaper. This shows the poor **conversion** properties of the Wageningen food environment concerning fish consumption preferences.

3. Butchers and Slaughterhouses

Through the interviewing process the toko's, slaughterhouses and local butchers appeared to be the preferred meat suppliers.

Four households (P1, P6, P8 & P9, P12) said to travel by car to other cities to reach slaughterhouses and toko's that supply meat of satisfactory quality and price.

Toko's and slaughterhouses are often chosen due to their (online) advertisements and deals. While they are seen as more affordable suppliers of meat (P1, P2 & P3, P6, P8, P12), the butcher *Nature Butcher Keijer & Van Santen* is more luxurious and is only visited by one household when good quality meat is required for a special event (P8 & P9).

Participant 8 considered butchers and toko's to source more sustainable meat than supermarkets. Toko's offer meat varieties that cannot be found in other stores or at the butcher (P12). Moreover, Muslim households choose certified Halal meat suppliers *(chapter 6.2.2)*.

Three households visited the *Diepeveen Herveld B.V. (Herveld)* slaughterhouse for varying incentives. Household 2 & 3 reasoned their purchases at the slaughterhouse in Herveld with their aspiration of buying freshly processed meat, Household 8 & 9 was motivated by a lower price-quality ratio, while Household 12 by the wider assortment of products (e.g., the availability of lamb meat).

Figure 3. Butcher aisle in a Toko. Photograph taken by P6.

Fresh produce

Participant households shred their dissatisfaction with the lack of variety and low quality of fresh produce in Wageningen, as affirmed by Participant 4: "*[…] We find those (plantains) tasty, but they are not fresh here (in toko's of Wageningen) [...].*" Fruits and vegetables grown overseas that were especially missed by the participants include specific varieties of African bananas and plantains, papaya, mangoes, pineapple, watermelon, melon, and types of lettuce; indicating limited **conversion** possibilities for the households to execute preferred by them food practices that include fresh produce.

Large retail stores had especially low reviews on the fresh fruit and vegetable quality, variety and prices. Participants 8 & 9 stated that they have stopped buying exotic fruits (e.g., pineapples), as the taste of the imported produce could not compare to longed-for taste from back home. The household mentioned the cost/quality ratio and high carbon footprint to be the deciding factors to avoid purchasing exotic fruits, even though they are a staple product in their home country cuisine (Costa Rica), arguing the following: *"We don't see the point of buying something that we are not gonna enjoy it at the end because we know how it is in another context."* (P8 & P9). Many dishes cannot be recreated, due to the absence of specific fresh ingredients, highlighting the limited possibilities for some households to execute their valued food practices (**conversion**).

Some households were more positive about the appropriateness of fresh produce offered in Wageningen, which points to the **conversion** factor, which varies based on food practices and habits valued by individuals (**endowments**). Toko's were commonly referred to as the best places to shop for exotic produce (e.g., cassava and plantains). Saturday market was said to also sell exotic fruit. The presence of green bananas originating from one of the household's homelands was very unexpected and pleasant for Household 13.

> *P13: "I will not say that I don't feel unwelcome. Like I think I'll, actually, it's (Wageningen food environment) very if I want to say inclusive because you find products from everywhere like.* […] *It's already very welcoming."*

Three households mentioned that while they miss the fruit and vegetables they grew up with, they try to look at the positives and enjoy the varieties that are sold here, which are not available in their homeland. Three households mentioned experimenting with produce that closely resembles the traditionally used vegetables or fruit to make home country recipes. For instance, while Iranian and Yemeni products are not widely accessible in the Netherlands, Arabian, Turkish and Syrian products are more common and affordable in toko's, which are used as substitutes by some households. Households display **agency** by consciously adapting their food practices to the environment, as well as by finding alternatives for the preferred fresh produce.

Specific products

Another example of the ways the households cope with the lack of certain products in Wageningen and/or the Netherlands is the practice of bringing specific food ingredients from home countries or asking friends to do so, such as dried spices, dried fruit, sauces, etc. *(More in Chapter 6.2.3)*. Participant 5 travels to Belgium to purchase food imported from their home country, as it is not available in the Netherlands. Additionally, to importing products, households modify products available in Wageningen to fit their taste. Furthermore, households make traditional recipes (e.g., Iranian carrot and fig jam) with locally bought ingredients. Through this, they continue to incorporate traditional flavours in their diet, which are not readily available in the food environment. Besides looking for more diverse and culturally appropriate food products in the city, several participants have mentioned making use of online grocery stores. All these **agency**-driven practices are motivated by the need to access specific valued products.

Restaurants and eating out

Restaurants that cater to specific national cuisines offer a place for some households to access the food that they grew up with. Being able to eat a specific Indonesian dish seemed to be of great sentiment for Participant 4 and their children, as the family is not able to recreate this dish at home.

> *P4: "Because the children they love Indonesian food and there (Indonesian restaurants in Wageningen) you have special type of Javanese food, and they (children of Participant 4) find it delicious, so I also find it tasty." (More about the relation of family and food in Chapter 6.2.3).*

Besides two Indonesian restaurants other places located in Wageningen were mentioned by the participating households like Alibaba, My Asia, Watami, Eastern Express and Food of Cultures. It is important to note, however, that restaurants with ethnic cuisines are not the only ones visited by the households. Three households said to go to restaurants as a part of their leisure activities (*see Chapter 6.2.4*). Not all households make use of restaurants, due to varying reasons such as costs or lack of habit. The limited variety of Halal restaurants in Wageningen is covered in *Chapter 6.2.2*. This shows that restaurants create the opportunity for some households to enact the valued food practices, however, this is not the case for all participants linked to various reasons (**conversion**).

To access culturally appropriate restaurants and street food three households mentioned commuting to other cities like Ede (for Shabu Experience Ede a Chinese restaurant – P12), Amsterdam, Rotterdam, or even Brussels, in Belgium, as mentioned by Participant 5. This again showcases how some participants execute **agency** by commuting to reach culturally valued food.

6.2.2 Religious reasons

Several households that participated in the study followed religious confessions. For households that are Muslim, it is of high importance to consume food according to their religious codes. Activities of importance, such as participating in religious days or celebrations like Ramadan and Eid al-Fitr with family and friends, joining and contributing to meals at the local Wageningen Mosque and eating culturally fitting food were mentioned. Halal food was mentioned to be of great importance for the interviewed Muslim households, as confirmed by Participant 10: *"We are Muslims, so we must have halal meat."* Religious reasons shape the food practices of some of the participants (**endowments**).

Participant 10 mentioned the great effort that goes into checking for Haram (non-Halal) ingredients in processed food, such as candies and sauces, in which unexpected ingredients like gelatine or alcohol can be found. Toko's were referred to as the main source of Halal meat products in Wageningen. While some stated to be more or less satisfied with the Halal option present in the city, others said to dislike the meat assortment: "*Not really enough but okay*" (P1). According to those households, the Halal meat available in Wageningen is expensive. One of the participants found a lack of restaurants accommodating Halal dietary restrictions, being left with Halal street food vendors, as the household's only options. All this points to the limitations the interviewed Muslim residents face when trying to follow a Halal diet in the Wageningen municipality (**conversion**).

Though the local food environment does not fully meet the needs of Muslim households in Wageningen, the households find unconventional ways to go about this issue (**agency**). All Muslim participants mentioned making use of slaughterhouses and butchers located outside of Wageningen (*Column 3*). One participant closely follows online advertisements (via Facebook) of a butcher located in a toko in Ede (Safari supermarket), where they buy Halal meat in bulk, which lasts the household for two to three weeks. For that household, it is a common practice to buy meat in bulk together with other families and to reduce the overall cost *(see Chapter 6.3).* Besides that, Participant 10 mentioned opting for vegetarian or vegan products like candies or meat alternatives in grocery stores, when Halal products are not offered, stating: *"But it's not that we are vegetations, it's just because we are allowed that (Food that is not Haram)"*. When going out to eat in Wageningen with friends or colleagues,

Participant 10 mentioned ordering fish-based or vegetarian dishes, to avoid the risk of consuming Haram food.

4. Toko's: Asian, Arabic and African supermarkets

All nine interviewed households made use of toko's in Wageningen. Participants 1 and 2 & 3 who lived in the city for a longer period stated that there are more toko's since when they first moved to the city. Visiting toko's is a part of the shopping routine of *all* households. While the opinions on the quality and freshness of products are debated, a great variety of international produce for reduced prices is marked as an outstanding trait by all participants. In Figure 11 Participant 1 has intentionally highlighted the price of carton of eggs, which they then referred to during the second interview.

> *P2: "[...] Also Syrian or Kurdish or Arab shops. We sometimes go shopping at those. Because some products are cheaper there. Different quality and also more assortments."*

Almost all toko's visited (both in Wageningen and outside) have a butcher section in the store that is frequently made use of by some of the participants (*Column Butchers and Slaughterhouses*). Some of these grocery stores share online advertisements on Facebook pages followed by Participants 1 and 2 & 3. Some families prefer shopping at toko's located in other cities, either due to advertisements, generally lower prices or product range.

Moreover, clients create personal connections with the toko's shopkeepers with whom the client can have a chat with and can even bargain to get a discount. This also further helps to expand the household's networks within the city (*See chapter 6.2.3*).

While Wageningen does not have toko's that fit all the interviewed participants' backgrounds, the general opinion about the available toko's is following: *"At least we have got enough even from the exotic shop. You cannot get everything, but you get at least some other things some other products you want. So it's really, it's really nice."* (P5).

None of the households, however, exclusively visit toko's, as all mentioned frequently going to supermarkets.

Figure 75. Fridge with dairy products in a toko. Photograph taken by P6.

Figure 6. Fresh produce assortment at a toko's entrance. Photograph taken by P1.

Figure 4. Eggs and their price (added by P1) in a toko. Photograph taken by P1.

Figure 10. Toko's shopkeeper and the entrance to the shop. Photograph taken by P1.

6.2.3 Sharing food and social eating

Family, children (*column 5*), friend groups and communities were reoccurring topics valued by the households (**endowments**). These matters were simultaneously intertwined with the topics of food provisioning and consumption in the interviews, through dietary preferences, celebrations, sharing and receiving food, grocery shopping, etc. The range of family situations was diverse, as some had their close relatives living in the city, while others were in Wageningen all by themselves. Some

5. Children

Children play a significant role in shaping food provisioning within a family, based on the executed interviews. Even in the household in which children have reached adulthood and moved out, they still were partially included in the food provisioning routine of household P1. Parents in Households 2 & 3, 4, 6 and 13 adjust the family's dietary choices based on the preferences of the underaged children:

> *P4: "[…] Sometimes they ask me: Dad do you get Javanese food […] Sometimes I get cola or something for the kids if they really want".*

Moreover, children direct parents towards new or non-traditional products at stores or food shops (P2, P6):

> *P2: And yes, sometimes sushi (name of the child) finds it tasty […] Sometimes for (name of the child) McDonalds.*

Food locations that provide entertainment for children are often opted for like children's farms (petting zoos), pancake houses, BBQs with other families, and ice cream shops. While regular eating-out spots become hard to visit: "*[…] It's difficult to go to a restaurant and sit them (children) and wait for them."*(P13). Additionally, the dietary properties of the kids' menus became a concern for Participant 13.

The process of grocery shopping, planning for meals and dinner times are adjusted to the children. Parents of Households 2 & 3 and 4 opted for doing groceries on their own. While food shopping together with children for Households 6 and 13 became a fun learning practice and bonding experience. One of the parents specified that they wanted to pass on their family's baking heritage, which they tried to achieve by involving the kids in the process in a playful manner:

> *P13: "Basically, I really enjoy baking and it's one of the things that I got from my mother and my grandmother, so I try also to […] to pass this on to my kids so baking is very fun."*

Families said to take part in new celebrations and traditions (e.g., Father's Day and birthdays) around which food practices like going out to eat or baking a cake are formed and maintained. Parents from Household 13 improved their diet to set a good example.

Figure 11. Doing groceries with children (1). Photograph taken by P13.

Figure 12. Baking cake with children. Photograph taken by P13.

Figure 73. Doing groceries with children (2). Photograph taken by P13.

households appeared to have a wide range of friends and acquaintances, with whom they share their experiences, while others seemed to still be in the process of finding connections in their neighbourhood. Three households saw the research, as an opportunity to get to know a new person (the researcher) in Wageningen. Two households stated that with age some connections with old friends have faded, contributing to their lack of connections. Participant 5 specifically mentioned to know of a bigger community from their home country in Brussels and other larger cities in the Netherlands, which they miss in Wageningen.

> *P5: "For example, I told you in Brussels is a beautiful big community from where I'm coming from. Then people run the business because they have many customers. That's the difference."*

The food environment of Wageningen has shown to enable the households to partake in important family and community-related practices (**conversion**). Restaurants and cafés are examples of spaces where the households said to spend time with their nearest. The coffee table in Hoogvliet supermarket was marked by two participants as a pleasant place to spend time with friends: *"[...] you can sit there, yes, cozy and sometimes you meet other people that chat with you and there is coffee, which is free and there you can just read some magazines."* (P5).

Getting invited to a family or a friend's house for dinner or hosting a dinner is a normal practice for most families. Eating together is seen as an excuse to meet and spend time together. Sharing meals is done *"for quality fellowship"* (P5). Linked to the rising food prices, "going Dutch" (sharing the costs of the meal equally) or having potlucks have become ways for two households to help reduce the costs of gatherings: "*Because otherwise it would be too expensive for me to buy drinks and snacks." (P10).* This shows that affordability is a playing factor, which is further elaborated on in C*hapter 6.3*. Generally, eating together with family and friends is seen as a bonding experience rather than a way to reduce costs, but some households are aware of this benefit. Celebrations ranging from birthday parties to religious gatherings at the Mosque of Wageningen (*column 6*) have been mentioned by several of the participants as a reason to gather. Participants 4 and 6 said to rarely eat with others, besides their direct family members.

6. Places of worship

As mentioned in the chapter on Religious reasonings, The Wageningen Mosque plays an important role in the lives of the interviewed Muslim households. It is a place for payers, community gatherings and celebrations (P1, P10 & P11).

Free dinners are offered during festivities at the Mosque, which are supported by community donations or food contributions, which individuals from the local Muslim community and the nearby refugee camps join (P1). Such dinners are mainly joined by men (P10).

Besides sharing experiences, like going to a traditional Dutch pancake house or hosting dinners, households have mentioned other ways they share food. Household 10 & 11 said to receive some products like rice and meat from their parents, as the elderly buy food in bulk to get a hold of the preferred products and reduce costs. The same household returns the favour by buying meat for the elderly, whenever they go do groceries in the neighbouring city. The practice of bringing or receiving food from the home country is also a common way of sharing food among the participants:

> *P8: "I received a lot of food from friends that they, for example, we have friends from Costa Rica. They used to bring food from Costa Rica like chickpeas."*

Some food provisioning locations are made use of indirectly by the interviewed households through their friends and family. For example, Household 8 & 9 said to receive food from their friends who are part of the Food Sharing Wageningen initiative:

> *P8: "Oh, we also sometimes receive from the food sharing. We receive from our friends that they are part of the group. Sometimes we help them picking up as well or just sharing what they pick up. That's nice."*

Another example is the private garden that Participant 13 heard about through their friends, who shared the vegetables with the interviewee, before they started going to the garden herself. Furthermore, Household 2 & 3 lives in a cohousing where some products like potatoes are shared by the residents. In this cohousing, a communal herb garden and berry bushes are maintained, which are made use of by the interviewed household. These examples illustrate how households through sharing food with their family, friends and acquaintances contribute to maintaining relationships in the municipality. Besides that, personal connections facilitate access to limited products, community bonding, sharing knowledge around the topic of food and even reducing costs. Households' active participation in social activities related to food showcases their **agency** to expand and deepen their experience of the local food environment.

In the *column 4*, an example of how the local food environment enables the households to meet and connect with other residents was given (through the maintenance of personal connections between shop owners and customers). Another example of a similar interaction is Participant 8 referring to the farm employees at De Hooilanden in Bennekom as a friend. Participant 5 shared that they heard from others and had themselves felt mixed attitudes towards the introduced self-scanning stands at the supermarkets, as it limits human contact with the cashiers. Besides sharing moments with food suppliers, meeting old acquaintances at a store or striking up a conversation with someone new was mentioned by several households, as a pleasant aspect of grocery shopping in Wageningen. This demonstrates that the Wageningen food environment not only serves as a medium for interpersonal communication for the participants but also creates opportunities for the households to socialize outside of their established network.

6.2.4 Leisure activities

Leisure activities encompass a range of personal and cultural preferences, needs and values, and are often adjusted to the surrounding setting. Besides previously mentioned family and friend dinners and celebrations, other ways of spending leisure time connected to the food environment are listed in *Table 6*.

Generally, the listed leisure activities mentioned by the households are accommodated by the food environment of Wageningen. Nonetheless, there is some previously mentioned discontent in terms of eating-out options. Household 8 & 9 said to lack "nice restaurants to have breakfast at" and "nice restaurants for young people", compared to larger cities, while Household 12 shred their dissatisfaction with the lack of fast-food chains in the city. Moreover, the affordability of eating-out options played a role in the level of satisfaction (*Chapter 6.3*).

To overcome the mentioned constraints of the gastronomic environment of Wageningen, households commute to other cities to partake in food-related leisure activities (*see Chapter 6.5*), such as going out to eat (indicated by six households) and visiting children's farm cafes mentioned by Participant 13.

Table 6. Food related leisure activities mentioned by the households. Created by the author.

Food related leisure activities mentioned by the households
Eating out at restaurants, fast food and cafes is mentioned by all households, besides P1;
Eating at restaurants or doing groceries at places that offer beloved cuisines like South Korean and Japanese (P10, P12);
Ordering ready-to-eat food from the online platform Thuisbezorgd (P13);
Walking around the market (P2);
Drinking coffee and spending time with people at the coffee table at Hoogvliet (P4, P5): *P5: "[…] some shops we find even some coffee, some tea to drink. There's a chair for you to relax it, please, if you want. So yeah. Now whenever I am going there with my friend, you can just go sit down and then have a cup of tea and then we talk a little bit and then we go shopping and then, perfect.";*
Gardening (P5);
Making and drinking coffee (P8);
Grocery shopping with children (P13);
Visiting children's farms: *P13: "Because, yeah, again, you can sit down, have a coffee. And while they are playing or looking at the animals and so on.";*
Eating fast food (P2 & P3, P4, P13);
Getting ice cream (P13);
Buying traditional products (P13);
Preparing traditional dishes (P10 & P11);
(Grocery) shopping in other cities (P2 & P3).

6.3 Food affordability

In modern-day society, financial income is a key instrument in facilitating a good life, which supports the capabilities and the achievement of valued functionings of an individual (Walker, 2013). Inadequate financial capacity has the potential to limit people's participatory pursuits, restricting their capabilities to build and maintain social ties and fostering a sense of belonging (Stewart, et al., 2009). In practice, however, access to money does not always guarantee access to participation (Sayer, 2016). In this chapter, *the affordability dimension* will be analysed from the perspective of value and costs of food and the participant's perception of the worth of products (Caspi, Sorensen, Subramanian, & Kawachi, 2012; Ginsburg, et al., 2019).

Households' financial situations and the relation to food provisioning differ within the study group. Some find it of great importance to eat healthy or tasty food and, thus, pay the price of such foods. Others, due to personal circumstances must strictly manage their grocery allowances or do big groceries according to the payday: "*The costs, it depends on whether I (P10) just received my salary or not, if (P11) gets his salary, then we usually go grocery shopping."* One household receives food aid from the local Foodbank. Three households said to want to go out to eat more frequently but cannot, due to financial reasons.

In the interviews, the households were asked whether they considered themselves doing financially smart groceries or budgeting in their daily food provisioning. All households said to be more conscious about their spending since they have noticed the increase in food prices, however, the significance of this matter seemed to differ (see *Table 10 in the Appendices*). When comparing the monthly expenditures of each household with the matching '*Normbedrag',* which is the amount of savings that one should not have more than to be able to be eligible for food aid in the Netherlands (VoedselbankenNederland, 2022). Five households show to spend less than the set '*Normbedrag'* on their groceries per month, while three spend more (Participant 5 did not share their monthly costs). This shows that some households, indeed, are very conscious about the financial aspects of food provisioning, as their monthly expenses are lower than the set '*Normbedrag'*.

> *P8: "And definitely we feel that nowadays it's more and more expensive because if we look back, we used to spend like €130 […] each 15 days. And nowadays it's like 160 almost per time and we are buying much more less than we used to."*

This quote and the earlier paragraph exhibit that the **endowments** of households that are represented in the participants wishes to be able to afford specific types of food or groceries in general are not fully met in the food environment of Wageningen. All households have noticed the inflation impacting the food prices, regardless of their financial situation: *"Now because we are in an economic crisis, the products are more expensive, compared to a few years back."* (P4). The experiences of the households

Table 7. Food items and food provisioning places that are perceived as expensive by the participants. Created by the author.

Expensive products	**Expensive places**
Fresh and organic vegetables (P1)	Albert Heijn (P1, P, P8 &P9, P10 & P11)
Basmati rice (P1)	Odin (Organic shop) (P1, P2 & P3, P12)
Meat (at all shops) (P1, P9)	Restaurants
Iranian products (P2 & P3)	Zamzam (P3)
Healthy products (P5)	Hoogvliet (P4)
Cheese (P9)	Jumbo (P9, P13)
Fish (P4, P8),	SPAR (P6, P8)
Exotic fruit (P8)	Nature Butcher Keijzer & Van Santen (P8)
	Ordering online (P10)
	Jan Linders (P12)

seem to vary, as some said to experience stress, while others said to still find sufficient affordable food in Wageningen: *"[...] I don't experience any stress, but I am aware that I have to do my shopping smartly."* (P10).

In *Table 7*, products and food locations that are mentioned by the participants as expensive are listed. The experiences of food locations being expensive differ per resident. An example of this is Albert Heijn supermarket, which has been referred to as very expensive by several households. On the contrary, Household 4 expressed the following: *"I read a lot here and there that Albert Heijn is now the cheapest. Yes, so that's why I go shopping there every Saturday."* Moreover, location preference showed to be connected to other reasonings like feeling welcome and free, which is further elaborated on in *chapter on Food Acceptability (6.4)*.

The interviewed households have all mentioned ways in which they attempt to reduce the costs of groceries. Becoming familiar with the food environment and gaining experience in the pricing of the local food providers are characteristics that the households share, as all the interviewees had much to say on the topic of food affordability in Wageningen: *"And for specific things, for example, I know that seafood is more cheaper in ALDI."* (P8). The practices mentioned by the households that help to reduce food expenses include buying in bulk, comparing prices of the shop assortments,

7. The open-air market

Used by all participants the market is open on Wednesdays and Saturdays and offers an array of produce from nuts and sweets to dairy products and ready-to-eat food. Most households mentioned buying fresh produce at the market, while households 12 and 13 said to also visit the French fries and fish stalls. Some stands on the market offer exotic fruits and vegetables like mangoes, pineapples, and avocadoes for more affordable prices, which are appreciated by the households (*see Chapter 6.3*).

The market is pointed out by the households, as an overall cheaper source of produce: *"[...] we always get fruit there (at the market) and, for example, a bag of avocado there is €2 and then you go to Albert Heijn or other place - two pieces for €2, you know?" (P10)* Nonetheless, the local farmers' stands were pointed out by Participant 6 to be generally more expensive. The closing hour discount is known by all households: "*On Saturday go to the market to get some fruit which are cheaper, especially in the closing hours." (P5)* The reduced costs are connected to the lower quality of the fresh produce. Households 6, 10 & 11 and 12 complained about the short shelf life and reduced quality of vegetables and fruits bought at the market. The limited opening hours of the market seemed to be not as convenient for Household 8 & 9.

Figure 14. Oranges sold at the market. Photograph taken by P10.

Figure 158. Discounted avocados sold at the market. Photograph taken by P10.

Figure 16. Fruit sold at the market. Photograph taken by P10.

Figure 179. Discounted vegetables sold at the market. Photograph taken by P10.

bringing (cheaper) products from other cities and countries, buying goods that are advertised and substituting expensive products. Having a set shopping routine, planning and timing the grocery shopping also helped the household to reduce the costs. Limiting certain practices, budgeting, and lending money were also noted by the households. Other practices that helped save money were sharing food, working in the food sector and receiving food from the Foodbank. Making use of more affordable food suppliers than supermarkets like the market (*see column 7*), toko's, gardens, and certain farms in the area were mentioned by all households:

> *P12: "Go there because it's very super cheap. Okay, like in a supermarket like 1 egg is more than 20 cents but there is like 0.16, and also the eggs are bigger than what I bought in supermarkets."*

Preserving and/or processing food and advance meal prepping were other **agency** driven cost-saving practices done in the homes of the interviewees. *Appendix 6* offers a list of adaptive practices mentioned by the households.

Some practices were referred to as more pleasant than others. For example, Participant 8 said to miss going out to eat, while seeing the necessity of restricting such expenditures. Meanwhile, Participant 5 said to *"[…] feel very happy because you got the thing at the cheaper price"*, as finding and buying advertised products helps him to save money, which is one of their mentioned values. The listed practices are not always followed by all households, since treating themselves to something more expensive, like eating out, etc., is of importance for many participants.

Figure 11. Discounted soft drinks and juices offered at LIDL supermarket. Photograph taken by P10.

Figure 10. Discounted blueberries offered at Alber Heijn supermarket. Photograph taken by P10.

6.4 Food acceptability

Food acceptability dimension covers the individual's standards and attitudes towards the local food environment, its characteristics and the products offered (Caspi, Sorensen, Subramanian, & Kawachi, 2012). Some of the noted feelings and aspects that were found in the Wageningen food environment were calmness, uncrowdedness, and feeling of ease and freedom: *"When I enter (Albert Heijn), I just feel a little freer than in the others (grocery stores)."* (P4). The feeling of safety was mentioned by four households: *"I feel safe in terms of healthy food because I feel that Wageningen has plenty of options, even options that we don't know yet."* (P8). A general acceptance and satisfaction with the Wageningen food environment partly come from the accommodation of many leisure activities (*see Chapter 6.2.4*) and the generally sufficient variety of food suppliers, assortments offered, and food services within the municipality (*see Chapter 6.1*): *"Yes, everything is fine, yes, I can find everything, I can cook everything, I can make everything. I have no troubles."* (P6). Mostly participants described the practice of doing groceries as enjoyable and fun, and while Participant 12 agreed, they also mentioned finding it difficult to make purchasing decisions with the wide selection of products.

Most of the households deemed the Wageningen food environment as welcoming. Four households stated to have gotten accustomed to Wageningen and feel at home, regardless of the changes in the food environment that happened over the years. The feelings of being welcome or not were mostly allocated to specific food assets, conditional to their assortment, prising, accessibility and quality, and not to the entirety of the food environment. Household 8 & 9 mentioned experiencing the need to adjust their eating behaviour to the surrounding environment and through that feeling less welcome. For Participant 10 feeling of welcomeness in a food environment was related to the friendliness of the employees. Participant 12 said not to find it important. This paragraph shows how households experience the **conversion** of their **endowments** in the Wageningen food environment.

6.4.1 Food quality and taste preferences

All households mentioned that the quality of food available in Wageningen cannot compare to the food quality available in their home countries, emphasized in the case of fresh produce, meat and fish. Even when available, the quality of produce seems to be lower, allegedly due to transportation and storage duration. As mentioned earlier, toko's, slaughterhouses, and butchers were commonly preferred in the context of quality and price ratio to the supermarkets for four of the participating households. Like quality standards, taste preferences differed per household referring to their home country's products and cuisine as most delicious, see Chapter 6.2. Besides that, other foods like sushi and falafel were marked as delicious by some households.

The interviewees gave contrasting opinions when zooming into specific cases. Households' opinions differ on the topic of fresh produce quality available in LIDL supermarket, with Participant 6 complaining about finding mould on fruit and Participant 8 & 9 pointing out the short shelf life of vegetables, while households 12 and 13 praised LIDL's quality standards: "*The fresh fruit in the LIDL is always like the top […]."* (P12). Experiences of dissatisfaction with food quality and safety in restaurants were brought up in by two residents. However, concerns linked to food safety did not halt one of the participant's from revisiting the restaurant, due to their great liking of the served food. The food quality of the Foodbank parcels and To Good To Go boxes were stated to be lesser, due to the sourced food being redistributed surplus, as stated by the participants. As mentioned in *column 7,* the food quality of produce sold at the open-air market was also a point of discussion. This points to the participants being substantially aware of their personal taste and food quality standards, while judging the surrounding food suppliers according to individual preferences, like produce freshness.

Nonetheless, the quality of food offered in the municipality is generally accepted by the interviewed residents. The following quote reflects the feelings that the households share when it comes to food quality and safety in Wageningen:

P8: "[...] So when we go out to eat something in a restaurant, we feel that they have quality in terms of food safety and healthy food. And the same in the supermarkets or markets like we never feel like they are products that can be harmful or that we are on the risk with when we buy them."

To find acceptable food that meets the quality and taste standards households partake in activities already listed in Chapter 6.2, like shopping at less common food provisioning places (like local farms), bringing food from their home country, processing food to meet their liking and other.

6.4.2 Health and nutrition

When the participants were asked to describe what healthy food means to them, several mentioned eating vegetables, fish, vegetarian food, consuming less fat, getting sufficient vitamins and minerals and a lot of protein, especially eggs. Home cooking, eating sufficient fibre, buying non-spoiled products, opting for brown bread instead of white, reducing pork consumption and lowering carbohydrate intake were other practices that were considered healthy by the households but were not shared among the interviewees. All participants pointed out that it is crucial for them to try to balance the types of foods they intake (**endowments**).

P5: "[...] there's not one product because when you eat you need to balance your food, what you're eating needs to balance […] it's a mix of vegetables, fruit, meat, fish and dairy."

P8: "So healthy to me means keep this balance. Like, OK, if you like, we eat a lot of protein like a lot of eggs in the morning. We try to compensate the veggies or the greens in the lunch or dinner. But we try to not base on one specific group of food the three meals of the day […]."

While treating themselves with something tasty was mentioned by many households in different contexts, Participant 8 specifically mentioned that eating healthy means not restricting herself in having dark chocolate and coffee. Similarly, Participant 12 said to consciously prioritize taste above the health properties of the food: *"First, this should be delicious, and I actually don't care that much about health because I think it's better to enjoy first, so, when you have a good mood, you can take care of your health issue […]."*

None of the households mentioned to lack healthy food options in Wageningen (**conversion**). Moreover, four households stated to have diversified their diet with new healthy products after moving to Wageningen. For example, milk alternatives are said to be more accessible for households with lactose intolerance, compared to the home country. Both supermarkets and the market were stated to generally provide healthy food options. When looking at specific food assets, Participant 10 noted that the way retail shelving is organized impacted their perception of the healthiness of the supermarket:

P10: "No, not Hoogvliet, because you come in with bread and cake and I don't think Hoogvliet is (offering healthy options). But Lidl and Albert Heijn are, especially Albert Heijn, when you enter, you see fruit and vegetables and nothing else."

Restaurants were mentioned by two households as generally providing healthy food options; apart from the unhealthy composition of the children's menu, a lack of healthy Halal eating out options and the excessive accessibility of fried food, which some participants deemed unhealthy. Participant 6 said to avoid caterers that use frying oil, as according to them they do not follow the guidelines on oil change, increasing health risks.

Besides the above-mentioned food choices that the households make, some households go the extra mile to get healthy food from local farms (**agency**) (*see column 8*): *"I think from the farm I can always get the healthy food […]."* (P12).

8. Farms and farm shops

Household 8 & 9 mentioned occasionally visiting two farms in the surroundings of Wageningen by purchasing and helping harvest fresh produce.

> *P8: "[…] This is something that we enjoy. Not just as buying food, but also as an alternative activity. So that's something that we started doing it, but it is not a common activity yet."*

Participant 12 stated to go to the nearby poultry farm for eggs, as they are cheaper and bigger than at the retail stores. Households 5, 6 and 13 said not to visit farms for food provisioning reasons, however, Participant 6 said to consider.

Farm produce was mentioned to be available at farmer's market stands, occasionally used by two households. The produce sold at the stands was described as of higher quality and local but expensive by Household 6.

Leisure activities were associated with farms, with Participant 5 enjoying walking and biking through farmland and Household 13 visiting children's farms for family-day activity purposes to interact with animals and make use of the playground and café. *(Chapter 6.2.4)*

Participant 8 said to find the farm that they make use of as "*very sustainable*", highlighting their pesticide-free and organic production systems and additionally mentioning the importance of such transitioning.

Figure 20. Inside of a greenhouse at De Hooilanden (Bennekom) farm. Photograph taken by P9.

Figure 21. Farmers stand at De Hooilanden (Bennekom) farm. Photograph taken P9.

Figure 22. Agricultural field at De Hooilanden (Bennekom) farm. Photograph taken by P9.

Figure 23. Egg vending machine at the Kraats Eiren (Bennekom) farm. Photograph taken by P12.

6.4.3 Sustainability

Many households were familiar with the term sustainability and could easily list the deemed by them sustainable food practices that they partake in. Several households, however, were not familiar with either the Dutch or English term 'sustainability'. Nevertheless, all households have mentioned some forms of sustainable food practices throughout the interviews. Reducing food waste seemed to be prominent for more than half of all households:

> *P8: "Sustainable for me means, even the food doesn't look beautiful, they still food."*
> *P10: Yes, I don't look at organic, because my sustainability - I try not to waste food, that's what I do."*

Buying food that does not look perfect, are about to expire, opting for the market stand that sells second-grade produce discarded from the wholesalers, getting To Good To Go packages, and processing the food at the household level to minimize food waste (e.g., by cutting off spoiled parts of vegetables) were all interventions employed by several households oriented towards avoiding or reducing food waste. Participant 13 mentioned buying products at the Jumbo supermarket made from 'waste' ingredients, such as tomato sauces.

Some found organic foods healthier compared to conventional alternatives, due to the restricted pesticide use, while others disagreed. Two households said to find organic products expensive, while Participant 8 pointed out their affordability at the Jumbo supermarket. Participant 10 said not to pay attention to whether the food is organically produced.

Three households felt influenced by Wageningen social and food environments to try to eat a more plant-based diet. New practices like reducing meat consumption and implementing more plant protein sources in their diets (e.g., peas, tofu and "*veggie based meat*") were mentioned as the newly picked-up eating habits. None of the households stated to follow a vegetarian or vegan diet. Participant 8 said to put effort into adapting and being respectful of other people's preferences and needs in relation to meat consumption but felt that it was not mutual, which was also reflected in terms of food options offered by some food service providers:

> *P8: "[…] I start feeling when I arrive in the Netherlands, that if we are not vegetarians or vegans, we are not sustainable for people. So, each time that some people in Wageningen ask me if I have food preferences. I'm quite often scared, and I feel guilty to say that I consume meat."*

Traceability was referred to as important for three households, which shared the following opinion: "*Because you can put just this sustainability word in every aspect or in everything in general […] we should consider where they come from and have a better understanding of what is the process behind them."* (P8). Local foods were considered more sustainable by three households compared to produce available at the retail stores, while Participant 12 specifically mentioned trying to eat seasonal foods.

This chapter showcases that the participant households have varying from each other understandings of sustainability in the domain of food. Moreover, many food practices valued by the households like limiting food waste or buying locally take root from the households believes and values (**endowments**) and can be easily reproduced in the food environment (**conversion**). However, some branches of sustainable food consumption (e.g., organic food or plant-based diet) are not incorporated into the households' food routines, as they clash with their values, like food affordability and cultural significance of eating meat products. When comparing the sustainable eating practices of the households to the sustainability strategies referred in the Wageningen Food Agenda there is a visible correspondence in many topics (Sibbing, Bruil, & Hollenberg, 2021).

6.5 Food accessibility

In this chapter *the accessibility dimension*, which refers to the geographical locations, distances and opening hours of locations within a food environment (Caspi, Sorensen, Subramanian, & Kawachi, 2012) will be investigated. Overall Wageningen was referred to by the households as a small municipality and relatively easy to get around and access all existing food assets. As mentioned in the Chapter 6.1, households have noticed the appearance of more supermarkets in recent years within the city premises, increasing the accessibility and variety of food outlets. The accessibility of grocery stores was mentioned to give participants a feeling of ease and satisfaction, indicating that the **endowments** of many households are positively translated in the food environment (**conversion**):

> *P4: "So, I can find everything easily and yes, what I just said, Wageningen is small, everything is in the city centre and accessible for everyone, I think."*
>
> *P10: "[...] I just have a good feeling about grocery shopping (in Wageningen) because everything is close by."*

Groceries were said to be done by foot, bike and car; biking being the most employed way of commuting for all households. The commuting time by bike was estimated by some participants to range between five to ten minutes between all supermarkets: *"There's no traffic, there's no unsafe situation, so, you drive your bicycle easily, less than 5 minutes you are at the supermarket […]."* (P5).

Based on the interviews it can be concluded that the participated households generally prefer food assets that fit their individual and household needs geographically near to their places of residence. Nevertheless, some households shred their dissatisfaction with the clustering of food assets near the city centre of Wageningen, which increases the commuting distance for the ones residing on the outskirts of the municipality. The distances and household navigation within the city seemed to influence the choice of the supermarket for three households:

> *P9: "I think I have never bought anything at Hoogvliet, but it's because also we don't use to be around."*

While supermarkets within proximity to the areas of residence were mentioned to be most frequently used by most participants. Living next to a farm seemed to encourage Participant 8 to pass by and do groceries there. Cars were mostly used for large groceries and/or long distances, only by those six households that had access to a car.

Participant 2 found the process of commuting to and spending time at food assets like the Saturday market to be pleasant (*Chapter 6.2.4*), as did Participant 13, for whom the bike ride to the nearby store with their family members has become a bonding ritual (*column 5*).

Whether household members do the groceries alone or together greatly deviates depending on factors such as the size of the groceries, distance to the store, necessity and ability to drive a car, time availability, partners' knowledge of food options and household dynamics in general. For example, the partners of Household 2 & 3 do large groceries together, as it is easier for them to make food choices together and carry the bags while making a Sunday trip out of it. Small groceries in the nearby shop, however, are usually done by one of the partners. Household 13 on the contrary has one of the partners do all the large groceries, while the other is at home with the children. Thus, both food environment and household characteristics dictate whether groceries are done alone or together.

When talking about accessibility two related concerns were voiced by some households. Firstly, the opening hours of grocery stores on Sundays were stated to be restricting for Participant 13. Secondly, Participant 6 found the accessibility of the open-air market to be strongly dependent on the weather conditions, as they thought that less residents visit the city centre during a rainy day. Therefore, they proposed to shelter the market by installing a form of a cover above the square. These

could also be argued to be matters of the food environment's lack of accommodation to the participant's food provisioning habits.

The accessibility dimension cannot merely be looked at from the perspective of distances that households cover to their nearest store, as the food assets of Wageningen are diverse, as are the households' preferences. Household 12 specifically indicated never going to the shop nearest to their house, as it is too expensive. When doing last-minute small groceries in the nearest shops, two other households mentioned being concerned about the costs but seemed to be willing to pay more for the acquired convenience, proximity and/or saved time. The interviews show that within the premises of Wageningen, households travel further to reach cheaper or more desired foods. Besides that, some food assets are only accessible for households on specific days, due to parking tariffs and/or opening hours. Therefore, some households adjust their schedules to be able to do large groceries in the city centre on Sundays when the parking is free of charge.

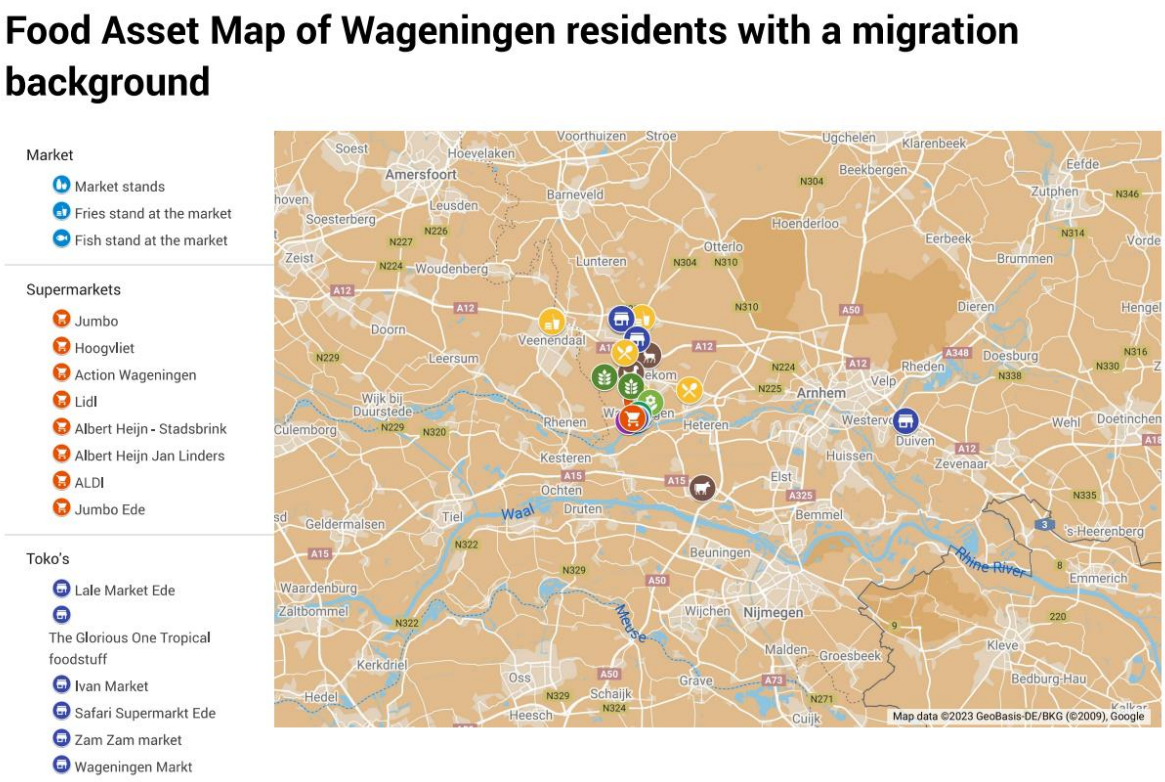


Figure 12. A screenshot of the Food Asset Map of Wageningen residents with a migration background (not the complete map). Created by the author.

For many households, the food assets that they wish to visit are not located within the premises of the Wageningen municipality. Households travel to other cities to purchase food for reasons ranging from visiting food assets not available in Wageningen (*Chapter 6.1*) to purchasing culturally appropriate food (*Chapter 6.2*), finding cheaper alternatives (*Chapter 6.3*) and/or by opting for better quality products (*Chapter 6.4*). Borrowing a car or biking for 45 minutes are some examples of additional efforts made by households to attain desired foods. Nearby cities like Ede, Bennekom, Veenendaal and Renkum but also larger cities like Arnhem, Amsterdam, Utrecht, and Rotterdam are visited by households for food provisioning reasons. Three households said to purchase food abroad (e.g., in Brussels). Accessibility of food assets by the participants is not only increased through commuting but also through online shopping. Thuisbezorgd was mentioned to be used by three households, as an alternative to going out to eat. While two households stated to make use of online stores in their food provisioning, see *column 1*.

6.6 Interim conclusion

In the previous chapters food provisioning practices of the interviewed households with a MB were analysed through the five food access dimensions. More on the effectiveness of the employed conceptual framework in the *Discussion (Chapter 7)*. The analysis shows that nine households with various cultural backgrounds make use of a wide and diverse range of food assets to access food, counting over sixty various food provisioning locations, such as supermarkets and online stores, and food practices like sharing food and gardening.

Many food assets where shared among the participants' food routines, while some were mentioned only once during the research. The open-air market and most of the supermarkets, toko's and restaurants are known and utilized by the participated residents in their daily lives, whereas destinations like farms, online shops, children's farms and others, where not as common. The *types* of places visited, and the *kinds* of food practices performed where shared by the households, despite the households often not mentioning the same food assets. For example, gardening and/or receiving produce from a garden of an acquaintance was performed by four households, while none of the households shared the same garden. Similar findings can be stressed with the households' use of farms and farmer shops, slaughterhouses and butchers, with a great exception of *Diepeveen Herveld B.V. (Herveld)* slaughterhouse used by three households.

The interviewed households seem to balance the five food access dimensions according to their personal and household endowment and their conversion possibilities within the surrounding food environment. The research findings show that many of the used food assets represent multiple dimensions, like toko's which mostly offer cheaper and cuisine-specific ingredients. The decision-making process of choosing a food asset is determined by several dimensions that reflect the households' values and wishes. Often exceptions are made in favour of one of the dimensions. An example of such a phenomenon is Participant 4 choosing to do groceries at the nearest supermarket even though they are aware that they will pay less by shopping elsewhere. This is a case of accessibility and accommodation dimensions prevailing over affordability. Another example is Participant 5 travelling to Brussels to eat at a restaurant that offers home country-specific cooking. For them, the importance of enacting a food practice (accommodation and acceptability dimensions) proves to be more vital than the high expenses and large travelling distance (affordability and accessibility). These findings illustrate that food practices are often more valued by a household when they meet the properties of several dimensions. An overlap of accommodation, accessibility, and affordability dimensions can be seen in the *Hoogvliet coffee table* example. This food asset offers free hot beverages and a space to relax and socialize while being closely located to the homes of those participants who emphasized the importance of this food asset.

The study shows that food assets can be part of a household's food provisioning routine based on numerous reasonings like dietary restrictions, low-cost assortment and other preferences and values that make up the household's endowments. These preferences can vary amongst the households. The *Diepeveen Herveld B.V. (Herveld)* slaughterhouse is one example of a food asset used by three households for varying incentives. The open-air market, on the other hand, is a shopping destination used by all households for seemingly alike reasons: a wide assortment of affordable vegetables and fruit. This illustrates how participants' personal endowments and '*cultural meaning systems*' direct the household's food provisioning choices and routines, and how the households' perceptions of a food asset's function(s) vary depending on the valued food practices.

Furthermore, the study findings indicate that endowments can extend from personal to household values and beyond. The parental attention to their children's wishes and values linked to food, like the requests to get McDonalds or eat a homeland cuisine-specific dish, are some examples. Adapting to friends' and acquaintances' eating habits, like switching to more plant-based recipes, can also be interpreted as an adjustment of one's endowments to meet the needs of others.

Besides the participant's endowments, the conversion characteristics of the food environment play a substantial role in the successful achievement of valued food provisioning practices. The *Diepeveen Herveld B.V. (Herveld)* slaughterhouse example showcases the restricted opportunities within the borders of Wageningen municipality for households with specific meat preferences. Another example of an unsuccessful conversion in the Wageningen food environment is the constrained availability of affordable products that represent the home country cuisine of Participant 12, which they then order online or buy in other cities.

Although the Wageningen food environment was generally marked as one rich in food options, with a rapidly diversifying and growing number of grocery stores and other food outlets (e.g., online shops and restaurants), some cultural and otherwise valued food habits were said to be hard to perform. Some examples include tough-to-find cuisine significant products, Halal eating-out options, and affordable and good quality products like meat, fish and tropical fruits and vegetables. Besides that, Household 8 & 9 mentioned experiencing the feeling of being unwelcome in the food environment where plant-based eating has become the new normal, as it clashes with their food-related values and preferences.

All households have indicated ways in which they overcome the limitations of the local food environment. The endowments like cooking home country recipes, following religious commandments, saving money, etc., motivate the households to find alternatives in and outside the municipality, make substitutes and find resourceful solutions. Such actions that enable valued functionings showcase the households' agency to achieve further freedoms in their food practices. Besides achieving valued food practices through alternative methods, households showcased their agency by voicing dissatisfaction with specific characteristics of the food assets available in Wageningen during the interviews.

The agency of the participants is reflected in their motivations and often successful achievement of practices and/or the attainment of specific products that embody strongly valued characteristics. The successful conversion of the household's endowments in the food environment is not merely dependent on the suitability of the environment but also on the household's agency to overcome the potential limitations by adapting to new foodways and/or by creating new freedoms. Some examples of how food provisioning endowments of households with a MB are translated into the local food environment and the performed by the participants' agency-driven actions that help overcome the limitations can be found in *Table 7.*

Besides attempting to change the available products to fit their needs households show a great deal of adaptation to the local food environment. By adjusting what is valued by them they increase the conversion opportunities within the given food environment. Adapting the household's food routines to the local environment and acquiring new food habits through interaction with other cuisines and/or other residents of Wageningen with Dutch and international backgrounds contributes to the development of transnational foodways. For instance, Participant's 10 interest in South Korean pop culture and cuisine incentivises them to commute to larger cities to acquire the wanted products.

The study results show that food plays a significant role in social practices like the maintenance of social networks, family lives and leisure activities. According to the findings, food practices are often a medium that fosters new connections in the city and supports numerous social activities (e.g., chatting with the cashier and/or picnicking with friends). Furthermore, an eating routine can be profoundly influenced not only by the surrounding food environment but also by the household's social network, which can be seen in the example of Household 8 & 9 adapting to eating more plant-based foods. This confirms the interrelation of food practices and social activities and their co-creation.

Table 8. The conversion food endowments of households with MB in Wageningen food environment and their agency. Created by the author.

Endowments	Conversion	Agency driven practices
Eating home country products	Lack of specific products in Wageningen	Commuting to toko's outside of the municipality
Following a Halal diet	Limited Halal meat options at local restaurants	Opting for fish or vegetarian dishes when eating out
Eating high quality fruit grown in a warm climate	Poor quality of imported fruit sold in the supermarkets	Choosing to eat local and seasonal fruit
Ensuring the children eat healthy at leisure activities	No healthy kids' menu in restaurants	Arranging BBQ and picnics as the eating out activity, enabling the families to provide healthier food option for their kids
Aspiring to implement more sustainable food-related practices	Not finding the options to eat organic or plant-based as fitting with personal dietary preferences	Choosing other ways of being more sustainable like reducing food waste and eating more locally
Wanting to save money on groceries	Rising food prices	Buying in bulk and/or online for lower prices
Incorporating herbs in home cooked dishes	Dried and fresh herbs being expensive in grocery stores	Maintaining a herbal garden at home
Cooking with home country specific spices	Lack of or high costs of desired spices	Manually blending store bought spices or bringing spices from home
Wishing to eat a cuisine specific product	Lack thereof in the surrounding food environment	Asking friends and family that travel back home to bring the wanted products

To conclude, the Wageningen food environment plays a role in the household's sense of belonging to the city space and other residents. Feeling welcome is shaped by the individual experience of the food assets and their appropriateness but also by the associated social practices, as food is a medium to increase and sustain participants' social network within the city. Being able to partake in valued food practices helps the households create and sustain a sense of home in Wageningen. The need to adjust the eating behaviour or valued practices, on the contrary, creates the sense of unwelcomeness for some households, while stimulates others to develop new food habits and discover new cuisines. Most of the interviewed households do not feel welcome in the entirety of the food environment but instead prioritize specific food assets and/or recreate valued food practices that make them feel at home.

7. Discussion and Recommendations

7.1 The transnational food environment of Wageningen

In the Introduction of the study, the matter of inclusiveness of a food environment has been raised. The literature review has broadened the scope by expanding beyond inclusivity towards a transnational paradigm, allowing the researcher to explore not only the connection of an individual to a food environment but also inquire about the potential multiplicity of households' interaction with places, spaces and people. The matter of inclusivity in this research was investigated from the perspective of households' sense of belonging to the food environment. Indeed, the characteristics of the Wageningen food environment do play a role in the household's sense of belonging, not merely due to sufficient availability of culturally significant and/or norm-appropriate products. The results of this study demonstrate that households with MB are not only able to "*enter a space that was not intended for or created by them*" but also shape the food environment through their desires and everyday practices, which Ozkazanc-Pan (2019) refers to as *belonging* (p. 483). The sense of belonging is, thus, formed through the participants' effort to follow transnational practices like importing home-country products, cooking according to traditional recipes, eating at restaurants that serve international cuisines, reenacting festivities in local contexts, trying new cuisines and others.

Wageningen food environment is becoming progressively more transnational as it is co-created by its residents. The rising popularity of Ochama online grocery store can serve as an example of how novel suppliers of culturally appropriate products are being established in Wageningen. New food routines based on the '*cultural meaning system*' are incorporated into the existing food assets, e.g., the increasing availability of Halal products in supermarkets and butchers. Transnationalism in the Wageningen food environment was also exhibited in the study through the cuisine exchange between the residents of the municipality and the popularity of internationally oriented food assets of the city like toko's and restaurants. While the food environment of Wageningen facilitates many of the already existing valued food practices of households with MB and can be referred to as a '*viable practice space*' (Shove, Pantzar, & Watson, 2012), many practices that take place in the municipality cannot be recreated without external intervention and/or participants' informal networks, like bringing food from home countries, which only further demonstrates the increasing transnationalism. Similar findings on the interaction between the food environment of Enschede and food practices of residents with a Syrian background were recorded in the work of Brons et al., (2020).

7.2 The multiplicity of food provisioning practices

As the study results show, the interviewed households not only look at the cultural appropriateness of the groceries (accommodation and acceptability) but navigate their daily food provisioning routine according to other dimensions. The study by Ginsburg et al., (2018) applied the food access dimensions when investigating the access to adequate food through urban food pantries in the Bronx, New York. One of the outcomes of the research was the notion that a characteristic of a food asset could fall under multiple dimensions, for instance, the limited product selection of a food pantry could be seen as an issue of accommodation, acceptability and availability. The thesis has shown a comparable discovery, as characteristics of many food assets represent several dimensions. For instance, the Open-air market that is visited by all participants for its wide range of low-priced assortment of fresh produce meets the criteria of accommodation, affordability and acceptability. It can be argued that a more in-depth result analysis could have been possible when using another analytical lens, for example, the materials, competencies, and meanings concepts of the Social Practice Theory (Shove, Pantzar, & Watson, 2012). Nonetheless, applying the food access dimensions has highlighted their inseparability in household food provisioning. The thesis illustrates how interconnected the dimensions are in the household decision-making process and how households balance their wishes and needs according to the characteristics of the food environment, by finding alternatives, adapting,

making exceptions, and through other coping strategies. For future studies, it is recommended to establish a more integrated approach when investigating the food access dimensions or resort to other theories.

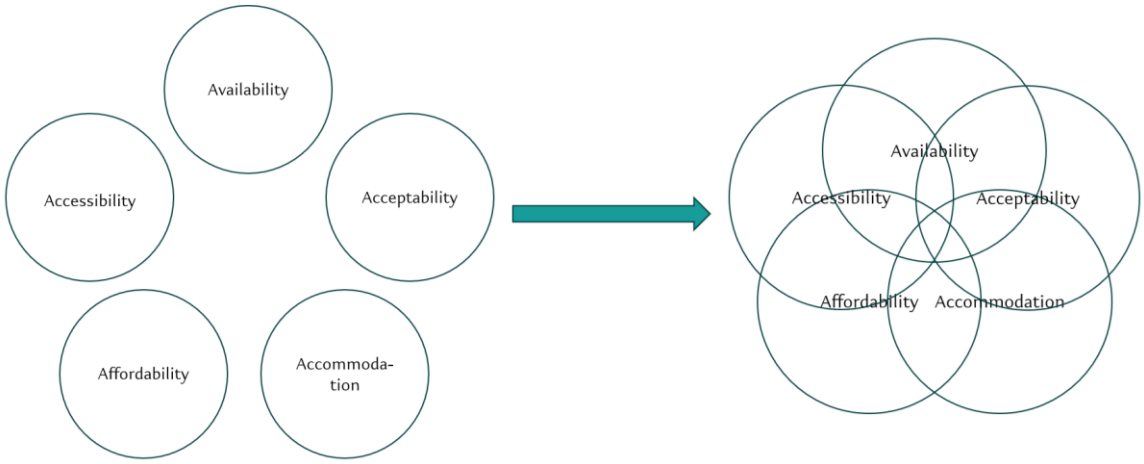


Figure 13. New approach to the Food Access Dimensions. Created by the author.

During the completion period of the thesis, a study by Veen et al., (2023) investigating the experiences of residents with MB with the food environment of Almere was published. The study results show many similarities with the findings of this thesis. The study has highlighted the intersectionality of food practices, stressing that daily routines and preferences like timing, proximity, convenience, habits and others also play a role in shaping food practices (Veen, Smaal, & Korn, 2023). This supports the findings of this thesis that illustrate the interconnectedness of the food access dimensions in the households' food routines. The participants of both studies have indicated a great diversity of assortment in the studied cities by stating that they can find almost any longed-for ingredient. In both studies, the participants have highlighted toko's affordability, quality and selection of cuisine-appropriate products as well as the supermarkets' convenience and wide assortment. Eating out at restaurants that serve international gastronomies, bringing food from home countries and ordering food online were some of the other findings shared by the studies. Preparing home-country cuisine food, in both studies, was a way for the participants to reconnect to and cherish their cultural background (Veen, Smaal, & Korn, 2023). The findings of the study by Veen et al., (2023) and this thesis share many similarities that can serve as an indication that the food environments of many cities in the Netherlands are becoming increasingly transnational as their residents carry or develop ever more diverse eating preferences and food provisioning routines.

This thesis has illustrated how social ties are created and/or maintained through food. The relationship that some participants have built with the toko's shopkeepers can serve as an example. The study by Joassart-Marcelli and Bosco (2020) highlights the importance of such a relationship for immigrant residents by indicating the non-economic functions of such stores, as spaces for friendly and informal relations that help foster a sense of place (Joassart-Marcelli & Bosco, 2020). Indeed, the thesis shows several participants engaging in conversations with toko's shopkeepers which helps them expand their network within the city and even receive discounts. Other examples of the connection between food and social activities can be seen in many households sharing food, cooking for relatives and friends, and partaking in other food-related social activities like religious and other festivities. These findings match the discoveries by Veen et al., (2023) that point out the important role that food plays in the interpersonal lives of individuals with MB by helping to establish and maintain bonds with family members and the wider community.

The matter of high food prices cannot go undiscussed. While the food production prices have decreased compared to 2022, consumer prices have remained high (CBS, 2023). A study published in January of 2023 showed that 28 per cent of the Dutch population worries about their financial means to purchase food (Red Cross Netherlands, 2023). Most of the participants indicated that the recent food price growth has led them to be more conscious of how they spend money on food. These findings relate to the study's conceptual framework. Sen (1999) and Walker (2013) indicate that financial circumstances and varying environmental conditions shape the translation of income into valued functionings. For instance, three households that participated in the study said to value going to restaurants and cafés but were driven to restrict such food practices due to the growing prices. All households have mentioned individual and shared coping strategies that help maintain the affordability of the valued by them functionings. This strongly corresponds with the publications of Veen et al., (2023) and Ling, Pang, & Liap (2020), as they point to informal foodways like gardening and sharing/receiving food as strategies to overcome financial restrictions connected to recreating (valued) food practices that were also highlighted in the thesis.

The food environment is intertwined with the social realm of the city, the food system's economics but also the city's planning, design and architectural properties. As stated in the literature review, the design and operation of the urban infrastructure can construct access inequalities and alter the way social practices are distributed in a city space (Shove, Pantzar, & Watson, 2012), which strongly relates to the findings addressed in the accessibility dimension. Some observed examples of how food asset accessibility is impacted are the limitations caused by the weather conditions (e.g., rain) restricting outdoor activities at the Open-air market, as indicated by Participant 6, as well as the general concentration of the food assets in the city centre distant to the home of Participant's 12. Other observed matters are general proximity, parking tariffs and opening hours of food assets. This proves the notion of Shove et al., (2012) that the environment in which practice takes place indeed moulds the capabilities of the individual to achieve valued functionings. The study showed that participants who had access to cars could make use of a wider range of food assets and were not confined to the Wageningen food environment, which allowed them to find better-suiting products. This links back to the idea of Sayer (2016) who emphasised the impacts that access inequalities in resources and opportunities may have on the possibilities to enact valued functionings.

When it comes to food sustainability, reducing food waste was one of the prevailing responses among the interviewed households, which can also be seen in the study by Adriano et al., (2023) on the foodways of Almere residents with a second-generation migration background. In both studies, sustainable food practices played a minor role in the food practices of the households and were mostly represented by the households trying to reduce food waste through meal prepping or saving leftovers, considering seasonality and locality when buying fresh produce and trying to decrease meat consumption (Adriano, Veen, & Smaal, 2023). Eating less meat was considered to clash with traditional cuisines and food norms by some participants in both the thesis and the research by Adriano et al., (2023). While food waste was not a result observed in the study by Brons et al., (2020) habits of home-growing and shopping at slaughterhouses and local farms strongly correspond with the results of the thesis. Several of the thesis participants partake in sustainable food provisioning practices like eating seasonal and/or local food, buying farmers' products and following religious dietary restrictions without a direct intention to be more sustainable but rather for cost-saving, quality or taste preferences. These findings correspond with the results of the study by Brons et al., (2020) that investigated the ways health and sustainability are understood and performed by residents with a Syrian background living in the Netherlands.

As introduced in the theoretical framework, this research draws on the Social Practice Theory and the Capability Approach. This thesis contributes to these theories as the findings fall in line with the proposed notions. This is depicted in the applicability of the endowments, conversion and agency

concepts of the CA in the study context, represented by households' cultural and other food-related values and habits, the way the food environment enables (or not) the households to perform these and the participants' coping strategies. Moreover, the thesis demonstrates the middle ground between agency-centred and structural approaches, as both food environment influences on the households' food provisioning practices as well as agency-driven food provisioning strategies are recorded, confirming the ideas presented in the SPT.

7.3 Study limitations

In this chapter, the possible limitations of this study will be addressed. To start, this study does not aim to provide an overview of *all* food provisioning practices that make up the food routines of *every* household with MB living in Wageningen municipality. Both the qualitative data and the maps should not be interpreted as the exact reflections of the food environment and the ways the households interact with it, as the study was executed for exploration purposes. Nine households with varying cultural backgrounds participated in the study, which is a sample group that does not reflect the demographic characteristics of Wageningen municipality, making it difficult to draw culturally specific conclusions from the data and impacting the transferability of the research. Additionally, representatives of larger resident groups with migration backgrounds that live in Wageningen such as Moroccan (3.4%), Surinamese (2.6%), Turkish (2.1%) and Antillean and Arubian (1.4%) are not represented in this study (AlleCijfers.nl, 2023). For future studies, a relation study between the food practices of residents with the same MB and the food practices of a group that has not undergone the process of migration can be performed to investigate how migration influences food provisioning and the sense of belonging to a food environment.

The sample size and the period during which the study was carried out have the potential to restrict the overview of the existing food assets and food practices in Wageningen. Some food assets, like Ochama online grocery store, emerged only once in the data, while Participant 12 familiar with the online platform stated it to be widely used by other residents. The sample size also might influence the kinds of practices found in the study. These limitations were addressed by framing this study as strictly exploratory with the aim to dive into contextual nuances of the participants' everyday life. Additionally, the data collection process of this study took place during spring and early summer, which may limit the accessibility of some food provisioning practices. To overcome this limitation additional questions on season-dependent food practices were addressed in the interviews. The study execution period also has the potential to lower the accuracy of the collected data, as the food environment of Wageningen has proven to be swiftly changing. During the time of the study, the Jan Linders supermarket began a collaboration with Albert Heijn supermarket, possibly impacting the prices and assortment of the store.

One of the study's outcomes is a Food Asset Map that encompasses the locations in and outside of Wageningen municipality where daily food provisioning of households with MB takes place. Some food practices that take place on private terrain like eating together with friends and gardening could not be included in the map for privacy reasons. Moreover, online stores and shops located in other countries were not included in the map, due to data absence. Randomized locations on the map are used to highlight the presence and significance of these food assets and practices that would otherwise not be included and potentially overlooked.

As the Food Asset Map-making process was not executed in a participatory format, the map's accuracy and representativeness must be addressed. Rieniets (2015) in their work argues that mapping is a performative action that takes place in space. The author points out that the authorities who map and plan a space can fail to address their individual biases as well as their personal involvement with the space and other residents (Rieniets, 2015). Similarly, Soma (2021) refers to the concept of 'map tyranny' (Duncan, 2006, as cited in Soma, 2021) that highlights the potential of maps

reproducing harmful judgements as well as the privileges of scientists and map makers. Moreover, the map is designed in Google My Maps which gives an interface that might not be competent at replicating how the interviewed households perceive the food environment that they interact with daily. To conclude, while the goal of the Food Asset Map is to create a unified overview of all food assets used by the interviewed households, such a map is likely to simplify reality, as it cannot depict complex interpersonal connections, individual preferences and other role-playing aspects that exist in and shape the food environment. The direct involvement of residents in the creation process of a Food Asset Map may serve as a way to develop a more representative map and overcome the influences of a researcher's bias.

The researcher is aware of the potential biases that may arise from living in Wageningen municipality, as they might be more prompt to highlight food assets and food practices that are prominent in their own daily life, consequently, overrepresenting relatable experiences. Besides the author's bias, participants' subjectivity must be mentioned. The practice of food provisioning, taste, food preferences and others are subjective human experiences and, thus, the results of this study cannot be generalized for the entire population with MB of Wageningen. As the study shows, migration background has a significant role in the perception of taste and what practices are valued by one. Within this research, participants showed contrasting attitudes toward the Alber Heijn supermarket and the fresh produce quality at the LIDL supermarket, which proves that the opinions shared by the interviewees on specific food assets are inherently subjective, as they are based on their perceptions and encounters within the Wageningen food environment.

8. Conclusion

Nowadays the globalised food systems and the culturally diverse demographics in the urban landscapes have become ordinary in the Netherlands. The increased mobility and consumer demand have expanded the variety of foods available in a city, while challenges like the dominant obesogenic and convenience characteristics of urban foodscapes are becoming more prominent. As a response to this, matters like food environment sustainability and inclusivity are becoming more prevalent in the fields of research, governance and charity. In the past years, many Dutch cities have published city development programs like the City Food Agendas to provide an overview and set objectives for future years. In 2021 Wageningen municipality published a Food Agenda, pointing out a lack of involvement in food-related initiatives among residents with a migration background, as well as a general lack of knowledge about the ways in which residents navigate themselves in the urban food environment. To create a deeper understanding of the daily lives and food routines of Wageningen residents with a migration background and their perception of the local food environment, this research has been set up. This chapter will conclude the executed study, answering the main research question: *How do households with various migration backgrounds navigate themselves in the multi-ethnic food environment of Wageningen?*

The nine households with MB that participated in the study made use of a wide range of both formal and informal food assets located within and outside the premises of Wageningen municipality. Although the households had differing food-related values and preferences and mostly varying cultural backgrounds, referred to as endowments in the study, the kind of food practices performed, and the types of food assets visited were frequently shared by the participants. Supermarkets, the open-air market and toko's were commonly used by all participants, while locations like restaurants, online stores, farms and farm stores were less common, however, still played a prominent role in the study findings. Other informal food provisioning practices like gardening, sharing and/or receiving food with family and friends and eating together were most popular among the participants. Eight out of nine households stated buying food in other cities for various incentives, showing one of the ways the households overcome the limitations of the Wageningen food environment.

By applying the Capability Approach as the analytical lens for this study, it can be concluded that the capabilities of the households consist of endowments like the '*cultural meaning system*', religious confessions, affordability, quality and taste preferences, and other values and norms. The study results show that the endowments are influenced by the cultural background that impacts the participant's attitudes towards quality, assortment, price and other characteristics of food assets. The household's capability of enacting the valued or not food provisioning practices is determined by the way the endowments are translated into the local food environment. As the study shows, many food practices can be recreated within the premises of the Wageningen food environment such as purchasing culturally significant products at toko's and even supermarkets. However, all households have indicated to struggle to meet specific food preferences within the premises of the formal food environment.

The successful conversion of the household's endowments within the Wageningen food environment is not merely dependent on the suitability of the environment but also on the household's agency to overcome the limitations by adapting to new foodways and/or by creating new provisioning alternatives. Throughout the study, all households have demonstrated to go to great lengths to enact the valued food practices, for example, by commuting to other cities and countries to eat at home country cuisine restaurants or by manually processing locally available ingredients to fit the household's taste preference. These agency-driven food practices exhibit the ways in which the households create further freedoms for themselves and members of their close circle within the formal and informal levels of the food environment in and outside of Wageningen municipality.

This thesis clearly illustrates the multiplicity of the food provisioning practices of the interviewed households with a migration background, as households have demonstrated to balance the five food access dimensions according to their personal and *household* endowment and the conversion possibilities within the surrounding food environment. This raises the notion of food access dimensions' inseparability in the daily livelihoods of the participants. This is also reflected in many more popular food assets covering all five dimensions or by households consciously making exceptions in the domains of affordability and/or accessibility to partake in culturally significant food-related practices and vice versa. Future studies could enrich these conclusions by investigating the ways households balance their endowments with the opportunities present in a food environment as well as by shedding light on the exceptions that the households are willing to make to fulfil their valued food practices.

Besides the qualitative data analysis, the study has presented the reader with a record of food assets used by the participated households in the form of a Food Asset Map. The map was created to serve as a comprehensive overview of all food assets mentioned by the participants, however, many of the less formal food provisioning practices like online shopping through Facebook groups or gardening could not be represented in a map format. Based on these conclusions, practitioners should consider that although the Food Asset Mapping method might be useful at highlighting less-known food assets (like farms and community gardens) such a mapping approach may be incapable of representing the valued by the residents' characteristics of a store (e.g., the friendliness of a shop keeper) nor the more informal and private way of accessing food (e.g., receiving food and foraging).

This research contributed to creating a better understanding of the ways households make use of the food environment in Wageningen, which supports the Wageningen Food Agenda 2021-2030 goals. It especially focused on the matter of inclusivity highlighted in the Food Agenda. The households' ability to establish a sense of belonging through successfully enacting many of the valued cultural-specific and other favoured food practices within the local food environment serves as proof of the Wageningen food environment becoming progressively more transnational. This study points to residents co-creating the local food environment through their daily food routines that are driven by their values, norms, habits, demands and a longing for a sense of belonging. Based on these findings it is suggested that practitioners strive to look beyond the topic of inclusivity of a food environment and instead focus on supporting the existing less dominant foodways.

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Appendices

Appendix 1: Flyers (Dutch and English)

Appendix 2: Informed Consent Document in English

Informed Consent

1. Ethical Guidelines and Privacy

The two conversations (interviews) and all other communication between you and the researcher remain strictly confidential and will only be used anonymously in this MSc Thesis and potential publication for a scientific journal. You will find the information regarding recording the conversations in the sub-chapter below.

The researcher (student) will treat you respectfully and confidentially at all times by following your wishes regarding anonymity, participation and data management. The participant can withdraw from the study at any time and request that their data not to be used for the study. When such requests are made, the researcher is obliged to delete all data (both photos' data and recorded conversations) collected by or with the participant. In the data analysis process, code names or numbers will be used instead of real names to ensure the anonymity of the participants. All information collected is stored in a secure file in the possession of the researcher. If you do not wish to reveal your location through the photos, you must inform the student immediately.

1.1 Conversation (audio) recording

Both meetings will be recorded if the participant gives permission for this. Consent is requested at the beginning of each meeting. If the participant changes their mind after the meetings have ended, they can contact the researcher at any time to delete the recording. If the participant does not want the audio recording, the researcher will take written notes during the interview process.

2. Participation Consent

The participant hereby agrees (consents) to participate in this study. It is the participant's voluntary decision to participate in this study. Below is the signature of the participant (or any other sign of acknowledgment) to confirm that they have read this document and is voluntarily willing to participate in this study.

3. Contact information of the student

Name: Dasha

Phone number: +31 6 XXXXXXXX

Email: dxxxx.gretchikhine@wur.nl

Appendix 3: Research Handbook made for the participants in English

Research handbook (ENG)

by D. Gretchikhine

In this document you will be informed about the research goals and structure. Based on this information, I ask your permission to participate in this research.

1. Research process:

1. *First meeting:*

In the first 30-minute introductory meeting, we will get to know each other, discuss the research topic and goals and talk about the permission to participate. Guidelines for taking the photos are shared with you and possible questions are answered in the first meeting. Most importantly, the issue of ethics and privacy is addressed. At the end of the conversation, the next meeting is scheduled.

2. *Taking photo's:*

In between the first and second meeting, you will be asked to collect data for two weeks, as explained on the next page. During these two weeks, you will take pictures of your daily food provisioning activities / locations by using your mobile device (or distributed camera) and save the pictures on the gadget used, as explained in the first meeting. The daily food provisioning activities / locations are the places where you get your groceries / food (think of supermarkets, the market, garden, food sharing) or locations where you can get ready to eat food (for example if you have dinner with your friends or family or go out to eat). The photos should be shared with the supervisor via email or WhatsApp at least one day before the second meeting. If you are not comfortable sharing the photos online, you can print the photos (fees will be covered by the researcher). If the photographs need to be developed, this will be done by the researcher before the second meeting.

3. *Reflection (second) meeting:*

The second meeting will take place after the photos have been shared with the researcher (at least 2 weeks after the first meeting). The conversation is about your experiences with and opinions about the Wageningen food environment, the photographed food locations that you used daily and the food locations that you were unable to photograph but would like to share and discuss. Your experiences will be central during the meeting, during which the student will ask questions around specific themes.

2. Photo guidelines

1. **Objective description**: Participants are asked to take the following photos:
    a. Food locations that you have used during the 2 weeks (preferably all, but as many as possible is also fine);
    b. Food locations that have not been visited during the course of the study, but are commonly used, should be photographed (in case the participant passes by);
    c. Food locations that provide a sense of fulfilment and are valued by the participant (you) should be photographed, whether used or not during the 2 weeks;
    d. Food locations that participants would like to access but do not go to (for any specific reason) are asked to be photographed;
2. **Privacy and Ethics in Photography**: It is strongly requested to ensure that no people are in the picture. Persons who do appear in the photo must be unidentifiable (face turned away from the camera). More zoomed-in shots of the locations can be taken (e.g. pointing directly at food) to avoid photographing people.
3. **Location Privacy**: If you do not wish to reveal your location through the photos, you can take zoomed photos, making sure the address and other identifiable features are not visible.
4. **Example images →**

If you don't want to disclose the location in the photo, you can take a photo of the food available at that location:

3. Possible meeting places

Food of Cultures Office, THUIS, Superette, De bblthk or another quiet meeting place where you feel comfortable to have meetings related to this study.

4. Gift

Each household (max. 1 per household) receives a gift voucher from Proef Wageningen worth € 25. The card is valid in a large number of local restaurants, shops and entertainment venues (such as theatres, cinemas and museums). For more information: https://www.wageningencadeaukaart.nl/

Contact information of the student

Name: Dasha

Phone number: +31 6 XXXXXXXX

Email: dxxxx.gretchikhine@wur.nl

Appendix 4: First and second meeting guidelines in English

First meeting guidelines (English)

1. **Intro questions:**

- Would you prefer to speak in Dutch or in English?
- Let me introduce myself: My name is Dasha. I am a student from Wageningen University. I am currently doing my master's Thesis.
- The main goal of this research is to understand where people living in Wageningen get their food from
- Do you mind if I audio-record this conversation?
- This interview will probably take about 20 minutes. I will first ask about some personal details, then we will talk about your food provisioning practices.
- Do you have any questions before we start?
- How can I address you?
- What is your age?
- What is your background?
- How long do you live in Wageningen?
- Of how many individuals does your household consist of?
- Do you consider that you are doing financially smart groceries? Do you experience stress related to the cost of food?

2. **Topic questions:**

- Are you the main food provisioner of your household? Are you the one who most often does the groceries, food picks up, gardening, foraging or receiving food?
- Besides groceries, where do you get your food from: eating out, gardening, receiving, eating with family or friends, etc.?
- What is your opinion on the Wageningen food environment?

3. **Explaining the study based on the photovoice guideline.**
4. **Photovoice explanation according to the guideline.**
5. **Asking for consent**
6. **When would you have time to meet next?**
7. **Do you mind if I text or call you in between? You can always contact me if you have any questions.**
8. **At the end of the study, you will get a Proef gift card. In order to acquire the gift card, I need to ask for your full name. Is that okay for you?**

Second meeting guidelines (English)

Thank you for taking the time to have a second conversation with me. I would like to emphasize the anonymity of the study one more time. I will handle the data with care just as described in the informed consent document.

I am curious about your experiences. So, in this conversation you are the expert, that is why you can tell me everything about the themes that I will present. I will ask some questions that fit your story.

Can I record the conversation?

1. How do you experience participating in this study? What was it like taking photos?
    a. Did you notice certain things for yourself? Were there things that got you excited or that you found difficult?

Food provisioning

1. Is there a photo you want to discuss? Can you tell me about this photo?
    a. Where was this? Why did you come here? What did you get here? How often do you come here? What were you going to make of the products you got here? How does this place make you feel? Why did you take this photo?
2. Is there any other photo you would like to discuss?
3. Are there other locations (not shown in the photos) that you would like to discuss?
4. What are your alternative food provisioning locations that you use? In addition to supermarkets, do you sometimes go to the market - farmer - ethnic supermarket - vegetable garden?
5. Do you ever eat with others?
    a. If so, with whom? (friends and family, community center, food bank, etc.)
    b. What are the reasons for you to eat with friends and family?
    c. Do you depend on it on certain days?/Is that a way for you to save money?
6. What does healthy food mean to you?
7. What does sustainable food mean to you?

Availability

8. What are your main *needs* in terms of food?
    a. Do you think the available food locations meet your needs?
9. What *norms and values* are important to you regarding food?
    a. Do you think there is enough food options/locations in Wageningen that matches your norms and values (culture, religion, etc.)?
10. Which products and/or dishes give you a good feeling? Why?
11. Can you get all the products in Wageningen that make you happy?
12. What do you miss in Wageningen in terms of food? You can think of a location, or specific products, etc.
13. Do you ever buy products you don't know? Which reasons yes/no?

Accessibility

14. What do you think of the accessibility of food locations in Wageningen?
    a. How do you get to the places where you get food [means of transport]?
15. How often do you get/get food (groceries, gift, harvest, etc.) in a week?
    b. Are these specific days of the week?
    c. What time of day do you usually get your food? Why?

Money/costs

16. How does money/costs influence your decision about where and what food to get?
    a. Can you give some example?
17. Do you think you can find (enough) affordable food in Wageningen?
18. [How] would you eat differently if you did not have to think about money?
19. Are there locations in Wageningen where you want to get food but don't? Which and why?
20. Which places in the city offer healthy food options?
    a. Do you think Wageningen offers enough healthy and accessible options?
    b. (How often) do you use it? Do you find it important?
21. Which places in the city offer sustainable food options?
    a. Do you think Wageningen offers sufficient sustainable and accessible options?
    b. (How often) do you use it? Do you find it important?

Food environment

22. What do you think of the food locations available in your neighborhood/living area?
    a. How do you feel when you think about the food locations available in Wageningen? Do you feel happy/satisfied or not?
    b. Looking at all the photos you've taken, which places give you the greatest sense of fulfilment/happiness/satisfaction? Why?
23. How do you feel during your food activities?
24. Are your daily activities around food important for you to feel at home?
25. Do you feel welcome / belonging to the food locations available in Wageningen?
26. (What) are the obstacles that prevent you from obtaining important/satisfying/fulfilling food for you?
27. (How) has your experience with food available in Wageningen changed over time?
28. What needs to change about food in Wageningen to create a more satisfying experience for you?
29. Can you help me identify the locations of these places in the photos you took? [Only applicable if the participant wants to share their location]

Ask for the participant's full name:

Appendix 5: Additional Tables

Table 9. The number of households that mentioned various restaurants. Created by the author.

	Type of food asset / practice	*# of households mentioned*
	Restaurants / eating out	
1	Domino's Pizza	5
2	McDonald's (Ede)	3
3	KFC (Veenendaal)	2
4	IJssalon Antonio	2
5	Hema	2
6	Beagles and Beans	2
7	Watami	2
8	Eastern Express	2
9	Toko Radjawali	1
10	Tiga Star Indonesia	1
11	Turks Eethuis Ilayda Wageningen	1
12	Soek Damascus	1
13	My Asia	1
14	Shabu (Ede)	1
15	Eastern Express Restaurant Campus	1
16	Burger King (Veenendaal)	1
17	Da Martini	1
18	Le Perron	1
19	De Beken (Renkum)	1
20	De Beren (Ede)	1
21	Ali baba Restaurant	1
22	Kruimig Frietmakerij	1
23	New York Pizza	1
24	Cafetaria en eetsalon 't Station	1

Table 10. Households' monthly food expenses compared to the Normbedrag of the FoodBank Netherlands in Euros. Created by the author.

Participant	Household №	Quotes about smart groceries and/or budgeting	Grocery expenses per month in Euros	Normbedrag per month in Euros
P1	**1**	"Yes, of course"	€ 800	€ 630
P2	**2**	"Yes, of course"	€300-400	€ 520
P3		"Yes, of course"		
P4	**3**	"Yes yes we always look for cheaper food"	€300-400	€ 630
P5	**4**	"Yes, things (food) are getting expensive"	-	€ 300
P6 (& P7)	**5**	"Yes, I always want to do smart shopping. In different stores, different products. Actually sometimes, I'm looking which is the cheapest and good quality."	€200-250	€300~520
P8	**6**	"We have to. Yeah, yeah, because basically we have an scholarship...Like at this moment it's not possible for us to have a a second income. So both of us depend on it on on just one, and that's a so yeah, right now we have to to really think on what are our expenses."	€ 320	€ 410
P9				
P10	**7**	"So sometimes when we don't have money, because we have to pay for everything, your fixed costs and so on, I just use it (credit card) for food. [...] Yes, exactly, that is really my way of getting out of the stress. Yes, If we don't have money at a certain point [...] I don't experience any stress, but I do pay attention to where I get my food [...] I don't experience any stress, But I am aware that I must do smart grocery shopping."	€250-300	€ 410
P11				
P12	**8**	"I think so, yeah [...] I don't have a strict budget for groceries. But luckily, I always record how much I spent on groceries. So for my family, with two people, the cost is about 500 euros per month. If we eat out more often in that month, it will cost around 700-800 euro."	€500-800	€ 410
P13	**9**	"I started actually and I noticed this year that I looked more into what is the price per unit price per kilo price per and those kind of things I usually didn't do before and now I'm doing more because I'm like, oh, this is very expensive compared to the other one. Despite that, the price is the same, but once you look for per kilo or per gramme or per unit then it's very different. So there I'm I'm becoming more aware of that. [...] but so those things I started doing because I noticed we're spending a lot of money on food."	€600~760	€ 630

The '*Normbedrag'* values in *Table 10* are adjusted to the size of the households, as suggested in the official website of FoodBank the Netherlands (VoedselbankenNederland, 2022).

Table 11. Axial coding of both deductive and inductive codes. Created by the author.

Social interactions and the Food environment	**Noted Apects of the Food Environment**	**Limitations**	**Adapting strategies**	**Used and Mentioned Food Assets**
Family and friends	Food environment	Obstacles of getting food	Awareness	Ethnic stores
Children	Nature	Language	Adapting	Farms/Farmer shops
Eating together	Freedom	Lack of products / missing	Working in the food sector	Market
Community presence / Sharing	Safety	Costs	Bringing food from other countries	Gardening
Meeting people within the neighbourhood	Crowded	Cooking facilities	Bringing food from home country	Foraging
Personal connection with shop owners	Food quality	Accessibility	Other cities	Supermarket
Doing groceries alone or together	Acceptable variety of choices	The need for more variety	Lending money	Food bank
Habits, social values and norms	Delicious / taste	**Feelings and Meanings**	Advertisement	Online
Norms and values	Convenience	Feeling full	Reducing costs	Bakkery
Preference	Transparency	Happiness and food	Shopping routine	Restaurants / eating out
(Cultural) practices and habits	Local	Satisfied / fulfilment	Timing	Food sharing
Leisure activities	Nutrition	Feeling welcome / at home	Planning	Harvesting
Celebrations	Food waste	Stress	Comparing	Butcher / Slaughter house
Diverse eating pattern / Balanced eating	Changes in experience	Identity through food	Budgeting	Place of worship
Religious reasons	Health/healthy food	Not a nice environment	Preserving / processing food	University
Home country cuisine	Sustainability/sustainable food	Feeling guilty	Buying in bulk	Food from work
Donations	New products	**Type of products**	Meal preparation	
		Specific products	Needs to change	
		Home/Cultural/Exotic products		

Appendix 6: List of adaptive strategies mentioned by the households

Practice	#	Description
Being aware	P1, P2 & P3, P4, P5, P6, P8 & P9, P10 & P11, P12, P13	Being aware of the food prices in the city was mentioned by all households. One household (P13) mentioned becoming more aware about the prices since the inflation and opt for cheaper supermarkets. *P10: "I don't experience any stress, but I do pay attention to where I get my food. For example, I don't do my regular grocery shopping at Albert Heijn, because I know it is expensive."* Moreover, knowing that specific products spoil very fast like carrots from LIDL and thus opting for alternatives (P8 & P9). *P8: "[…] But this time we were more carefully selecting food or yeah, trying to buy the food that we think we will eat more easily. But yeah, it helped me to think over like the food. Yeah, buying groceries in general."*
Buying in bulk	P1, P10 & P11, P13	A couple of households stated to buy products like rice, oil and meat in bulk, to reduce costs. *P13: "[…] I'm buying like very large volumes of rice because I saw like if I just continue buying the small ones, it's a lot more expensive if I buy the and I mean its rice, it's not going to turn bad or anything."*
Comparing	P2 & P3, P4, P6, P8 & P9,	Comparing food locations (e.g., supermarkets) for their prices and especially the price-quality ratio was frequently mentioned by the participants. Opting for supermarket own (home) brand products is a way for households P8 & P9 and P13 to reduce costs. *P4: "Below, for example, Cola at Hoogvliet is more expensive than at LIDL. So, if I want to buy a coke, I go to LIDL. So yes, I look for cheap things, cheap food."* *P8: "And what we do is just to compare prices. So sometimes we know that the salmon is cheaper in jumbo, so we bought this buy this salmon there. Also, in Zamzam the meat is cheaper. So, we try to buy the meat there because it's good and cheaper and yeah. […]"* *P9: "Or we buy some stuff in one place, some others in other places."*
Budgeting	P2 & P3, P4, P8 & P9, P10 & P11, P13	Several households said to follow a strict budget that is calculated by them for a week or 15 days. One household said to need to stay under a certain limit, to receiving food from the Foodbank (P4). Others followed their budget less strict. *P13: "[…] We have to look how much money we spend on things because we have two kids."*

Lending money	P10 & P11	One household said to lend money by using a credit card. *P10: "[...] So sometimes when we don't have money because we have to pay for everything, the fixed costs or something, I just use it (credit card) for food. We use it to get groceries. [...] Yes, exactly it is really my way of getting out of the stress. Yes, If we don't have money at some point."*
Bringing food from other cities and countries	P1, P2 & P3, P5, P6, P8 & P9, P10 & P11, P12	Certain products like rice, flour and oil from are brought in bulk by the household from neighbouring cities (e.g., Ede) (P1) or from other countries like Germany (P10 & P11) or Belgium (P1). Visiting toko's, slaughterhouses, farms and other locations outside of Wageningen that offer cheaper food options was common amongst almost all participants. However, for some shopping in other cities is simply a way to spend their leisure time (P2 & P3).
Limiting certain practices	P2 & P3, P8 & P9, P10 & P11, P13	Buying only the things that are necessary (P8 & P9) and limiting leisure activities like going out to eat (P2 & P3, P8 & P9, P10 & P11) were other tactics used by some households. Managing children's expectations in the supermarket was important for participant 13 to safe costs. *P10: "I really buy things that I need. I don't buy extra."* *P8: "If our income change, we will definitely do it because we use to go to restaurants as a date for us. So what we are doing right now is just to date at home."*
Advertisements	P1, P2 & P3, P6, P10 & P11	Generally, supermarkets with more advertisements are opted for by the households. However, some overall more expensive locations that have continuous lucrative advertisements for specific products that are noticed by some households. *P10: "[...] Albert Heijn, for example, has deals for colas, drinks or iced tea, while Lidl does not have that."* Online advertisements published by supermarkets or local toko's are used by households P1 and P2 & P3, while participant P6 receives the advertisement pamphlet from the supermarkets, which they regularly checks. Discounts serve as a motivation to go to stores (e.g., slaughterhouse, toko's) located in other cities (P1, P2 & P3, P6, P12).
Planning	P1, P2 & P3, P5, P6, P8 & P9, P12, P13	Planning in a form of writing a grocery list was mentioned by two households (P2 & P3, P13). One household followed specific recipes when compiling the grocery list (P8 & P9). Planning for when and what to get at which grocery store also strongly related to making sure that earlier bought and newly purchased food did not go to waste in the fridge (P5, P6). Buying in bulk also linked to planning in terms of quantity and timing (P1). Online grocery shopping, due to the additional time that it takes for the produce to arrive, made some households to carefully plan around that time constrain (P12, P13).

Timing	P1, P2 & P3, P5, P6, P13	Timing plays a key role at saving costs. For example, prices at the market are lower at Saturday afternoon (P1, P6, P12). Moreover, on Sundays the parking in the city centre is for free, reducing the transportation costs (P2 & P3, P6). Timing also links to the availability of household members to do the groceries, due to work or children (P2 & P3, P13). *P2: "[...] We usually do our main shopping on Sundays because we are free."* One participant specifically noted that they did not feel like they were doing smart grocery shopping when they were doing them last minute (P13). Timing also related to the seasonality and ripeness of produce bought or foraged (P2 & P3). Or the freshness of the food available on the market (P12) – the earlier the better.
Shopping routine	P1, P2 & P3, P4, P5, P6, P8 & P9, P12, P13	Having a set shopping routine helps the households to keep to the allocated budget. A routine also helps to stick to known cheaper products (P2 & P3, P8 & P9). For many their set shopping routine consists of going to several stores looking for the best price-quality deals (P1, P2 & P3, P4, P5, P6, P12, P13). *P6: "[…] That's why I go to different shops. And I look for specific products, enough for a week. It's not pleasant to go shopping every day."* The shopping routine is often linked to the opening hours of certain locations like the market or the egg farm (P12).
Alternative food locations	P1, P2 & P3, P4, P5, P6, P8 & P9, P10 & P11, P12, P13	Alternative food locations to supermarkets are visited by all the households. One of the frequently mentioned motives behind visiting such places as farms, markets, toko's, slaughterhouses, etc., are lower prices or better advertisements. All participants that make use of the market have pointed out its low prices (*see column Open- air market*). Some farms and local gardens are also referred to as cheaper food sources by P1, P8 & P9, P12. Households P1 buys cheap foodstuffs like coffee, cookies and beverages at *Action* (a discount store). While household P8 & P9 grow their won herbs at home and family P2 & P3 foraged berries in their neighbourhood. Other more lucrative food locations are slaughterhouse *Diepeveen Herveld B.V. (Herveld)* used by P2 & P3, P8 & P9, P12, some toko's in Wageningen, Ede and Duiven, *Kraats Eiren (Bennekom)* egg farm (P12), etc. *P12: "Go there because it is very super cheap. OK, like in a supermarket like 1 egg is more than 20 cents but there is like 0.16. And also the eggs are bigger than what I bought in supermarkets."*

		An online store called *Ochama* (see column *Online grocery stores*) is actively used by one participant (P12), while *To Good To Go* application is at times used by participant 6 to safe costs. Opting for affordable alternatives for restaurants (e.g., fast-food retailers) was mentioned by household P2 & P3.
Food sharing	P1, P2 & P3, P4, P5, P6, P8 & P9, P12, P13	Receiving food from family and friends is a common practice described in Chapter 6.2.3, which additionally helps the families to lower expenses of food. This also includes sharing meals with dear ones or splitting their costs. Joining free dinners at the Mosque Wageningen is another activity done by some household (P1, P10 & P11) (important to note that the free factor is not the main motivation for these households to join the dinners, as stated in the interviews). Foodsharing Wageningen is used by one household, through which free food is accessed (P8 & P9).
Preserving and/or processing food	P1, P2 & P3,	Food is preserved by the household in various ways to avoid wasting food and, thus, losing money. Freezing in meat bought in bulk (P1), making jam from foraged berries (P2 & P3) and preserving products sourced from home country (P8 & P9) are some of the examples.
Advance meal preparation	P10 & P11, P12	Tow households mentioned to prepare meals in advance either for the coming days ahead (for dinner) or to take to work. In both cases it was stated to help them safe costs.
Working in the food sector	P1, P2 & P3	Two participants (P1 and P3) work at a catering company through which they occasionally get free meals.
Receiving food from the foodbank	P4	Household P4 received food packages once a week. *P4: The Foodbank once a week, yes. What we don't get from the Foodbank, I get from the shops.*
Substituting products	P2 & P3, P6	Replacing expensive products with cheaper alternatives. Such as replacing Iranian products with more accessible Syrian, Kurdish and Turkish foods (P2 & P3).