



“The conscious is still asleep”

Exploring sustainable food perceptions among Kyrgyz
migrants and non-migrants

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Abstract

Food production and consumption have a major role in climate change mitigation processes. The global food systems must develop to be more sustainable as they currently are contributing to the anthropogenic pressure the ecosystems struggle to carry. However, there is no clear academic consensus on what “sustainability” in regards to food consumption is, how it is measured or when it is achieved.

This study adopts a social constructivist approach on the topic of sustainable food and explores individual sustainable food perceptions among Kyrgyz migrants and non-migrants. The study aims to reflect sustainable food perceptions in different food environments through a socio-environmental framework. The empirical data for this study was collected through semi-structured interviews.

This study identifies six themes that are influencing the individual perceptions of sustainable food. These themes are health, natural environment, privilege, culture, quality and global food system. The study concludes that even though the individual would not be familiar with the academic understandings of the concepts of sustainability and sustainable foods, the individual practices and perceptions can still be aligned with those understandings.

Keywords: sustainable food, Kyrgyzstan, migration, perceptions, socio-environmental influences

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1. Introduction

The global food systems must develop to be more sustainable: currently they are contributing to the anthropogenic pressure the ecosystems already struggle to carry (see e.g. Mason and Lang, 2017). Sustainable food systems are needed as food production and consumption have a major role in climate change mitigation processes (Jarmul et al., 2019). However, there is currently no clear academic consensus on what “sustainability” in regards to food consumption is, how it is measured or when it is achieved (Farley and Smith, 2014). For global food systems to develop towards a desired sustainability goal (see e.g. Sustainable Development Goals, United Nations, 2017), there needs to be a common understanding of the *meaning* of sustainability and sustainable food. To be able to understand sustainability and sustainable food, it is necessary to explore different perspectives on sustainable food and analyse how they have been constructed.

This study is approaching the topic of sustainable food through individual sustainable food perceptions. Individual perceptions of sustainability and sustainable food are significant part of the food system change, as people make consumption choices every day through deciding when and what to eat and in what company (Contento, 2011, p.27). These individual food choices are guided by multiple factors, for example, learned food experiences and the surrounding environment have been associated as potential determining factors in individual food choice processes (Contento, 2011, pp.26-39). Yet, previous research indicates that the public awareness of sustainable foods is limited and not always grounded in the scientific evidence (García-González et al., 2020). These facts demonstrate the need to study the individual sustainability perceptions.

This study is going to explore the individual sustainable food perceptions from the perspective of Kyrgyz people. Historically, Kyrgyz people have had a nomadic culture (Anderson, 1999), which has influenced the food consumption and production in Kyrgyzstan. However, during the Soviet times, the Soviet agricultural policies forced the nomads to settle down (Pianciola, 2017). At the same time, the Kyrgyz food culture was tried to be defined from outside: the Soviet Union aimed to categorise the peoples of the Soviet nations and created a narrative around the “others”, the non-Russian minorities (Alymbaeva, 2019). These narratives were strengthened through books, such as “National cuisines of our peoples” (ibid.).

Now it is climate change, not Soviet leaders that is forcing farmers in Kyrgyzstan to adapt their farming techniques; environmental problems and extreme weather events are pushing them to migrate and increasingly leading them towards poverty (FAO, 2020). It is likely that climate change will also influence the way we perceive sustainable food in the future (see e.g. Smith and Gregory, 2012).

1.1. Aims and research question

This study aims to investigate individual sustainable food perceptions through two cases: Kyrgyz migrants and non-migrants, thus seeking to gain a deeper academic insights into different ways of perceiving the concept of sustainable food. The overarching research question guiding the process is:

How is the concept of sustainable food perceived among Kyrgyz migrants and non-migrants?

1.2. Definitions

This section will provide definitions of the key terms used throughout the thesis. These terms are migrants and non-migrants, environment and food environment and sustainability.

1.2.1. Migrants and non-migrants

In the context of this study, “migrants” refers to Kyrgyzstan-born people who have migrated from Kyrgyzstan and “non-migrants” refers to Kyrgyzstan-born people who have never lived outside of Kyrgyzstan. More specifically, “migrants” participating in this study have migrated to either Sweden or Denmark. This study is using the term “Kyrgyz” to refer to Kyrgyzstan-born people while recognising that the ethnic identities of the participants might be more diverse. However, further analysing the ethnic identities of the individual participants goes beyond the scope of the thesis.

1.2.2. Environment and food environment

This study is using the term *environment* when referring to settings, networks and sectors surrounding an individual based on the definition by Story et al. (2008, p.254). The term *food environment* is used to describe environments where an individual connects and interacts with the surrounding food system (Turner et al., 2018). In earlier research, food environments have been divided into community food environments, symbolising the accessibility of food sources, and consumer food environments, symbolising the availability and cost of food (Glanz et al., 2007). Food environment has also been defined more holistically as the “collective physical, economic, policy and sociocultural surroundings, opportunities and conditions that influence people's food and beverage choices and nutritional status” (Swinburn et al., 2013, p.2).

1.2.3. Sustainability

The concept of sustainability is broad and vague and international academia is yet to arrive at a consensus on the meaning of *sustainability* (Farley and Smith, 2014; Nightingale et al., 2019a). Farley and Smith (2014, p.3) argue that the concept is over-used and “everything to everyone”, referring to how multinational actors have taken advantage of the ambiguity of the sustainability concept and

moulded it to fit their purposes. This study draws from a widespread understanding of sustainability, based on the 1987 “Our Common Future” report (WCED, 1987).

The United Nations’ World Commission on Environment and Development published a report titled “Our Common Future” 34 years ago, defining sustainability as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, para. 27). This definition became one of the most referenced understandings of sustainability in the academic community and provided a direction for academic sustainability discourses (Farley and Smith, 2014). The report mainstreamed the understanding of sustainability as a combination of economic, social and environmental components, however, it has been criticised for ignoring the interconnectedness between them (Farley and Smith, 2014, pp.7-8). According to Farley and Smith (2014), the report failed to acknowledge that the three components are unequally balanced in relation to each other and overlooked the fact that the existence of social and economic systems rely on the environmental system.

Still, even though the “Our Common Future” definition is an often-shared understanding of sustainability in academia, different disciplines might emphasise varying aspects of the concept in their research. Natural sciences often focus on the environmental aspect: biodiversity and ecosystem resilience, while economics focus on resources and anthropology on cultural perspectives (Farley and Smith, 2014). This study grounds the data collection discussions mainly on the environmental aspect but recognises sustainability as a multifaceted concept. This study is also going to separate *sustainable development* and *sustainability* as terms and will only focus on the latter. Sustainable development is the “realisation of sustainability” (Nightingale, Böhler and Campbell, 2019, p.5), and this study is interested in individual perceptions of sustainable food, not sustainable behaviour per se.

1.3. Delimitations

As discussed above, sustainability is a broad concept, which is why this study mainly explores it from the environmental perspective. Due to the limited scope of this study, the environmental perspective is studied only through individual sustainable food perceptions. Even though these perceptions might not manifest in the daily lives of the individuals, individual sustainable behaviours are excluded from the analysis since the study has a limited time-frame and the Covid-19 pandemic has narrowed down the available methods; with the travel restrictions and the social distancing recommendations, participant observation is currently not possible. However, focusing on individual perceptions is nevertheless highly relevant to broaden the academic knowledge of the different ways of perceiving sustainable foods.

1.4. Outline

The following chapter explores the relevant academic literature to situate this study within the academic discussions. Chapter 3 provides a brief background on global food systems and the geographical contexts of the study, Kyrgyzstan, Denmark and Sweden. Chapter 4 presents the theoretical framework the study will be based on and chapter 5 explains the methodology and the research design of the study. The findings are discussed in chapter 6 and finally, chapter 7 draws conclusions based on the research question and the analysed data.

2. Previous literature

This chapter presents the academic literature related to this study, focusing on sustainable food, individual perceptions, food environments and migration and food culture.

2.1. Understanding sustainable food

In social science, “healthy eating is understood as socially constructed, shifting discourse that shapes and is shaped by what people say and do in relation to food, and that is specifically implicated in the ways people understand and perform their social identities” (Beagan and Chapman, 2012, p.137). This idea of how perceptions of healthiness are formed and reinforced in the social and public discussions can also be applied to how perceptions of sustainable food are developed.

The understandings of sustainable food have changed and evolved in space and time; similarly to how culinary tastes and ideas of “good” food are tied to contemporary societal structures, such as ethnicity, social class and gender (Johnston and Cappeliez, 2012, p.50). A cross-country study by Sánchez-Bravo et al. (2020) suggests that consumers have not yet internalised environmental sustainability as a concept when making food-related choices and that the consumers’ definitions of sustainability vary depending on the context.

Academically, sustainable foods have been conceptualised for example by the Food and Agriculture Organization of the United Nations (FAO) as part of a sustainable diet framework (Lairon, 2012). The FAO framework comprises local, seasonal and eco-friendly foods and foods that are protective for biodiversity, environment and climate. It also accounts for nutritional needs; food security; accessibility; well-being and health; equity and fair trade; and cultural heritage and skills. This framework, however, lacks the contextual dimension of sustainable diets and does not consider how the sustainable diets change within time and place (Drewnowski et al., 2020). For example, the environmental impacts of food production and the social value of food vary depending on the

geographical environment and can develop over time, which are dimensions that the framework excludes (ibid.).

Close to the concept of sustainable food, food sovereignty is another way of understanding environmentally, socially and culturally resilient foods. Food sovereignty could be described as a bottom-up approach for sustainable food production; it has been defined as “the right of peoples and nations to control their own food and agricultural systems, including their own markets, production modes, food cultures and environments” (Wittman, Desmarais and Wiebe, 2010, p.2). Food sovereignty discourse focuses inherently on local and participatory development and the concept builds on a respectful human-nature relationship and values food as a sacred, non-commodity product (Nyéléni Forum, 2007).

2.2. Individual sustainability perceptions and behaviours

Individual sustainable food perceptions have not gained much academic attention. Individual food sustainability knowledge and attitudes have been studied in Spain using quantitative methods (García-González et al., 2020). Out of the 2052 people who participated in the study, 40.0 % believed sustainable food is a synonym for healthy food. Attitudes towards sustainable food among the participants were positive, however, the general understanding of the concept was unclear and not grounded in scientific evidence. The freshness of the foods, the amount of vegetables and respect to biodiversity were identified as factors increasing the sustainability of foods. Animal-based diets were seen as sustainable: more than half of the participants believed that meat has a positive effect on sustainability. Sustainable food consumption was valued as important, especially among women and older people, and women had a higher interest in sustainability compared to men.

Majority of the participants in the Spanish study (García-González et al., 2020) viewed meat as a sustainable food. Similar findings have been found in Australia (Lea and Worsley, 2008), where consumers linked individual meat consumption with the least effective way to impact the environment and associated organic food with sustainability. In Scotland, Macdiarmid, Douglas and Campbell (2015) found that despite general public awareness of climate change and the harmful environmental impact of meat production, people are reluctant to eat less meat for sustainability reasons. Previous research (Sánchez-Bravo et al., 2020) suggest that education levels and age influence the individual awareness of sustainability, and that older generations and people with low educational levels are less aware and less interested in sustainability-related topics and issues.

In addition to individual motivations and knowledge guiding food consumption, people might prioritise sustainability-related values differently when making food consumption choices.

Consumers' sustainability priorities in regards to food consumption have been studied in Italy (Peano et al., 2019). Among the 804 participants, environmental dimensions of sustainability were found to be prioritised, more specifically the preservation of natural resources. Other priorities were safe working conditions and access to food. The findings of Peano et al. (2019) support the general understanding of *sustainability* as a multifaceted concept; the three highest-prioritised factors can be linked to the environmental, social and economic components of sustainability as defined by the "Our Common Future" report (WCED, 1987).

Organic food and local foods are perceived as sustainable in the Nordic countries (Bosona and Gebresenbet, 2018; Paloviita, 2010). Bosona and Gebresenbet (2018) studied organic food perceptions in Sweden and found that consumers perceive organic foods as more sustainable than non-organic foods. However, similar to the difficulties in defining sustainability in the Spanish study (García-González et al., 2020), it was noted that defining the concept of organic foods and judging the sustainability of it can be hard for the consumers. Paloviita (2010) studied Finnish consumers' perceptions of local food; environmental sustainability of local food was linked to transportation, food processing and organic production. The study concluded that local *and* organic food was the most preferred choice of the consumers (Paloviita, 2010).

2.3. Food environments and food choices

This study understands "food choice" as the process of selecting food for consumption (based on Murcott, 1998). Previous research has found three dominant perspectives to explain food choice (Sobal and Bisogni, 2009). The rationalist perspective assumes that individuals make rational choices depending on costs and benefits, the structuralist perspective emphasises the roles of social institutions and environmental factors in determining the food choice, while the constructionist perspective builds on individual agency and views the decision-making process a series of interpretation and symbolisation through individual experiences (ibid.). This study focuses on the structuralist and constructionist perspectives and this section is going to discuss food environments in relation to food choice.

Food environments influence individual food-related behaviour (see e.g. Story, Neumark-Sztainer and French, 2002; Carrus, Pirchio and Mastandrea, 2018; Chen and Antonelli, 2020). Roudsari et al. (2017) have studied individual food choices in a sociocultural context in Tehran, Iran. The qualitative study explored the psychological, social and cultural determinants of food choices among 33 adults living in Tehran. Five psycho-socio-cultural themes influencing food choices were identified from the semi-structured interviews: cultural context and patterns; social structure and norms; information

resources and media; family structure; and transition in nutrition. Some of the participants perceived traditional Iranian food as healthier than fast foods, however, for some participants it was hard to add traditional foods in the menu as the traditional foods were not associated with the metropolitan lifestyle in Tehran. Religious eating principles, traditional social gatherings, food advertisements in media, and the socio-economic status of the family were also identified as influencers of food-related behaviour. The participants perceived that the food environment in Tehran is becoming more westernised with the rise of processed and sugared foods.

In a community context, the findings from Johnston, Rodney and Szabo (2012) illustrate how the surrounding food environments, together with socio-economic factors, shape daily food choices. They studied food behaviour of residents in two neighbourhoods with different income-levels in Toronto, Canada. The data was collected by interviewing families living in these neighbourhoods. The study found that the “prototypical neighbourhood diets” differed between these areas: in the wealthier neighbourhood, good health and local and organic foods were more available in general and prioritised by the residents, while in the lower-income area, the “neighbourhood diet” consisted of fast foods and reflected the residents’ economic constraints (Johnston, Rodney and Szabo, 2012).

2.4. Migration and food culture

When people migrate, their food and food-related representations and ideals migrate with them (Terragni and Roos, 2018). Earlier research suggests that migrants adopt the food culture of the new food environment through an acculturation process (see e.g. Bermúdez, Falcón and Tucker, 2000). Changes in migrants’ individual eating habits have been studied in Norway through the perspective of Pakistani women as well as women from South Asia, Africa and the Middle East (Mellin-Olsen and Wandel, 2005; Terragni et al., 2014). It was found that the Pakistani participants had adapted their food consumption to “balance the Norwegian climate and lifestyle” (Mellin-Olsen and Wandel, 2005, p.334). The participants from South Asia, Africa and the Middle East, however, found it challenging to adapt to the new food environment at first, as their knowledge on food and meal preparation in the new context was limited (Terragni et al., 2014). The dietary changes and challenges experienced by migrants have been linked to accessibility, availability and confidence in new foods (ibid.).

However, the process of acculturation, adaptation and dietary changes can happen on different levels: a study on Ghanaian migrants found that in some cases, the migrants abandoned their traditional diet completely whereas other times they maintain their diet while simultaneously adding influence from the new food environment (Osei-Kwasi et al., 2017). Moreover, in the migration process, food has a

potential to reproduce ethnic and sociocultural differences or symbolise belonging; Joassart-Marcelli, Salim and Vu have studied Vietnamese American food culture and noted that among second-generation teenagers, “white cafeteria food” is seen as universal while Vietnamese food is for “outsiders” (2018, p.226). The influence of migration in the prevalent food culture in the Nordic countries has not been studied in-depth and the existing knowledge on the sociocultural food-related aspects of migration in the Nordics is scarce (Terragni and Roos, 2018)

3. Background

This chapter provides a brief background to the globalised food systems and then introduces the specific geographical contexts of this study: Kyrgyzstan, Denmark and Sweden through a food culture perspective.

3.1. Globalised food systems in the Anthropocene

As mentioned in the introduction, the current food systems are contributing to the anthropogenic pressure the ecosystems have to carry (see e.g. Mason and Lang, 2017). Anthropocene is a term used to describe the current human-centred geological epoch (Crutzen, 2002). The Anthropocene denotes the exploitative ways of the current production and consumption systems and the force with which humans are shaping natural environments (Heurtebise, 2017). Food production and consumption systems in the Anthropocene are heavily globalised: the consumers in the Northern part of the globe are used to buying imported tropical fruits, often without questioning how the fruits are available in the supermarkets all year long (Nightingale et al., 2019b, pp.112-113). Joanna Blythman (2002) has named this phenomenon Permanent Global Summertime. The long food production chains, characteristic of the current food systems in the Western world, disconnect the consumers from the producers (Downey, 2011). There seems to be a clear distinction between community food environments and consumer food environments discussed in the introduction, the accessibility and availability are no longer dependent on each other.

Global, industrial food systems have been found to cause one-third of the global anthropogenic greenhouse gas emissions (Crippa et al., 2021). In addition to the greenhouse gas emissions, global food systems are linked to biodiversity loss and soil degradation (IPES-Food and ETC group, 2021). Structural changes are needed in order for food systems to become sustainable. Proposed changes include a shift from monoculture farming to ecosystem-led strategies, crop diversification, increased agroecological education and shorter supply chains (ibid; Weber et al., 2020). The need for structural change illustrates the need for a shared understanding of the concept of sustainable food.

3.2. Kyrgyzstan

This study is focusing on the individual perceptions of Kyrgyz people. The Kyrgyz Republic, hereafter Kyrgyzstan, is a land-locked Lower Middle-Income country (OECD, 2021) located in Central Asia that has a population of approximately six and a half million people (World Bank, 2019).



Figure 1. Map of Kyrgyzstan.

Kyrgyz culture has roots in nomadic lifestyle, where life followed the rhythm of the seasons and animals (Anderson, 1999, p.2). In the historical nomadic lifestyle, meat offered a significant source of nutrition, and ethnographical research from Kyrgyzstan suggests that the nomadic beliefs and traditions surrounding meat eating are still considered important (Japarov, 2017). For example, radial bones of animals have been believed to have protective powers in Kyrgyz culture and meat cutting and distribution still continues to be an valued ritual (ibid.). The nomadic culture of Kyrgyzstan was oppressed during Soviet times as industrialisation was prioritised and the voice of the nomad farmers was silenced when the Soviet leaders wanted to bring modernisation to Central Asia in the 1930s (Pianciola, 2017).

More than half of the population in Kyrgyzstan lives in rural areas and the agricultural sector employs 20.3 % of the workforce (World Bank, 2019; 2020). Extreme weather events, such as flooding and

drought, have become more frequent and more unpredictable in Kyrgyzstan in recent years (Camp Alatau, 2013). Even though the share of agricultural workers in Kyrgyzstan has decreased in the last 20 years, from 50.0 % in 2000 (World Bank, 2020), this data still implies that a large share of Kyrgyz people are depending on agriculture as their livelihood basis and thus are vulnerable to climate change.

The overall public awareness of environmental issues in Kyrgyzstan is limited and environmental sustainability is not a major driver of individual daily consumption practices (Shadymanova, Wahlen and Horst, 2014). Vegetarianism and other pro-environmental diet choices are associated with health motivations, while meat and meat eating are highly valued and considered an important part of every meal, highlighting the importance of the nomadic history in the Kyrgyz culture (ibid.).

In the context of Kyrgyzstan, the few studies on dietary habits in Kyrgyzstan are analysed from a health, nutrition and obesity perspective (WHO, 2013; 2020). The findings from a study exploring the urban street food environments in the Kyrgyz capital Bishkek indicate that homemade and traditional foods are more popular compared to industrial foods, although the widespread presence of soft drinks suggests “an increasing influence of the western diet” (WHO, 2017, p.12). The term “Western diet” in this context assumedly refers to the drastic global dietary changes in the last century; the “traditional”, mainly plant-based foods have been replaced with more processed, sweetened foods and animal products (Popkin, 2006).

Kyrgyzstan is a Muslim-majority country and Islam most likely influences the food choices of Kyrgyz people: the commitment to Islam is higher and the consumption of pork and alcohol is respectively lower in Kyrgyzstan than in neighbouring Muslim-majority country Kazakhstan (Himelfarb and Esipova, 2016). However, the Soviet past and the fact that the Soviet Union prohibited the practice of Islam has influenced the commitment to Islam in Central Asian countries; for Soviet Muslims, religion was an important part of their ethnic and social identities rather than a religious preference (Ro'i, 2000; Keller, 2001 in Himelfarb and Esipova, 2016).

3.3. Denmark and Sweden

Denmark and Sweden are relatively similar in terms of social and political institutions and both countries have been ranked at the top when assessing factors like social cohesion, gender equality and equal distribution of income (see Delhey and Dragolow, 2016; WEF, 2017; OECD, 2019). For example, both Denmark and Sweden rank among the top 10 countries in the Human Development Index consisting of life expectancy, education and economic indicators, while Kyrgyzstan is on the 120th place out of 189 countries (UNDP, 2020). Similarly, the GDP per capita based on purchasing

power parity in current international dollars in Kyrgyzstan is 5,486.155, whereas in Sweden it is 56,668.316 and in Denmark 62,134.028 (World Bank, 2019), which suggests that in Kyrgyzstan, the economic environment differs from the ones in Denmark and Sweden. In addition, both Scandinavian countries are considered key actors and precursors in shaping international sustainability policies (Pugh, 2020), which is why the countries were chosen for the context of this study.

Eating patterns in Denmark and Sweden have been studied through a survey conducted in 2012 (Gronow and Holm, 2019). The results show similar eating patterns in Denmark and Sweden: most of the people eat at home, either alone or with company, while eating in a restaurant constitutes only a minor proportion of everyday eating (Kahma et al., 2019; Holm et al., 2019). Previously done research indicates Swedes and Danes to be active political consumers in relation to environmental issues (Micheletti and Stolle, 2005; Tobiasen, 2005 in Niva et al., 2019). Based on results from a 2012 survey, Niva et al. (2019) found that people in Denmark and Sweden, as in all Nordic countries, have a positive attitude towards making more ecological food choices in their lives but that attitude does not necessarily reflect in their practices. People in Sweden were the most active in sustainable practices relating to food, and in general, women and older people were reported to be the most eager to participate in sustainable practices. Educational level or occupational status were not identified as factors influencing sustainability practices, demonstrating that sustainable practices are accessible to many socio-economic groups in the Nordic countries.

4. Theoretical framework

This chapter presents the framework guiding the analysis of the sustainable food perceptions. The framework combines two theoretical models, Socio-ecological model (Bronfenbrenner, 1979; 1986) and Environmental framework (Story et al., 2008).

4.1. Socio-ecological model

Bronfenbrenner (1979) created the Socio-ecological model to explore how contextual social environments influence the development of a child. The model places the child at the core of interdependent and interconnected levels of social environments, which influence and are influenced by the child. The theoretical model has later been used to explore individual behaviour in various studies, such as food choices (e.g. Story, Neumark-Sztainer and French, 2002), sexual decision making (Stevens et al., 2014) and inclusion of trans people in physical education (López-Cañada et al., 2019).

Bronfenbrenner's Socio-ecological model builds on the interconnectedness of the environmental levels in an individuals' life. The model views the environments as interrelated nested structures,

where each level is contained within the next level. Bronfenbrenner (1979) calls these levels microsystem, mesosystem, exosystem and macrosystem: the macrosystem includes all the previous levels. The *microsystem* is the individual level and comprised of the interpersonal interactions and social roles an individual has in the community. The *mesosystem* links the subjective microsystem, that is, individuals, with the surrounding social environment; the mesosystem is the interrelation of two or more microsystems. The mesosystem includes the interrelated interactions and participations in which the individual is actively involved. The *exosystem* broadens the environment to a larger social system. It involves all the situations influencing the individual indirectly, without active agency from the individual. In the life of a child, these situations could include the influence from the family's social networks or parents' workplaces, but also the government-level decisions and legal system. The *macrosystem* is the broadest level, including the beliefs, cultural ideologies and customs embedded in society.

Later, Bronfenbrenner (1986) added the *chronosystem*, referring to time, as part of the model. The chronosystem addresses the influence of the different stages and events in the life of an individual.

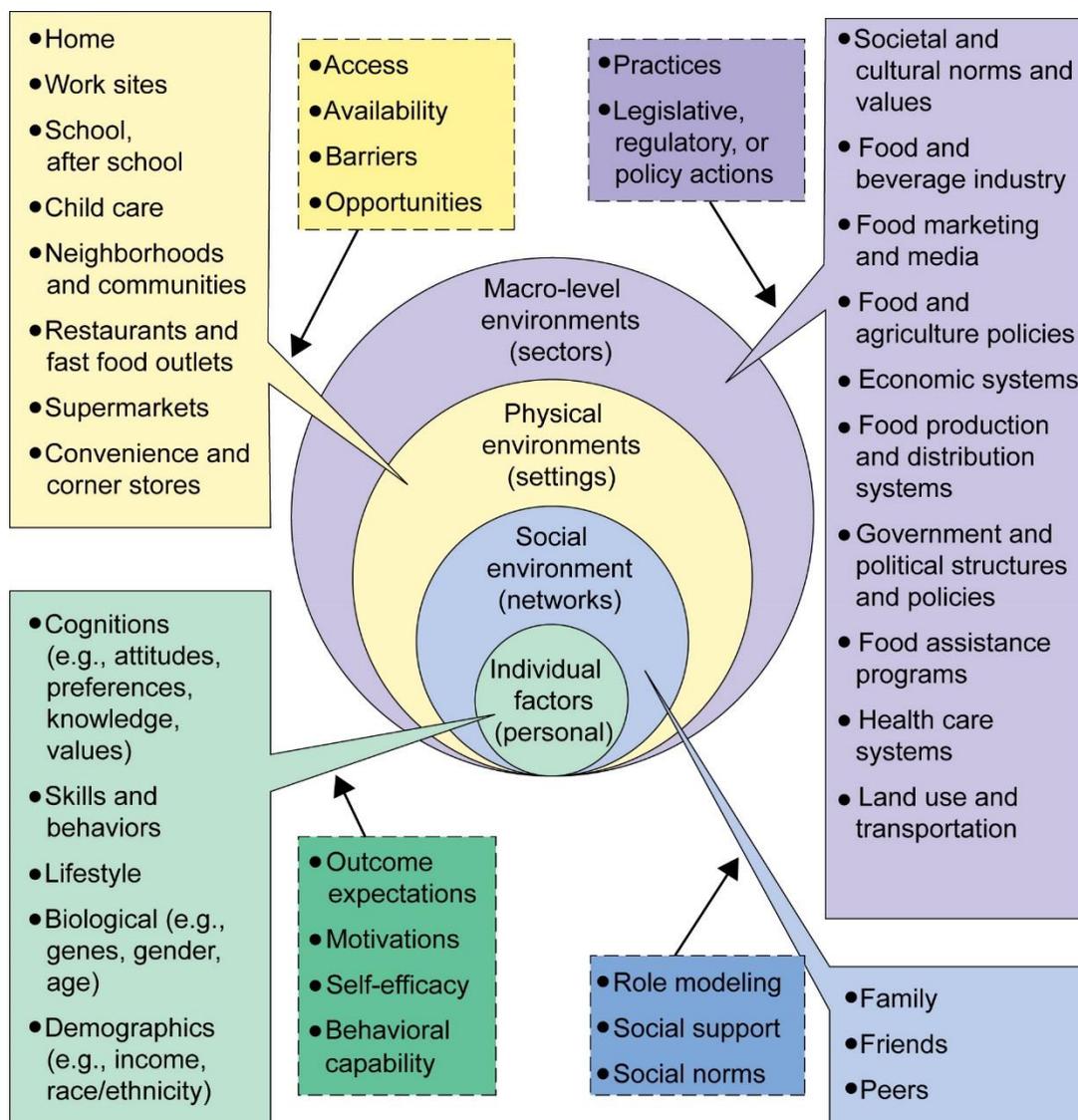
However, Bronfenbrenner's model only includes levels of social environments. This study is equally interested in the influences of physical environments, and broadens the theoretical perspective by merging the Socio-ecological model with the Environmental framework of Story et al. (2008).

4.2. Environmental framework

The Environmental framework builds on the empirical evidence of factors that have been linked to influence food choices. Story et al. (2008) analysed these factors to create a framework aimed at understanding how food environments influence food choices. The framework heavily draws on the food environments and food-related behaviour of consumers in the United States but this study assumes that the relationship between food environment and food choices is equally applicable to the Kyrgyz context.

Similar to the Socio-ecological model, the Environmental framework (Story et al., 2008) is built as a nested system of interconnected factors influencing food choices. These factors are individual, social environment, physical environment and macro-level environment. As illustrated in Figure 1 below, *Individual factors* include personal-level factors: attitude, preferences, knowledge, values and skills of the individual as well as demographic and biological factors (such as income and age). These personal factors influence food choices through for example motivation. The *social environment*, networks, includes the interactions with family and friends, influencing food choices through social support, norms and role modelling. The *physical environment* is comprised of the physical settings

where the food can be available, defining the opportunities and barriers for individual food consumption. Finally, the *macro-level*, sectors, reflects influences on a population level: it includes food production and distribution systems, media, agricultural policies and economic price structures.



AR Story M, et al. 2008. Annu. Rev. Public Health. 29:253–72

Figure 2. Environmental framework, illustration by Story et al. (2008, p.273).

Story et al. (2008) identify home environments as strong food choice influences within the physical environment, especially in children’s diets: the availability and accessibility of healthy foods in home environments have been linked to a higher intake of healthy foods and the meal frequency of the family shapes the meal practices of the children. School and childcare settings, the educational curriculum and national policies regarding them are another big influence in children’s diets through similar mechanisms as homes. The work place setting can act as a similar food environment for adults as the school does for children, based on the assumption that the adult is working outside the home.

National agricultural policies have a macro-level influence on individual food choices through supporting certain crops and practices (Story et al., 2008). For example, in Kyrgyzstan, the national development strategy addresses the current problems in agriculture and aims for improvements in the quality of land resources and irrigation systems to enhance the livelihoods of farmers and consequently the food security of the whole country (Kyrgyz Republic, 2018). Story et al. (2008) claim that in the United States, agricultural policies are not aligned with national health and nutrition goals, which results in unhealthy eating habits and argue that promoting local and regional food production would increase individual access to healthy foods. Academically, local and regional foods can be understood as sustainable (e.g. FAO framework, Lairon, 2012). National policies and governmental decisions influence also food choices through food prices: for example, in the United States, families and individuals might choose unhealthy food as a way to save money (Story et al., 2008).

4.3. Socio-environmental framework

The Socio-ecological model and the Environmental framework have been created to analyse the development of a child in their social contexts (environments) and the environmental influences of food choices, respectively. In order to create a framework that provides understanding of the individual sustainable food perceptions in the individual's social, physical and institutional contexts, this study is going to combine the Socio-ecological model with the Environmental framework to create a "socio-environmental framework".

The socio-environmental framework largely conforms to the Environmental framework: the environments and the influencing factors linked to the environments are adopted from Story et al. (2008). However, this study adds Bronfenbrenner's chronosystem as part of the framework, with the aim to analyse the change of perceptions and the factors influencing them through time. The chronosystem is the outermost layer of the combined socio-environmental framework. The inner layer is Bronfenbrenner's microsystem, which is linked to the individual level of the Environmental framework. It includes the personal attitudes, motivations, knowledge and values shaping the perceptions. Similarly, the mesosystem is linked to the social environment, the exosystem to the physical environment and the macrosystem to the macro-level environment. In the socio-environmental framework, the social environment includes the knowledge and values of family and friends. The physical environment defines the accessibility and availability of foods and the macrosystem includes the sociocultural and economic environments, influencing the food perceptions through social norms, economic structures, media and institutional systems, such as school education.

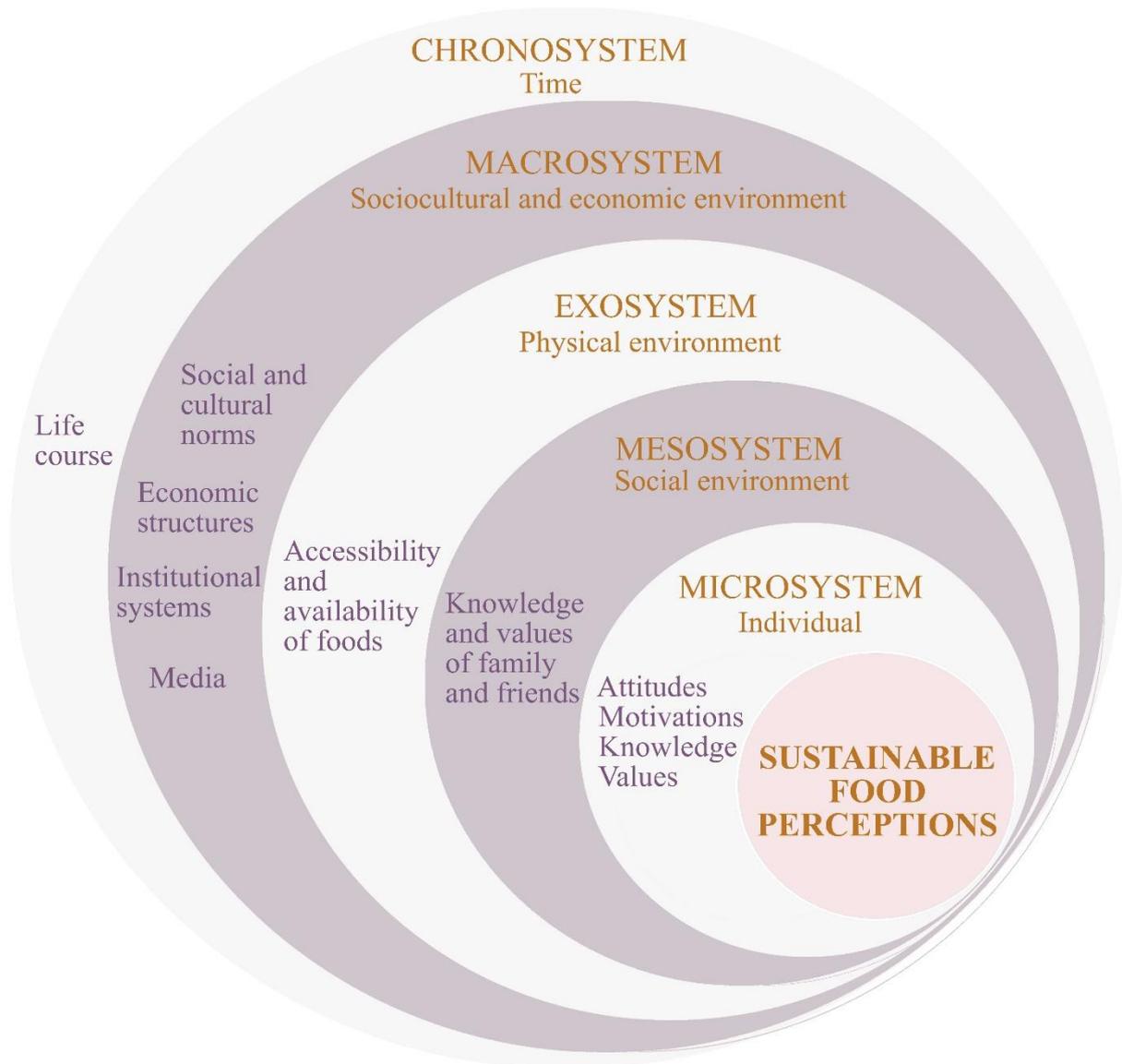


Figure 3. Visual presentation of the socio-environmental framework.

Based on Bronfenbrenner (1979; 1986) and Story et al. (2008). Own illustration.

Worth noting is that Bronfenbrenner’s Socio-ecological model only discusses different levels of social environments, while the combined socio-environmental framework links exosystem with the physical environment. Exosystem in the Socio-ecological model refers to larger social structures in the child’s life, such as family friends but also the government and legal system. In the combined socio-environmental framework the exosystem is linked to the physical environment, since in the Environmental framework by Story et al. (2008) the physical environment includes neighbourhood and supermarkets: settings, which can be classified as exosystem in Bronfenbrenner’s model.

In addition to chronosystem, another contribution this study adds to the Environmental framework is the emphasis of economic factors. This study wants to acknowledge the potential economic factors

might have in the development of sustainable food perceptions and thus incorporates economic factors as part of the socio-environmental framework under the term *economic environment*. As discussed in the background section, the economic environment in Kyrgyzstan differs from the ones in Denmark and Sweden.

The term economic environment has been used before in studies related to healthy food environments as economic factors have been identified to influence food consumption (see ANGELO framework by Swinburn, Egger and Raza, 1999). Similarly to the Environmental framework of Story et al. (2008), this study views the economic environment as a larger system that includes global market forces, which is why the economic factors are not seen as individual-level priorities or opportunities. The Environmental framework (Story et al. 2008) mentions media and marketing as part of the macro-level environment. However, it can be argued that the social media sphere has evolved since the publication of their framework in 2008, which is why the social media might now have different influences on food behaviour than in 2008. In a recent study it has been found that social media users are likely to follow the food habits their social media friends have, which was noted to influence the consumption of, for example, fresh fruits and sugared foods (Hawkins, Farrow and Thomas, 2020). Based on the networking aspect, social media could be counted as part of the mesosystem, but the socio-environmental framework draws on the Environmental framework and considers social media a part of macro-level media as social media also provides a platform for food-related marketing (Nicolai et al., 2021).

Bronfenbrenner's model has been accused of oversimplifying the interactions between the individuals and their environments; it has been argued that the model does not view the individuals as independent agents and influencers but rather always being dependent on their surrounding environments (Christensen, 2016). However, the Environmental framework (Story et al., 2008) fills this gap as it acknowledges the individual factors influencing food choices in a holistic way: their framework lists cognitions, skills, lifestyle, biological and demographic factors as personal-level influencers.

Furthermore, it needs to be acknowledged that the influence of the levels in the framework might be unevenly emphasised in the individuals' lives; socio-cultural environments might be more important than physical environments (Brug et al., 2008). However, the levels are treated equally as valuable in the socio-environmental framework as this study is not aiming to prove which factors have the strongest influence in sustainable food perceptions. The study is going to use the combined socio-environmental framework in the data analysis by applying the layers to the collected data in the coding phase. The findings will also be discussed thematically through the socio-environmental layers.

5. Research design and methodology

This chapter presents the research design of this study and the methodology used in collecting the empirical data. First, the chapter discusses the epistemological and ontological positioning of this study, then the data collection and analysis processes, followed by ethical considerations and limitations of this study.

5.1. Overall research design

The epistemological and ontological positions this study is taking belong to constructivism, the assumption that people give meaning to things through the social interactions and cultural norms operating in their lives (Bryman, 2012, p.33). Social constructivism, implies that the nature of reality (ontology) consists of multiple realities that are constructed through individual experiences and interactions and that the knowledge of these realities (epistemology) is co-constructed between the researcher and the researched and is shaped by their individual experiences (Creswell and Poth, 2018, pp.24, 35).

This study aims to explore sustainable food perceptions in different food environments through two cases: Kyrgyz migrants and non-migrants. The research question already suggests that this study is deeply contextual and interested in subjective interpretations and perceptions, which is why the study chooses a qualitative collective case study design. The collective case study method has an instrumental nature as opposed to intrinsic case studies (Creswell and Poth, 2018, pp.98-99). In an instrumental case study, the focus is on a specific phenomenon and the case is selected to illustrate the phenomenon in a context, while an intrinsic case study draws attention to a unique case and the case is of interest itself (ibid.).

The study will follow Yin's approach to multiple case studies, where a multiple case study is seen as one of the variants of case study methodology and the multiple case study method is not distinguished from a single case study one (Yin, 2009, p.53). The case study approach allows for an in-depth inquiry of the phenomenon in its specific context, which is essential for this study (Yin, 2009), and qualitative data enables the author to express the perceptions of the participants in their own words (Graebner, Martin and Roundy, 2012). In the context of this study, this means that the phenomenon of sustainable food perceptions is studied holistically through the contexts of Kyrgyz migrants and non-migrants, without comparing the cases but rather combining them to create a comprehensive overview.

5.2. Data collection

The empirical data was collected through semi-structured interviews. Semi-structured interviewing as a data collection method enabled the study to collect data that is not available elsewhere (Willis, 2006, p.146) while being aligned with the ontological and epistemological position of Social constructivism (Creswell and Poth, 2018, p.35). Semi-structured interviews allowed the discussion to flow while the interview guides (Appendix 2, Appendix 3) ensured that all the interviews covered similar topics to gather the necessary data to answer the research question (Bryman, 2016, p.168). Moreover, the semi-structured interviewing technique was beneficial for this study as the topic of sustainable foods is broad and this study wanted to focus on the environmental aspect of sustainability. Without the interview guide, the discussions might have steered too far away from the focus.

In total, 11 semi-structured interviews with 12 participants were conducted (see Table 1 for the demographics). This sample could be described as an “exploratory sample” (Descombe, 2010, p.37), as it is a non-representative small-scale sample (the sampling process is explained in detail in the next section). The length of the interviews varied from 25 minutes to 1 hour 40 minutes, the average length being 52 minutes. All the interviews were conducted in English.

Three interviews with four migrants were conducted in May 2020. Two of these were individual interviews: one Zoom interview (with participant A) and one in-person interview (with participant D). The third interview was an in-person group interview with two participants (B and C) upon their request. All of these interviews were audio-recorded with the participants’ consent and the author has been given a written consent from each participant to use the recordings and the transcriptions as data for this study in spring 2021. Originally, these interviews in May 2020 were conducted as part of a final project for a human geography course, and the focus of the data collection was on the sustainability perceptions and food consumption habits of Kyrgyz migrants living in Sweden and Denmark.

In addition to the already collected data, seven individual interviews were conducted in March and April 2021 with two migrants and five non-migrants. Six of these interviews were Zoom interviews and one was an email interview. The interview guide from the 2020 interviews (Appendix 2) was re-evaluated and updated to better suit the aim of this study and the questions were narrowed down to only consider food perceptions instead of food behaviours. The new interview guide (Appendix 3) was used to steer the discussions in the interviews in spring 2021. All the Zoom interviews were audio-recorded with the consent of the participants.

The participants were given the opportunity to choose a preferred platform for the interview (Zoom or email; in May 2020 also in-person interview). Two of the 11 interviews were in-person, one was an email interview and eight were Zoom interviews (see Table 1). In the beginning of each interview, a consent form (Appendix 1, adapted from the consent form used in the earlier phase of data collection in May 2020) was read out loud, to state the aims of the study and the voluntary nature of the interview. The collected data, namely the recordings and transcriptions, were stored on a personal laptop protected by a password.

5.2.1. Sampling

The participants were sampled using generic purposive sampling (Bryman, 2016, p.416). Every participant had to fit the criterion of the cases of this study and be either a Kyrgyz migrant in Denmark or Sweden or a Kyrgyz person living in Kyrgyzstan. Moreover, all the sampled participants had to be over the age of 18 for ethical reasons and be able to participate in the interviews in English. The language as a sampling criterion already significantly limited the generalisability of the study: according to the 2009 national census, only 1.2 % of the adult population spoke English fluently (National Statistical Committee of the Kyrgyz Republic, 2009). This implies that in Kyrgyzstan, people who are able to participate in a data collection interview in English represent only a small, educated sample of the population. Thus, the empirical data collected through the interviews only represents some of the perceptions of the Kyrgyz people and might miss some perspectives completely.

The ages of participants varied from 21 to 39, with the average age of participants being 27. Even though some studies (García-González et al., 2020) have included a gender analysis when exploring individual food-related sustainability perceptions, this study intentionally chose to exclude the gender aspect, as it is out of the scope of the study.

Table 1. Demographics of the participants.

Participant	Country of residence	Position	Date and type of the interview
A (migrant)	Denmark, for approximately 5 years	working	May 14, 2020, Zoom
B (migrant) C (migrant)	Sweden, for approximately 1 year Sweden, for approximately 1 year	working working	May 14, 2020, in-person
D (migrant)	Sweden, for approximately 2 years	student	May 21, 2020, in person
E (migrant)	Denmark, for approximately 2 years	working	April 1, 2021, Zoom

F (migrant)	Denmark, for more than 5 years	student	March 22, 2021, Zoom
G (migrant)	Sweden, for more than 5 years	working	April 8, 2021, Zoom
H (non-migrant)	Kyrgyzstan (Bishkek), from Osh	working	March 22, 2021, Zoom
I (non-migrant)	Kyrgyzstan (Bishkek), from Batken region	working	March 28, 2021, Zoom
J (non-migrant)	Kyrgyzstan (Bishkek), from Issyk Kul region	working	March 29, 2021, Zoom
K (non-migrant)	Kyrgyzstan (Bishkek), from Talas region	working	March 29, 2021, Zoom
L (non-migrant)	Kyrgyzstan (Osh)	student	Email ¹

The majority of the participants in this thesis study, in both of the data collection phases, were found with the help of a Swedish NGO Central Asia Solidarity Groups (CAG) based in Malmö. This form of snowball sampling strategy was adopted as it best provided access to a hard-to-reach population (Bryman, 2016, p.419).

In May 2020, two interviews with three participants were organised with the help of CAG's connections in Malmö. In February 2021, CAG provided a list of 10 people, out of which nine fit the "non-migrant" case criteria and one fit the "migrant" criteria. These people were contacted directly in February 2021 to inform them about the aims of the study and to organise the interviews. Out of these nine people, four were interviewed, three were eager to participate but due to the tight time frame of the study had to withdraw, and two did not answer.

In addition to the help of CAG, two people, fitting the "non-migrant" case criteria, were contacted in March 2021 through a Kyrgyz NGO Novi Ritm, based in Osh (capital of Osh region, see Figure 1 for map). One of these contacts led to an interview.

The help of these organisations was essential for the success of this study as the global Covid-19 pandemic limited the data collection and sampling opportunities. Moreover, contacting the potential participants through these organisations likely enabled the study to benefit from the already established connections and trust between the organisations and the individuals. The credibility the study potentially gained from these organisations was meaningful for the author since the pandemic and the travel restrictions hindered the natural formulation of personal connections and trust between the author and the participants.

¹ The questions, together with the consent form, were sent on the 28th of March 2021, and the answers were received on the 31st of March 2021.

In order to reach the Kyrgyz migrants in Sweden and Denmark, the study utilised an opportunistic convenience sampling strategy in both of the data collection phases. Convenience sampling refers to a strategy where the study chooses to include individuals who are easy to reach, and in opportunistic sampling, the participants are found through “unexpected” leads (Creswell and Poth, 2018, p.159). The opportunistic convenience sampling strategy of this study involved publishing two posts in a closed Facebook group for Kyrgyz migrants in Scandinavia. The closed Facebook group had 37 members in March 2021 and only the members can see the posts and react to them; one of the previously sampled participants added the author to the group in May 2020. The first post was created on May 4, 2020, resulting in one participant reaching out. The second post was created on March 2, 2021, which resulted in the sampling of two participants. The relatively low engagement with the posts might be a consequence of language barriers considering the languages of the group are Kyrgyz and Russian.

5.3. Data analysis

The analysis followed the data analysis spiral suggested by Creswell and Poth (2018). They visualise the data analysis process as a vertical spiral, starting from collecting the data and ending in presenting the findings. The in-between consists of managing and organising the data; reading and memoing emergent ideas; describing and classifying codes into themes; developing and assessing interpretations; and representing and visualising the data (Creswell and Poth, 2018, p.186).

After the interviews, the audio-recordings were transcribed manually. The process of transcription is inherently selective (Davidson, 2009), which is manifested in this study through filtering out repetitions, such as “I think, I think...” while transcribing. Manual transcription was used to avoid losing any data; occasionally, the context was needed to understand the meaning of certain words, as English is a foreign language for both the interviewer and the interviewee. The need for contextual understanding was demonstrated for example in a situation where the participant used a local word for a specific type of pasture and then explained it as: “the pastures where animals are being grown and they [the animals] are kind of free...” (Participant G). Transcribing manually was also a way for the author to “revisit” the interview situation and reflect on both the situation and the discussions.

The transcriptions and the answers from the email interview were then coded. The first round of coding consisted of Initial Coding, coding of similarities and differences, which is considered to be the starting point of qualitative analysis (Saldana, 2013, p.100). In Initial Coding, broad themes of sustainable food perceptions were identified in the participants’ responses. This was done holistically across cases, meaning the responses of migrants and non-migrants were coded simultaneously with

the aim to find common themes (Creswell and Poth, 2018, p.100). In some interviews, these broad themes were manifested differently in the responses; these differences were coded as “sub-themes”. The codes from the first round are presented in Table 2 below.

Table 2. Themes and sub-themes.

Themes²	Sub-themes
Definition of “sustainability”	
Privilege	Accessibility and infrastructure, urban vs. rural, economic opportunities and priorities, Kyrgyzstan vs. Scandinavia, access to information
Natural environment	Local, seasonal, knowledge on food production, concept of “harm” vs. concept of “sustainability”
Health	Individual diet, chemicals and pesticides, quality of food
Culture	Religion, hospitality, nomadism, traditions
Global food system	Trends, globalisation, “Western concept”, imported food
Waste	Not wasting food, the lack of recycling infrastructure in Kyrgyzstan

After identifying the themes and sub-themes from the responses, these thematic codes were connected to the a priori codes. These beforehand determined, a priori codes were identified from the socio-environmental framework: individual, social environment, physical environment, macrosystem and time. The aim of the second round was to analyse how these perceptions have formed and where the participants have received the knowledge they have. However, it was necessary to add a code to describe the situation where the background for the perception or opinion could not be identified. These were coded as “ambiguous”. Table 3 exemplifies the second round of coding:

² These are all the different themes risen during the interview discussions. The findings and discussion (Chapter 6) is structured based on the most commonly discussed thematic areas, which were: health, natural environment, privilege, culture, quality and global food system.

Table 3. Extract from the second-round coding table.

Theme	Socio-environmental influence	Example quotation
Privilege	Individual	“[Choosing pro-environmental diet] is not common, for sure. It is more like even privilege, because being eco-friendly takes lots of your energy and also money.” (H)
	Social environment	“Most of the time, we don’t know what this is all about. Because it is habit, you were grown up like this, you were told like this, so if you don’t see other practices there is nothing to compare. That’s why I think there is a little bit of lack of information.” (A)
	Physical environment	“In my hometown, there are no big supermarket. [...] Even the sausage, if you go to our market in Kyzyl-kiya, my home city, you can see there are not a lot of options. [...] In Kyzyl-kiya city, I think everyone eats almost the same food.” (J)
	Macrosystem	<p>“It is hard, you know, to make people think about that [environment and climate change], the poverty rate is high. The people, they have nothing to eat. They don't think about the sustainability, climate change.” (J)</p> <p>“Recycling... we don’t have recycling. Some people do recycle, like plastic, but it is just voluntary thing that you do, but it is not for everybody.” (E)</p> <p>“It’s cool, when there is some communities, some countries that can allow their citizens to think like proper food consumption, but... because there are conditions. But in Kyrgyzstan we don’t have that. Even like when we talk about healthy food and stuff like that, it’s again talking about communities that can afford buying healthy food.” (C)</p>
	Time	“In Kyrgyzstan, my generation, my grandparents and myself, it is, like, totally different. I mean, one of my grandmothers, I think, she couldn't even read. Or maybe could read, but couldn’t write. So they were busy finding food, feeding their kids. They wouldn’t have even understood what it [sustainability] is about.” (E)
	Ambiguous	

The third round of coding followed a within-case-analysis strategy, where the migrants and non-migrants’ responses were analysed separately (Creswell and Poth, 2018, p.100). This allowed the focus to shift from the common themes to the individual experiences of the participants. In the third

round, the aim was to find differences and similarities between the two cases and the participants' responses, to analyse whether the process of migration has influenced the perceptions. The themes identified in the third round were: awareness; differences between Kyrgyzstan and Sweden/Denmark; and differences between rural and urban areas in Kyrgyzstan. These themes were connected to the socio-environmental framework, as Table 4 shows:

Table 4. Extract from the third-round coding table.

Reflections on migration	Socio-environmental influence	Example quotation
Differences Kyrgyzstan and Sweden/Denmark	Individual	“Here [in Denmark], if I have leftovers, for example, I learned to freeze them, everything [...]. I learned to freeze everything, apple cakes even.” (A)
	Social environment	“My sister recently told me: “You brought some new stuff, some new understanding”, because when I learn something [in Denmark], I always share with them.” (A)
	Physical environment	“Of course here [in Denmark], you have access to more variety of product.” (E)
	Macrosystem	<p>“[In Sweden] it [sustainability] is just, I would say, part of the society. So much... mainstreamed. In a good way. Even with the plastic bags now in the supermarkets. You have to pay for them. You are like, you become more conscious.” (D)</p> <p>“Here [in Denmark] you talk about it [sustainability] all the time. So, somehow it goes into your brain and you start thinking, you are reconsidering your actions more. You start thinking and become even more aware of the thing.” (A)</p>
	Time	“Completely different here [in Denmark]. I feel like people can stop and think and analyse and decide what they want to do. And then just gradually, with very small steps and with very... with a life-work balance, they just do step by step, how they want to sustain their environment, what they want to do. Then they have a plan and they do it over ten years. And they have it predictable. In Kyrgyzstan, no. The government changes every day [...]. Nothing is predictable.” (E)
	Ambiguous	

5.4. Positionality and ethical considerations

The potential differences in the ontological and epistemological understandings between the author and the participants might have influenced the way the participants understood the interview questions. Similarly, the ontological and epistemological positioning of this study influences the ways the author has interpreted and analysed the data and presented the findings.

There might be cultural and religious perspectives that are missed in the analysis due to the personal religious and cultural background of the author. Furthermore, the experiences and background of the author are swaying the way the data is collected, interpreted and analysed (Hammett, Twyman and Graham, 2015, p.147). As a 23-year-old woman, I felt the most comfortable interviewing participants belonging to a demographic group I consider myself belonging to, for example participants close to my own age, perhaps because I found it easier to relate to their experiences and stories. Moreover, coming from Finland, I have been exposed to the concept of sustainability already in my early school years and I have grown up in socio-ecological environments where I have had the possibility to choose my personal diet. These factors might have also influenced the participants' responses, they might have answered what they thought is socially acceptable or what they thought I as an interviewer wanted to hear; this kind of social desirability bias has in previous studies been linked to participants' attitudes and responses in health and food-behaviour research (see e.g. Bir and Widmar, 2020). I also realise that the topic of food might be sensitive or complex for the participants in ways, which I might never be able to fully comprehend, based on my experiences.

In the sampling phase of the study, the potential participants were provided with the topic and aim of the study. The consent form (Appendix 1) was sent to the participants before the interviews to ensure they had the opportunity to read it beforehand and familiarise themselves with the aims of the interview if they wished. The consent form was also read aloud before the interviews. Before starting to record the interviews, I received verbal consent from the participant to do so.

This study presents the demographics of the participants on a table (Table 1). Only information that is considered to be relevant for the analysis, such as age and years lived in Scandinavia, have been provided to protect the identities of the participants. According to Statistic Sweden (2020), there were 1370 Kyrgyzstan-born people in Sweden in 2020. Similarly, in Denmark, as of January 2021, there were 105 Kyrgyzstan-born people (Statistic Denmark, 2021). Providing more detailed descriptions of the participants might risk revealing their identity, given the low numbers of Kyrgyz migrants in Denmark and Sweden. For the same reason, no further details of the Facebook group used for sampling participants are provided.

5.5. Limitations

The used language is one of the biggest limitations of this study. This study did not have the resources to arrange an interpreter for the interview sessions, which has impacted the sampling process and the collected data. The study acknowledges that the participants, or I as a Finnish native, might not have been able to convey the meanings of their thoughts in English similarly compared to their first languages.

Secondly, weak external validity, that is, generalisability, is a limitation of the case study method in general (Bryman, 2012, p.405) and this study specifically. While the aim of this study is not to generalise the findings, it is still important to reflect the homogeneity of the participant sample. At the time of the interviews, all of the participants lived in cities. In some contexts, it has been noted that urban populations experience nature and the uses of nature differently from rural population (Berenguer, Corraliza, and Martín, 2005). It could be assumed that the food environments in urban settings differ from those in rural settings, not only through the availability of food products but also through differences in food security and vulnerability to climate change. Urban and rural food environments might also require different levels of agricultural knowledge and skills, factors that might influence food perceptions.

The fact that the study sample is so urbanised alone suggests that the findings cannot be generalised and are not representative of the Kyrgyz population; as of 2019, 36.5% of the people in Kyrgyzstan lived in urban areas (World Bank, 2019). Moreover, all of the participants are academically educated and speak English. Together with the sampling criteria (English-speakers), the sampling strategies used for the data collection might have inherently lead to this participant bias, since the snowballing strategy provided access to people who were young (under the age of 40) and city-dwellers. These facts limit the empirical data and the analysis: the study cannot reflect the chronosystem influences from as long time-period as it could if the participants were older and had experienced for instance the macrosystem political changes of Kyrgyz independence as consumers.

Thirdly, the data collection process had to be adjusted according to the global Covid-19 pandemic, which has impacted the sampling process and the collected data. The majority of the interviews were held over Zoom, which made it possible for the participants to choose a comfortable time and place to participate in the interview session. This, however, is based on the assumption that they have access to the Internet in places they feel comfortable. Overall, internet connection might have had a key role in the Zoom interviews since unstable connection might have affected the way the proposed questions are heard or understood. Technical issues were present luckily only in one of the Zoom interviews, where the audio of the participant was briefly lagging behind.

Moreover, the lack of previous academic literature on individual food behaviours and perceptions in Kyrgyzstan and Central Asia has been a limitation for this study, as it has made it impossible for the study to triangulate the findings. Most of the previous literature is written from a Western perspective and this study has assumed that the concept of sustainable food as such can be applied in the Kyrgyz context.

Lastly, due to the time-frame and the scope, the study chose to narrow the focus in the beginning on environmental sustainability and environmentally sustainable food perceptions, which guided the selection of the interview questions and thus the interview discussions. However, it proved difficult to keep this focus as all the aspects of sustainability are interlinked and all of the participants discussed economic, environmental and social aspects of sustainable food.

6. Findings and discussion

This chapter is going to present the perceptions of sustainability and sustainable food among the participants and discuss the findings in relation to the previous literature and the socio-environmental framework.

6.1. Perceptions of sustainability

In order to analyse the participants' perceptions of sustainable food, first, this study will take a closer look in their perceptions of *sustainability*. The associations towards the concept of sustainability were overall positive among the participants, which is aligned with the findings of García-González et al. (2020). Their perceptions reflected the ambiguous nature of the concept and their definitions approached the concept from many perspectives. Some participants conceptualised sustainability through the end goal: "What could sustainability mean to me? I guess peace" (Participant C), and "Sustainability refers to balance and equality" (Participant L). Other participants viewed the concept as a journey through time while others viewed it as their life principle:

The main idea for myself is that the different generations should think about how to preserve the natural resources, how to preserve our planet for the future, generations to be able to believe in sustainability [...]. This is something that goes on beyond time. (Participant G)

Principle I live by. I want to care, not only for my needs when I do my daily activities. But also people around me. As well as, just being more conscious. (Participant D)

In general, sustainability was perceived as a positive relationship between an individual and/or a community and the surrounding environments. The concept of sustainable food, however, was somewhat harder for the participants to define. Public sustainability awareness in Kyrgyzstan is limited (Shadymanova, Wahlen and Horst, 2014), which seems to reflect back on the individual awareness of sustainable foods, both among the migrants and non-migrants:

Maybe I'm not still... didn't get the idea what is sustainable food. I'm comparing it, like not sustainable but healthy food. I think it is different a little bit. (Participant I)

I heard something about sustainable development and something like that. But I never heard about sustainable food, never. (Participant J)

I don't really know [what sustainable food is], because we have never thought about these kind of things. Probably, consuming something that is less processed. To grow your own yard and to be more natural, like, in the villages, where you produce yourself everything, in a natural way. Whereas we consume a lot of processed food, which damages the environment as well. (Participant B)

These quotations illustrate how, despite having a perception of sustainability as a concept, it can be difficult to conceptualise *sustainable food*. All the participants agreed that their knowledge on sustainability reflects to their thinking of sustainable foods. In the context of Kyrgyzstan, the lack of practical sustainability knowledge the participants experienced was identified as one of the barriers hindering sustainability mainstreaming:

I think most of the population, I don't say that all of the population, they don't have this idea of what sustainability means in practice and what it means to them. Even myself, I don't know what sustainability really means from a starting point until the end point, so I'm not an expert. (Participant G)

The quotation above also reflects the lack of confidence the individuals might have in their own knowledge surrounding the concept of sustainability and thus demonstrates the need for accessible sustainability information and education in Kyrgyzstan. Participant B links consciously chosen pro-environmental diets to individual interest, which manifests in the individual's will to seek more information: "If somebody chooses to be a vegetarian [in Kyrgyzstan], that means they [are] well self-educated, like researched, interested." Similarly, participant H emphasises the significance of individual resources and priorities when making environmentally friendly food consumption choices:

"[Choosing a pro-environmental diet] is not common, for sure. It is more like even privilege, because being eco-friendly takes lots of your energy and also money." (Participant H)

These quotations suggest that being able to prioritise environmentally sustainable food in Kyrgyzstan, a person needs to have knowledge, economic resources and energy. Even though these quotations focus on the influencers of *behaviour* rather than *perception*, it has been noted that food-related behaviour can be guided by perceptions (Story, Neumark-Sztainer and French, 2002), which is why it could be assumed that similar factors that influence food-related behaviour also influence food-related perceptions. The next sections will discuss the perceptions of sustainable food through the most commonly discussed themes the study has identified from the interviews: health, natural environment, privilege, culture, quality and global food system.

6.2. Sustainable food through a health perspective

Empirical findings from an earlier study by Shadymanova, Wahlen and Horst (2014) indicate that people in Kyrgyzstan associate environmentally sustainable diets with health motivations. This study has similar findings. Additives, chemicals and pesticides were generally perceived as unsustainable and unhealthy among all the participants. The personal experiences and knowledge on the food system the participants had were guiding the way they perceive the healthiness and sustainability of food, especially among the non-migrants:

“In June, the watermelon start to ripen, you can already eat it but if you wait until July or August. Because we know that in the beginning, in June, they use lot of chemicals. To grow them faster. So it is not good for health. Not everyone, for instance, in Bishkek, most people they don’t know about it. But because I’m from the South, we used to grow vegetables... we don’t have a big farm but I know because my relatives have.” (I)

In this quotation, the participant highlights how their knowledge on the Kyrgyz food production is linked to their social and physical environments, which illustrates the importance of microsystem-level experiences and physical and social food environments in shaping the sustainability perceptions. The physical environment was also linked to the healthiness of products in Kyrgyzstan:

In regions, I go and eat knowing it is more healthy than in Bishkek, because I know that they did grow in their gardens, it is grown without any kind of [added] vitamins, any kind of extra something. (Participant K)

“Regions” in this contexts refers to the Kyrgyz regions (see Figure 1 for map), which are less urbanised as the capital region Bishkek (ESCAP, 2020). In addition to the physical environments, the chronosystem was linked to development of health-related food priorities and attitudes: “Now when I’m mother, when I know about my health, when I [am] consciously eating, I know that I need to eat more fresh food, more vegetables” (Participant K). Ferreira Moura and Aschemann-Witzel (2020) have studied the influence of parenthood to healthy food perceptions among French and Danish parents and their findings conclude that becoming a parent made “unhealthy” eaters adjust their eating habits while “healthy” eaters found it sometimes challenging to maintain their eating habits as new parents. This then suggests that parenthood can also influence the perceptions of sustainable food.

6.3. Sustainable food in harmony with nature

The participants in the Spanish study (García-González et al., 2020, p.11) evaluated “respecting the biodiversity” as an important factor when determining sustainable food. The participants’ narratives in this study support the earlier findings: eight of the twelve participants talked about the importance of transparent and environmentally conscious food production. In general, both the migrant and non-migrant participants perceived the national food production in Kyrgyzstan as sustainable and

respectful towards the nature. This perception was strengthened by microsystem-level knowledge on the Kyrgyz food production system: “I know my country, I know that our cows and sheep, they are grown in natural area, like in meadows, and they eat fresh grass” (Participant H). One non-migrant participant also perceived the majority of the national production to be organic, which is why “many people in my country do not take a big consideration while purchasing” as they know the production is respecting the nature (Participant L). The Kyrgyz food production was linked to the nomadic history and the historical way of producing food was perceived as sustainable and appreciative towards the nature:

[In Kyrgyzstan] we also have this natural understanding from the ancient times as well. We don't keep the animal at the same [place] all the time. Because we always shift and change, because we let the nature recover. So in that matter, I guess we are being a little bit less destructive in contributing to the climate change [than other countries]. (Participant B)

However, the participants also perceived that the food production systems are changing. One migrant participant reflected the chronosystem influences in the Kyrgyz food production and perceptions:

I think, historically, we were not that big nation and we were living... we had nomadic lives. So I think the group mentality still thinks that nature gives us everything and we can just use this place because you know, when you use one, like, you are staying in one place, staying in one gorge, and after a while, you move to another gorge, and you let this gorge recover from your animals. But right now, we have settled, but I still think, we have this nomadic mentality, we think we will use and then the nature will recover but it's not so... (Participant A)

This quotation also reflects the ubiquity of climate change and its impact on the agricultural sector in Kyrgyzstan. As mentioned in the background section, extreme weather events and land degradation are forcing the Kyrgyz farmers to migrate, which compromises their income and pushes them towards poverty (FAO, 2020). Overall, the migrants perceived the food production in Kyrgyzstan to be more sustainable than in Denmark or Sweden, which also reflects in the macrosystem-level differences between Kyrgyzstan and “the global North” as expressed by a migrant participant:

[In Kyrgyzstan] animals are basically free, they are in the mountains, in [Kyrgyz word]. That's the name of the pastures where animals are being grown, and they are kind of free and basically the animals are being grown in a sustainable way, in humane way, rather than if you compared to Swedish type or other types in the global North, how inhumane the factories are. (Participant G)

The participant refers to industrial farming, which has become the prominent model of farming in Scandinavia in the last century; with mechanisation, fertilisers and pesticides, Sweden and Denmark followed the European trend of intensive farming and small-scale family farms grew larger and the amount of farms decreased (Brock, 2019). The participant associates large-scale farming with unsustainability and smaller farms and conscious local consumption with sustainability:

When it comes to food consumption in Kyrgyzstan, people are [more] sustainable than for example in Sweden. What I talked about, the food is grown locally, in smaller villages and people only buy necessary items of food. (Participant G)

In general, both the migrant and non-migrant participants highlighted the seasonality and locality of the food products in Kyrgyzstan. Seasonal and local products were viewed as sustainable: “[Food in Kyrgyzstan] is mostly nationally grown. You won’t find strawberries in winter. So, in that sense, I find it to be good [sustainable]. To eat what is seasonal” (Participant D). Local production refers to shorter production chains (Kiss, Ruskai and Takács-György, 2019), which in turn have been linked to environmental sustainability (Paloviita, 2010). However, reasons for preferring local food can differ and might not always be sustainability-related: findings from Paloviita’s study (2010) suggest that older generations value the safety and familiarity associated with the local products, while younger population recognises the environmental issues connected to the transportation and thus prefer locally produced foods.

6.4. Sustainable food as a privilege

As discussed above, local food was viewed as sustainable among the participants. However, in some physical environments, local food might also be the only available option, as the oldest participant in Paloviita’s study (2010) notes: in Finland local food was the only option after the Second World War. The chronosystem influence of the Second World War was also recognised in the Kyrgyz context:

It [the respect for food] came from the Second World War, there was lot of shortage of the food. People were dying from hunger. That is where the respect comes from, from those times. That's why people have big respect for the food. Not only in Kyrgyzstan but all post-Soviet countries. (Participant J)

This quotation from a non-migrant participant reflects the respect for food and resources, which was presented as a central part of Kyrgyz culture in the interviews (see 6.5. Sustainable food in the cultural context). This quotation also illustrates how the possibility to reflect the food choices and choose a consciously sustainable diet is dependent on the physical environment: food availability and accessibility. In general, the participants noted that in Kyrgyzstan, it is still not realistic for everyone to make food *choices*, especially when it comes to sustainable foods. One non-migrant participant summarises this shared thought: “If you are poor, you don’t think about nature” (Participant I).

The participants’ perception on the interconnectedness of economic opportunities and sustainability are aligned with Inglehart’s post-materialism hypothesis (2020). The post-material hypothesis has been used in earlier literature to analyse the individual attitudes towards sustainability (Sánchez-Bravo et al., 2020). Sánchez-Bravo et al. (2020) discussed the development of individual environmental concern through the post-materialism hypothesis. The post-materialism hypothesis proposes that in the Western countries, the economic development of the societies created generations

with higher materialist values but later, when the priority shifted from survival to the quality of life, the generations grown in economic stability have post-material values (Inglehart, 2020). Sánchez-Bravo et al. (2020) linked environmental concern to post-material values.

In addition to the economic resources, the access to information was also discussed from a privilege perspective. As quoted earlier, participant B considered the individual interest and quest for learning to be major influencer of pro-environmental diets, such as vegetarianism. This view also underlines how important the microsystem-level sustainability knowledge is in shaping individual perceptions. In Kyrgyzstan, the information about sustainability in local languages is very limited:

We don't have that knowledge, it's not transported into our language so everybody can understand and learn. Not everybody is exposed so that's why everybody is being ignorant of these kind of things. It's not that they choose to be, it's just that they don't know about it. (Participant B)

Furthermore, the physical environment was identified as a possible agent in hindering or improving the access to information. The following quotation from a non-migrant participant emphasises the importance of education and equal access to information and reflects the macrosystem-level influencer potential of social media:

For example, in the region, one of the most [common] source, just television, but in Bishkek, we have like Wi-Fi everywhere and then have Internet, Instagram, like all the portals about information. But, in some villages they [have] even no [access to] Wi-Fi, even now, they are stuck only with which is told in television. (Participant K)

Still, in earlier research, it has been noted that despite the access to knowledge, the consumers might not know the exact definition of sustainability or sustainable food (García-González et al., 2020; Sánchez-Bravo et al., 2020). The migrants pointed out that even though people in Sweden and Denmark have access to information, not everyone acknowledges the climate change in their daily lives or makes conscious pro-environmental consumption choices:

Even in Sweden, I don't believe that all people are aware about the climate crisis. And even though even 99% of people have access to internet, 99% have access to all the infrastructure and people are safe, they have the safety net and they don't have to worry about that [priority needs], while in Kyrgyzstan, then this is different. (Participant G)

However, the participants perceived that the exosystem, that is, physical environment has a significant role in supporting the possibility to make food choices by defining what foods are available for the individual. All the migrants perceived that they have a wider range of products to choose from in their current physical environments than in Kyrgyzstan. Even inside Kyrgyzstan, the non-migrant participants experienced a difference between the rural regions and the more urbanised capital region Bishkek:

In my hometown, there are no big supermarket. [...] Even the sausage, if you go to our market in Kyzyl-Kiya, my home city, you can see there are not a lot of options. [...] In Kyzyl-Kiya city, I think everyone eats almost the same food. (Participant I)

Both the migrant and the non-migrant participants recognised inequalities in economic and educational opportunities within the macrosystem in Kyrgyzstan and identified these inequalities between the capital and the rural areas, the “regions”:

For example in region, for them just they have to eat, that's it. But, for example, in Bishkek people think about their future: how do they get older, they want in all their lives to be healthy, to live more and they eat now healthy food to live more. But in I guess in the regions it's opposite: they don't think because they don't... their income. (Participant K)

In rural [areas], it's immediate needs [that are prioritised] while Bishkek has infrastructure and people have potentially more time to reflect and think about: “Okay, this is not good. This is good.” Then people are, I would say, people have more education, more higher-level education [in Bishkek] than in the rural areas. (Participant G)

In my city, I never thought about sustainable [food]. What my mom prepare, we eat it. Now [in Bishkek] we have choice because we have money to buy. (Participant I)

The participants’ narratives followed the post-materialism hypothesis by Inglehart (2020) when they explained the sustainable behaviours: the participants recognised that when there are have more economic opportunities, the individuals can also spend more time consciously thinking about sustainability. Still, living in rural areas was also seen as an opportunity to eat sustainably as in the urban areas people only have the options of buying food:

...because if you move to the village-side, people are more, they have gardens and it’s cool, they are more sustainable in that way. But if you go to the city, there is no possibility to do that, so you get in to this consumption thing and just keep doing it. (Participant B)

The quotation above reflects the participant’s own attitude towards food production and illustrates the significance of individual cognitions in the microsystem-level (attitudes, knowledge, skills) in constructing sustainable food perceptions.

6.5. Sustainable food in a cultural context

Ethnographical research from Kyrgyzstan suggests that meat continues to have an important role in the Kyrgyz culture (Japarov, 2017). Similarly, the findings of Shadymanova, Wahlen and Horst (2014) indicate that meat is a major ingredient in the Kyrgyz food consumption. In this study, eight out of the twelve participants highlighted the nomadic history and the significance of meat in the Kyrgyz culture. The quotations below illustrate how the nomadic history is embedded in the current Kyrgyz food culture and how it guides the public discussions around food:

We do eat a lot of meat, right. The stories tells us... that people would just eat, I don’t know, a horse [laughing], a horse maybe, and a lamb once a day or a week. And then they would continue because

they were nomads and living in the mountains and they would move a lot and they would need that much of meat. Of course, we don't need so much meat [anymore], but we still do eat that much of meat. (Participant E)

If you say "I'm vegetarian", there are some people who would answer you "But it's not in our culture! It's not in our blood! We are Kyrgyz people, we always eat meat! Are you denying our culture?" something like that. And then "you need to follow our traditions", and when you ask what traditions, what values are you talking about, they cannot give you a proper answer. (Participant C)

Sustainability was also seen as an integral part of the culture, especially among older generations: "they have more respect [towards food] than we do now" (Participant J). Overall, it was seen that in the Kyrgyz culture, it is important not to waste the resources:

I think, Kyrgyz people are actually more sustainable [than Danish people]. But they don't know it, I think it is just part of the culture, the nomadic culture, just use what you have because you are kind of poor and you use all your resources. (Participant F)

The appreciation of resources in the Kyrgyz culture is also manifested in the food waste practices; both the migrant and non-migrant participants agreed that food waste is unsustainable. However, during big traditional events, such as weddings, it was perceived culturally important to show hospitality: "we have to have a whole lamb to show our hospitality, we should [have] horse meat, or cow meat, but not think about, I guess, sustainability" (Participant K). Other participants recognised this dissonance as well:

Because it's nomadic culture and Central Asian culture, the more horses you can buy, the more status you can show. The more people you invite, the more status you can show to other people, like "oh, we have money, oh, we are respected family". So very rich people in Kyrgyzstan, they invite, I don't know, one thousand people to one wedding or one funeral. To feed thousand people, you need many horses and sheep. (Participant F)

We have big traditional events, like holidays, like weddings. During such events we make a lot of food and we just throw it [the left-overs] away, despite the fact that many people in Kyrgyzstan, they are Muslims and even in the religion, you are not allowed to throw and waste food. (Participant C)

In addition to the macro-level traditions, majority of the participants had learned about food from their social environments. The influence of the surrounding culture and family traditions were identified to shape the food perceptions especially during the participants' childhood, as expressed by a migrant participant:

Most of the time, we don't know what this [sustainability and sustainable food] is all about. Because it is habit, you were grown up like this, you were told like this, so if you don't see other practices there is nothing to compare. That's why I think there is a little bit of lack of information. (Participant A)

The family traditions can also follow the traditions of a larger community. One migrant participant remembers how their family used to follow the rhythm of harvest seasons together with the whole neighbourhood:

It's not only my family, it was a collective thinking in my neighbourhood, in my community. You know, like, there are mini bazaars [markets] all over the place over the Osh, usually a huge truck with potatoes comes and stands for three days in a row at the bazaar. And then people come, they take sacks, they buy potatoes, and then they take it home. Yeah, planning is always there somehow, it eventually becomes intuitive: "It's May and May is the season for raspberries." You buy a huge number for raspberries and you preserve them for winter. Potatoes were always bought in August, September. It just natural... it's a cycle. It is, it was, basically part of life. (Participant G)

Yet, even though following the harvest seasons and buying local and seasonal food can be seen as sustainable (e.g. FAO framework in Lairon, 2012), it seems that the food-related behaviour and consumption in Kyrgyzstan is not always consciously pro-environmental. Rather, the behaviour consists of learned values and traditions that have historical roots. Seasonality and the appreciation of resources, for example, are values that can be included in the academic understanding of environmental sustainability. The advice the participants have learned as children often guides them later in life: "Growing up my mom said "Don't waste, finish your food", still now I'm like I need to finish my food" (Participant D). One participant recalls how their family never bought readymade or frozen foods because they were considered unhealthy and the perception still guides their consumption:

Even though I live in Sweden, everything is ready, you can buy everything in the shop, I still have this, you know, small voice in my head: well, this is not healthy. (Participant G)

Sometimes the family environment is valued higher than the other social environments. Ten of the twelve participants brought up their experience that Bishkek, the Kyrgyz capital, has a different atmosphere compared to other regions in Kyrgyzstan: "Bishkek is more European" (Participant G) and the people in Bishkek are "more European in the mind" than people in the rural areas (Participant F). This "Europeanness" was presented in contrast with the historical Kyrgyz values. In the food context, the "Europeanness" might be connected to the concept of dietary westernisation, where diets become more processed and sweetened (Popkin, 2006). One non-migrant participant reflects the importance of family values in the urban, "European" settings:

Let's divide it based on cities and also based on families. For example, cities, there are some of my friends that were grown in cities [...] and they can convert to follow more this global trends and process and to work out your own ways, your own culture. And I call them "too liberal people" [laughing] and also if it is family-based, like there are families that they were born and raised in cities, but still, inside family, they live really old style. (Participant H)

In the context of the migrants, the atmosphere in Denmark and Sweden was described as more sustainability-oriented than in Kyrgyzstan. This atmosphere was linked to macrosystem and better economic resources of the countries but also to the social and physical environments. It was perceived to be easier to recycle in Denmark and Sweden than in Kyrgyzstan due to the existing infrastructure but also because "it is really cool, people understand and they think it's cool, we think it's cool, too"

(Participant B). One migrant participant summarised the difference in macrosystems between Kyrgyzstan and Denmark:

Here [in Denmark] you talk about it [sustainability] all the time. So, somehow it goes into your brain and you start thinking, you are reconsidering your actions more. You start thinking and become even more aware of the thing. (Participant A)

The migrants also reflected the differences in the political culture in Kyrgyzstan, Sweden and Denmark. The macro-level atmosphere in Sweden and Denmark was viewed as beneficial from sustainability perspective:

[It is] completely different here [in Denmark]. I feel like people can stop and think and analyse and decide what they want to do. And then just gradually, with very small steps and with a life-work balance, they just do step by step, how they want to sustain their environment, what they want to do. Then they have a plan and they do it over ten years. And they have it predictable. In Kyrgyzstan, no. The government changes everyday, and it is just a mess, and people can not... yeah. Nothing is predictable” (Participant E)

The non-migrant participants also recognised the rapid changes in the political sphere in Kyrgyzstan:

We have revolutions, we change every time, a lot of politics. Politicians don’t think about this [sustainability] stuff, they think about the power. To implement [solutions for] some big problems, you need someone who will work for years. Not changing every time. (Participant I)

These quotations illustrate the importance of long-term planning and the influence of chronosystem in achieving widespread sustainability awareness and encouraging the sustainable consumption practices.

6.6. Sustainable food associated with quality

In the same way as the consumers in Spain (García-González et al., 2020), the participants of this study also linked sustainability to the quality of foods. The knowledge regarding the quality of foods was often passed on inside the family as one non-migrant participant explains:

My family, we always used to go to the market. My family has taught me how to select the proper apples, for example, proper vegetables. You have to touch it, weight it, smell it. I guess everyone learns from their parents. (Participant J)

The quality of foods was perceived an important factor particularly when making food purchases. The migrant participants noticed a change related to the opportunity to select food comparing Europe and Kyrgyzstan:

When I moved to Denmark, I was asking my mother why the apples were identical at the supermarket. [...] Because in my opinion, apples should be different, because that's what I saw in the markets [in Kyrgyzstan]. That was also what I saw in my grandparents garden: the apples were different, depending on where they were in the tree, how much sun they got. But when you came to Europe, you saw in the supermarket that they were identical. (Participant F)

This quotation reflects the layer of individual factors in the socio-environmental framework: the perception of quality can be subjective, which is why it was seen as unsustainable when the food system only offers identical fruits. The subjectivity of quality perceptions was also expressed through the perceptions of local and imported foods among the non-migrant participants in Kyrgyzstan: Participant L prefers local products, since products from “overseas” are not “persuasive with quality”. On the contrary, participant K has heard of a stereotype that imported foods are safer than the locally produced, since the labels in imported foods often clearly state “produced without GMO (genetically modified organisms)”, which they perceive as sustainable. They continue to explain how the quality of the imported products varies and how the experienced quality, together with the eco-labels, shapes the perception of sustainability of the imported foods:

Vegetables and foods for example from Turkmenistan, from Turkey like oranges for example in winter, they are tasty, more tasty, than for example China. [Laughing] Yeah, and, we recognise this, for example China, is creating not healthy, not organic. (Participant K)

The quotation above illustrates how the experienced quality reflects to the perception of bigger food production systems. When the food production of a certain area is known to be of good quality, the foods from the area can be perceived as sustainable. The perception of sustainable food as good quality food is wide-spread, and the quality can be linked to experience and knowledge of the local and regional food systems as one migrant participants describes:

My grandma always taught to me that you need to buy some vegetables or fruits from a special region, because they are best in this region. I think in Kyrgyz culture it is a norm that you hear from parents or grandparents that you need to buy milk or tomatoes from this market because they are the best and because they are locally produced. That sentence I have heard many times from my aunts and mother and cousins, they always say that you need to go to this specific market to buy food because it is locally produced and it is very good [quality]. (Participant F)

Previous research on sustainability perceptions shows that short food chains and local food are perceived to have better quality (Paloviita, 2010). Experience is one example of how individual factors, such as taste preference, can influence those perceptions, as participants L and K discussed. However, the experiences might not always be individually experienced; they might be learned, as participant F continues to note:

In my grandma’s point of view, I think sustainable food... it’s not about organic or not, it is about quality. It needs to come from areas where it has grown and produced that are very popular, or known for being of good quality. Because I remember when I was young, she was telling me that you need to buy pepper fruits from some kind of valley in Uzbekistan, or I don’t know where it was... I don’t know, can’t remember, but she knew the regions where to buy high quality food. And maybe it was that she learned from her mother. (Participant F)

The quotation expresses how the individual can value the knowledge in their social environments, follow the practices and believe the perceptions of their family and friends through role modelling and social norms.

6.7. Sustainable food and the global food system

The participants recognised that the sources of information regarding food in Kyrgyzstan have changed over time. As discussed earlier, social environments and family were identified as one of the most important sources of food-related information in the participants' childhood. In recent years, the macrosystem perceptions surrounding food have broadened and the information shared in the family might be influenced by a chronosystem change:

Mostly at that time [childhood], our family was the, like number one to give us knowledge on food. You know, in Kyrgyzstan, people at that time, we never differentiate food, like being bio or eco-friendly. It is just food was just food, you know. [...] Now, we all know that everyone has to have their individual diet. [...] I think that is, thanks to like my university. Or, yeah, I think it is just because of the time, like, now school children, they also know everything that I know, I guess. I hope so. (Participant H)

What needs to be remembered is that the quotation above represents the view of one non-migrant participant, and thus might reflect more their individual education than the educational development of the macrosystem. However, the following quotation indicates a shift towards more “European” style eating habits among the younger generation in the urban areas of Kyrgyzstan, indicating a macrosystem change:

I have a lot of cousins that are my age. When we meet, we meet in a European way, at a coffee bar drinking a beer or coffee but when we go to the family [laughing] it changes to tea and sheep meat and Kyrgyz food. [...] I have some cousins that every time we get lunch, we go to a Kyrgyz place, to eat Kyrgyz food. When you are visiting those places you can see a huge difference. We are the only young people there. At this restaurant, it is mostly elderly people there, because they have grown up with Kyrgyz food. And we are the only young ones there. (Participant F)

This observation is aligned with the view of “city” and “family” based individuals in the reflection of participant H discussed earlier: some urban individuals value traditions while some value the opportunities in the urban environment. Participant L also recognises that in Osh, capital of Osh region, there are some vegetarian restaurants “where most of the time, young people go”.

One of the non-migrant participants raised the issue of corruption and pointed out that even if the consumers wanted to choose pro-environmental food in Kyrgyzstan, they cannot always trust the eco-labels. Transparency International's Corruption Perceptions Index ranks Kyrgyzstan 124 out of 180 countries; Sweden is ranked the third and Denmark is ranked the first (Transparency International, 2020). This data suggests that in Kyrgyzstan, corruption is much more prevalent than in Sweden or Denmark, which then might influence the trust in eco-labels. The participant, however, has a positive

outlook on the future and believes that the chronosystem might influence the way eco-labels are perceived: “Maybe now I won’t trust it [eco-labels]. But I hope that in the future, maybe my children will trust our governments” (Participant H).

The issue of eco-labels and corruption demonstrates how the macrosystem influences the means and motivations for sustainable behaviour of the individuals, thus shaping the perceptions of what is *realistic* to perceive as sustainable. Especially the non-migrant participants reflected the macrosystem, which was perceived as a significant factor in providing the opportunity to spread sustainability awareness and opportunities in Kyrgyzstan:

It is hard to know the future. It [thinking about environment when making consumption choices] depends on how neighbouring countries and we will be economically. Our political... politicians also [need to] be dedicated about this. Media... we can talk about it in the media, but if you don’t have money, you can’t really make a big change. (Participant I)

Most surprisingly, some of the migrant participants raised the question whether sustainability as a *concept* is inherently too “western” for Kyrgyzstan:

People might believe that sustainability, it is not for us, we have been working like this since a long time ago, and sustainability is just another way of the West to interfere in our local traditions in our local morals, in our local things. Because mostly the talks about climate crisis and sustainability come from the global North, or the West, how people say in Kyrgyzstan. (Participant G)

This view aligns with the values of the food sovereignty movement, which emphasise the right of the peoples to define their food cultures and environments in an environmentally respectful way (Wittman, Desmarais and Wiebe, 2010). Similar participatory approaches are also present in the National Development Strategy of the Kyrgyz Republic (2018), which highlights the importance of the local culture and the local voices: “Kyrgyzstan cannot copy someone else’s development model based on alien patterns” (Kyrgyz Republic, 2018, p.5).

Based on the previous discussions in this chapter, it could be concluded that overall, the participants’ perceptions on sustainable food had roots in the Kyrgyz agriculture: nine of the participants were aware of the local or global food production systems, through first-hand experiences or learned knowledge. The findings indicate that individuals can engage in sustainable food-related behaviour without having a clear perception or academic understanding of sustainable foods as a concept. Participant B summarises the discussion surrounding sustainable food in the Kyrgyz context: “We are not approaching it [sustainability] consciously. The conscious is still asleep. Because we don’t have the information.”

7. Conclusion

This study has explored individual sustainable food perceptions and their influences through two cases: Kyrgyz migrants and non-migrants. In general, the participants had positive associations with sustainability, however, it was hard for them to conceptualise sustainable foods due to the lack of sustainability-related knowledge, reflecting the limited sustainability awareness in Kyrgyzstan. The participants conceptualised sustainable food through the following themes: health, natural environment, privilege, culture, quality and global food system.

The findings of this study indicate that the perceptions of sustainability can look different in different environments: in the rural areas, sustainability might be associated with local production and in urban areas, it can manifest through pro-environmental diets, such as vegetarianism. In some environments, the basis for sustainability is grounded in poverty and lack of economic opportunities rather than active choices, however, that does not make the practices less *sustainable*. Even though the individual would not be familiar with the academic understanding of sustainability or sustainable foods, the practices and perceptions they hold can still be aligned with the shared understandings: the practices and perceptions can exist independently from the knowledge of the concept.

The findings of this study support the idea that the physical environment shapes the perception of sustainability by defining what is available and accessible, that is, what is *realistic* to perceive as sustainable food. In that sense, sustainability can also be personal: it is shaped by the surrounding physical setting, but also by individual experiences and taste preferences. The migrant participants perceived the sustainability-oriented macrosystem in Sweden and Denmark as supportive in relation to their awareness of sustainability.

This study has shown that the socio-environmental framework provides a holistic approach in understanding individual perceptions in a specific context and allows the sustainable food perceptions to be discussed through food environments and individual values. The findings of this study, however, are not generalisable, which underlines the need for future research regarding sustainable food perceptions. Further research in the field is needed in different geographical environments, broad and local, and especially in the Central Asian context, in order to build a comprehensive picture of the ways sustainability and sustainable food can be understood and perceived. Moreover, future research could analyse which layer of the socio-environmental framework has the strongest influence on the individual sustainable food perceptions, compare the development of the perceptions in different macrosystem environments and explore the development of the perceptions through longitudinal research design.

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Appendix 1

Consent form

March 2021

My name is Susanna Mäkelä and I am studying development studies with a major in human geography at Lund University, Sweden. This semester, I am doing my final thesis about the environmentally sustainable food perceptions of Kyrgyz migrants and non-migrants. The aim of the study is to analyse how the social relations and the geographical place influence the sustainable food perceptions Kyrgyz people have.

You are invited to participate in my thesis project, as you belong to my case study community. The information I will gather from our interview session will only be used as data for my thesis. I will present the data in a way that the answers cannot be tracked down to individuals. Your participation is voluntary and you can withdraw at any point without giving me a specific reason.

The interview will take around one hour. For the interview, I will create a Zoom room with a passcode to ensure that the discussion is confidential. With your permission, I will audio record the interview to help the transcription and analysis.

Appendix 2

Interview Guide, May 2020

1. Can you tell me a little bit about yourself? (How old are you, are you studying or working?)
When did you migrate from Kyrgyzstan?
2. What does sustainability mean to you? What does it mean to “be sustainable”?
3. How do you view sustainability in Kyrgyzstan?
4. What sustainable activities (that you consider sustainable) were you doing in Kyrgyzstan, personally?
5. Has the idea of sustainability changed for you since moving to Sweden?
How?
6. What sustainable activities are you currently doing in your daily life here?
7. What are your thoughts on climate change?
Do you think that the food industry contributes significantly to climate change? If yes, how?
8. What does sustainability with regards to food choices and consumption mean to you?
9. How have your food consumption habits changed since moving to Sweden?
10. Are you eating the same foods here than you ate in Kyrgyzstan? What kinds of food are you eating here?
11. What did you eat in Kyrgyzstan that you no longer eat here? Why?
12. What do you consider sustainable food?
13. Do you know the definition of the terms veganism and vegetarianism?
14. Do you think that vegetarianism or other actively chosen pro-environmental diets are common in Kyrgyzstan? Why?
15. Is it important for you to reduce food waste?
How did you reduce food waste in Kyrgyzstan? How do you reduce food waste in Sweden?
16. When you are at the grocery store, does it matter to you whether the product is organic or has eco-label? Why/why not?
What about plastic wrappings? Would you choose the plastic-free options?
17. Do you feel like you have enough knowledge on sustainable food choices?
Where do you get this knowledge? Where would you like to get the knowledge?
18. Have you adopted any new practices here in Sweden when it comes to food consumption and sustainability? Do you think you will keep doing the new practices when you go back to Kyrgyzstan?
19. Do you find that the approach to food and consumption-based sustainability is changing in Kyrgyzstan? If yes, what are these changes and the reasons for them?

Appendix 3

Interview guide, March 2021

Background	Sustainability	Influences	Migration (for migrants)
Tell me a little bit about yourself	What is sustainability to you?	What have you learned in school about food? What have you learned in school about environmental sustainability?	Has your perception of sustainable food changed since you moved to Scandinavia? How? What do you think is the reason for it changing/not changing?
How old are you?	What is sustainable food for you? Where did you learn this?	What have you learned from your family about environmentally sustainable food?	Have your food consumption habits changed since you moved from Kyrgyzstan? How?
Where did you grow up?	What is unsustainable food for you? Where did you learn this?	Has the idea of sustainability changed for you since you grew older? Or moved from your parents' place or started studying? How? Why?	Where have you learned the new habits?
Where do you currently live?	What makes food environmentally sustainable?	Do you think you share the same idea of environmental sustainability and sustainable food with your grandparents? Why? (What has changed?)	Do you think you would keep these new habits if you moved back to Kyrgyzstan? Why/why not?
Are you studying or working or something else?	Do you think you would consider some foods sustainable if you were living in a different place? For example: city/rural, different country Why? Do you think the term "sustainable food" has the same definition everywhere?	What kind of public discussions have you noticed around the topic of environmental sustainability and sustainable food in Kyrgyzstan?	What kind of public discussions have you noticed around the topic of environmental sustainability and sustainable food in Scandinavia? Are they similar to the discussions in Kyrgyzstan? Why do you think so?