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Consumers in limbo; How the COVID-19 pandemic has changed local food consumption in Tehran

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Abstract: The present paper investigates the impacts of the COVID-19 pandemic on consumer behavior related to local food products (LFPs). The study relies on the interpretation of in-depth interviews (N=26) conducted through phone calls in Tehran City (Iran) before the second lockdown, between 23 September and 27 October 2020. The results reveal substantial changes in buying behavior and food habits. Our findings present four behavioral categories with different underlying motivational factors: (i) ceased consumption, (ii) reduced consumption, (iii) unchanged consumption, and (iv) increased consumption of LFPs. The results show that reduced accessibility during the lockdowns inhibited some respondents from acquiring the products they wanted. Moreover, health concerns due to distrust of food safety made some consumers hesitant about local food consumption. Our findings enhance understanding of how and why pandemics like COVID-19 may affect food habits and, consequently, attitudes and behaviors towards local food consumption. As consumption is constrained by time and place, the study contributes by bringing a localized perspective into consumers' understanding of "local" products and the effects of the COVID-19 pandemic in Tehran.

Keywords: COVID-19 pandemic, Buying behavior, Local food, Health concerns, Food safety, Iran.

Introduction

The COVID-19 outbreak has interrupted the daily routine, posing health, economic, and social challenges globally (Chakraborty and Maity 2020; Demirbaş, Bozkurt, and Yorgun 2020; Aday and Aday 2020). In this unprecedented situation, the food sector faces different challenges compared with other sectors (Aday and Aday 2020). Concerns about food safety have drawn attention to preventing coronavirus transmission among producers, retailers, and consumers (Aday and Aday 2020; Kuijpers et al. 2020). Although the virus is unlikely to be transmitted through food products, it can spread through food producers or workers (Aday and Aday 2020; Jahed Khaniki and Salehi 2021). The deepening of the global economic depression and a prolonged period of disruption in the global and local supply chains are likely to have considerable impacts on the production and availability of food (see, e.g. FAO 2020; Ben Hassen et al. 2020; del Rio-Chanona et al. 2020). Limitations in mobility, border restrictions, and labour shortages in the agricultural sector in many countries have disruptive impacts on producers and farmers.

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Among consumers, the pandemic has led to fears, worries and anxiety about their health and wellbeing and reduced their ability or willingness to purchase goods and services (Reznik et al. 2020; Naja and Hamadeh 2020). Consequently, panic buying, stockpiling, and changes in food purchasing and consumption patterns have been reported in several countries. For example, a report by the OECD (2020) reveals that in France, weekly sales of frozen foods were 63% higher in 2020 compared to the previous year, and in Germany, sales of packaged foods were 56% higher. According to the International Food Information Council (2020), 85% of Americans reported that the pandemic somehow affected their food choices or how they prepare the food they eat. In Poland, turning to local food products, a more plant-based diet and home-based food production has been recommended during the virus outbreak (Sidor and Rzymiski 2020). An online survey conducted by the European Institute of Innovation and Technology (2020) in 10 European countries found that for 35% of consumers buying locally produced food was more important during the pandemic. A similar survey conducted by Kuijpers et al. (2020) across seven countries in Asia shows an increase in fresh foods, eggs, dairy, and bottled water consumption. More than 80% say their preference for local brands has increased since the outbreak in Australia. For at least some consumers, the pandemic is expected to solidify an existing interest in locally sourced foods (Hobbs 2020; Kuijpers et al. 2020, Jansen et al. 2021).

Iran was one of the first countries outside China struck by COVID-19. To reduce the spread of the virus, the Iranian government imposed several coping strategies, including quarantine, isolation and social distancing, and travel restrictions on the capitals of provinces considered “red” -- the highest level on Iran’s color-coded risk scale (Pakravan-Charvadeh et al. 2021). The coincidence of the pandemic and its outcomes with the ever-highest politically induced sanctions against the country has posed many challenges to various sectors (Ghahramani 2021; Takian, Raoofi, and Kazempour-Ardebili 2020; EU Sanctions-helpdesk 2020), and the negative economic growth and high inflation coupled with the pandemic put further pressure on household livelihoods (World Bank 2020). As inflation after the re-enactment of US sanctions against Iran in 2018 has been especially high for food items, following a healthy diet has become more difficult for most Iranians. (Rasekhi et al. 2021). While imported goods have become more expensive, demand for domestic food products has increased. However, due to the increase in imported input prices, the supply of domestic food products that use these inputs has not been able to meet the demand (Hejazi and Emamgholipour 2020). Moreover, delivery and accessibility problems have resulted in declining incomes for the farmers and considerable damage to agriculture (Rad et al. 2021).

Although the concept “local food” is commonly used, no official definition exists; instead, the meanings vary widely (Ostrom 2009; Martinez et al. 2010; Hempel and Hamm 2016; Kumar and Smith 2018; Granvik et al. 2017). Moreover, studies that have explored local food consumption have been mostly conducted in the USA or developed European countries, leading to a dearth of information on local food in less developed countries (Mesić et al. 2021). Without an understanding of what constitutes local food, data on market size and reach, or descriptions of the characteristics of local food consumers and producers are impossible to produce. Eating habits and food choice patterns are considered to be fairly stable when looking at shorter time spans, significant shifts being usually initiated by major life events such as entering/leaving personal relationships (Devine 2005). There is some research suggesting that pandemics like COVID-19 have similar effects (Rasekhi et al. 2021; Jansen et al. 2021). However, it should be noted that even before the pandemic

outbreak, most Iranian families were unable to follow an average healthy diet because of their current income and expenses (Hejazi and Emamgholipour 2020).

This research will contribute to the understanding of consumer psychology and the local food system by investigating how COVID-19 has affected consumer preferences for LFPs in Tehran and how and why consumption habits have changed during the pandemic. According to Jansen et al. (2021), differences in personal food values and strategies may serve as powerful predictors of behavioral change. As food safety perceptions are linked to consumer food choices and demand (Grünert 2005), it is essential both for the producers and marketers of local produce (LFPs) to understand how consumers perceive food safety during a global pandemic (Armstrong and Reynolds 2020).

Following this introductory section, we explore the different approaches to local food found in the extant literature. Next, the methodology and data collection are described. After that, the findings concerning the effects of COVID-19 on shopping behavior are reported. At first, we introduce “local” from the respondent’s perspective. Secondly, we evaluate the motivational drivers and obstacles to choosing LFPs during normal circumstances. Thirdly, we explore the pandemic’s impacts on consumer buying behavior towards LFPs, including the challenges the respondents face in obtaining LFPs in Tehran during the crisis. The final section presents the concluding remarks and directions for future research.

Literature review

Approaches to defining “local food”

What identifies food as local? Various theoretical understandings of local food are applied, which has resulted in diverse views of meaning (Eriksen 2013). A rather often applied approach is to define local food by the distance between where the food was grown and where it is consumed. In other words, local foods refer to foods produced near where they are consumed, based on geographic proximity (between farmer and consumer) or the number of miles the food travels from where it is grown to where it is ultimately purchased or consumed (Roininen, Arvola, and Lähteenmäki 2006; Peters et al. 2009; Martinez et al. 2010; Rimal and Onyango 2013; Coelho, Coelho, and Egerer 2018). For example, according to the definition adopted by the US Congress in 2008, the total distance that a product can be transported and still be considered a “locally or regionally produced agricultural food product” is less than 400 miles from its origin, or within the State boundaries in which it is produced (Martinez et al. 2010).

Some other researchers refer to the characteristics of the environment where the food is grown when defining “local food” (Ostrom 2006; Mesić et al. 2021; Rucabado-Palomar and Mamen Cuéllar-Padilla 2020). In these approaches, the geographical origin of a product is linked to a region’s unique characteristics, like the biophysical attributes, the raising of native breeds, or the use of traditional production processes. Food authenticity can be regarded as the genuineness of products specific to a place and a kind of description of local culture (Zhang, Chen, and Hu 2019). For some consumers, local food mainly refers to food produced in their home regions or countries (Thompson, Harper, and Kraus 2008; Rucabado-Palomar and Mamen Cuéllar-Padilla 2020). Thus, local food is defined by its unique taste values, resulting from a combination of specific characteristics of raw materials,

processing, and origin that determine the authenticity of this food category (Barska and Wojciechowska-Solis 2020).

Although “local” has a solid geographic connotation (Martinez et al. 2010), consumers frequently associate LFPs with non-geographic characteristics, including social factors, such as interaction with producers (Meyerding, Trajer, and Lehberger 2019; Witzling and Shaw 2019), and perceptual values like freshness, quality, and taste (Martinez et al. 2010; Penney et al. 2014; Jensen et al. 2019). According to Ostrom (2006, 66), in the early 2000s, “local” food represented quality and freshness, a personal connection to smallscale farms, environmental protection, community self-reliance, and the economic multiplier effects of making local purchases. On consumer surveys conducted at Washington State, US, she found that while most of her respondents tended to define “local” in terms of a distance or a geographical scale, definitions of “local” varied depending upon the products. In addition to geographical attributes, many respondents associated LFPs with characteristics like fresh, pesticide-free, and “better”, or with the characteristics of the farmers or relationships with local producers. “Local” can also be understood as an alternative or even antithesis to industrial food products and the globalized agri-food system (Ostrom 2006, Ohberg 2012).

In Iran, "local food" is often defined by geographical origin, which refers to the products grown or produced in a specific area, especially in villages (Rahnama 2017). The distance between the place of production and consumption is rarely applied. Furthermore, social factors (e.g. direct-to-consumer) and perceptual values (such as freshness and quality) are frequently associated with “local food” in public discussions in Iran. “Local” food can be “organic” (grown or made without the use of artificial chemicals), but organic food may be shipped long distances (Adams 2016). In Iran, traditional small-scale farming was the main structure of farming communities for centuries, and smallholder farmers who practice non-certified organic agriculture still account for more than 80% of agricultural production (Mahmoudi and Mahdavi Damghani, 2010). Certified organic products have been available in Iran since 1999, but the domestic market is small although growing. The certified products are mainly exported, and the certificates are used for these purposes; a majority of laymen cannot define what organic means and how it differs from non-organic products. Traditional systems of food production still in operation in remote areas are not regarded as organic in the present context of organic production (Ardakani n.d.).

Access to local food

Consumers can obtain LFPs through various marketing channels, consisting of direct-to-consumer sales and intermediated channels. Direct-to-consumer options include roadside stands, on-farm stores, farmers’ markets, and community-supported agriculture (CSAs). Intermediated channels include grocers, restaurants, and regional distributors (Blanck et al. 2011; Low and Vogel 2011; Dunne et al. 2011; Comps et al. 2011; Wright et al. 2015; Hand 2018). Traditionally, farmers’ markets were the usual way of buying and selling local produce, but with the emergence of supermarkets, farmer’s markets became less prominent. More recently, increasing demand for locally produced foods appears to have contributed to the significant growth in direct markets (Gunter 2011; Parsa Motlagh et al. 2015). As presented in Figure 1 and Figure 2 in Iran consumers can obtain LFPs from different venues, either directly from farmers (for example, farmers’ markets and on-the-farm sales) or indirectly through intermediates, such as groceries and restaurants (Parsa Motlagh et al. 2015).

There are also local food stores [In Farsi: *مغازه محصولات محلی*] selling area-specific products such as Golpayegan local dairy [In Farsi: *محصولات محلی گلپایگان*], which are mostly sold loose or with simple packaging. Those unable to access LFPs in their residential area may acquire them through social networks such as relatives or friends in other cities or purchase the area-specific products direct from the producers when traveling. Consumers living in Tehran but originating from other parts of Iran often acquire the local food from their home regions when visiting those regions (Movahed, Ghasemi, and Gholamalifard 2020). Some locally sourced foods, like Lighvan cheese made in East Azerbaijan province, are also available in most supermarkets in Iran. Intermediated channels are especially prevalent in Tehran because of the limited access to farmers' markets.

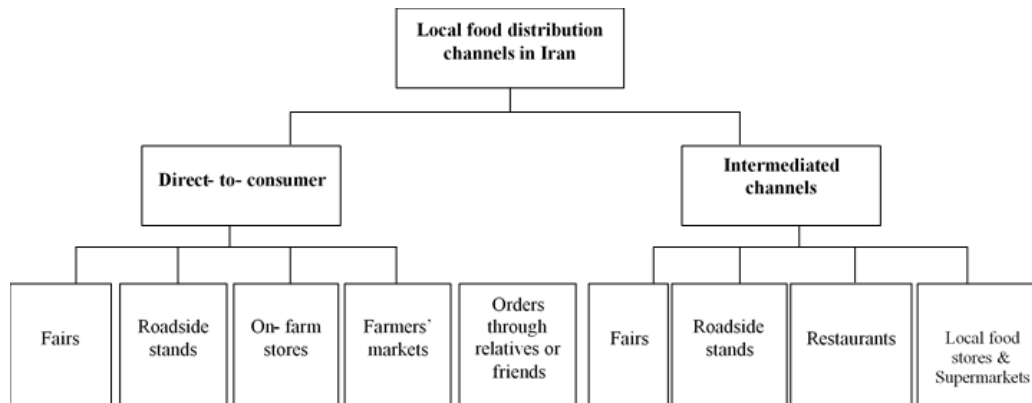


Figure 1: Local food distribution channels in Iran



Farmers' market



Roadside stand



On-farm store



Fair



Figure 2: Examples of local food distribution channels in Iran

During the pandemic, mobility restrictions and lockdowns have inhibited consumers from fulfilling their needs at their accustomed shopping venues. Various online channels have gained importance in many countries to overcome mobility restrictions. In Iran, however, online shopping (e-shopping) for groceries is still in its infancy (Bigdeli et al. 2009; Edrisi, Vakilian, and Ganjipour 2020).

Benefits associated with local food consumption

In the literature, regardless of the approach used to identify the “local”, the potential benefits of increased LFP consumption are discussed from the health, social, economic, environmental, and moral perspectives. Health concerns have been found to be among the main motivators for consuming LFPs (Baumann, Szabo, and Johnston 2019). As the local food is perceived as more nutritious, fresher, and less processed (Martinez et al. 2010; Adams and Adams 2011; Zepeda and Deal 2009; Brozzi et al. 2016), it is associated with improved nutrition, healthiness, and reduced risk of diet-related chronic diseases. Local food systems may offer food items that are fresher, less processed, and more nutrient, and it may increase the availability of healthy food items in a community and encourage consumers to make healthier food choices (Martinez et al. 2010).

While pursuing to enhance their wellbeing by consuming local food, consumers may also have social-related concerns and willingness to contribute to the community’s economic development (Feldmann and Hamm 2014; Memery et al. 2015). Many researchers have explored how social concern for others and moral factors influence consumers’ purchasing of local products (Granzin and Painter 2000; Morgan 2010). One significant social benefit of buying local is that consumers gain insight into their food through interaction with the producers. Moreover, being engaged with local producers gives consumers a stronger sense of place, relationships, and trust within their communities (Brain 2012). Consumers might also feel morally obliged to support farmers committed to ethical standards for safety, health, wages and conditions, and fair trade (Korthals 2001; Höglund 2020). For the farmers, the increased purchases directly from producers present opportunities to increase their income by capturing a more significant proportion of their products’ retail price (Pearson et al. 2011: 889; Key 2016). Moreover, most money spent with local businesses typically gets re-spent in the local economy, not just on wages and local suppliers but also on services like marketing, distribution, and cleaning (Nourish Scotland and SRUC 2014).

In addition to supporting local economies, benefits for the environment are often brought up as a reason to buy LFPs. Purchasing local foods can be seen as an expression of an individual’s interest in environmentally friendly behaviors (Peterson 2013). In earlier studies, consumers have been reported to choose LFPs to reduce their food miles in an attempt to minimize the environmental impact of their food consumption (Klassen 2016; Coelho, Coelho, and Egerer 2018).

Methods

In this study, a qualitative approach is applied to investigate local food consumption during the first wave of the COVID-19 pandemic in Tehran. Interviews were conducted to gather information on consumers’ attitudes and behaviors towards LFPs. The interviewees were acquired using snowball sampling, which is widely employed in qualitative research (Noy 2008). It is particularly applicable when the focus of the study is on delicate issues or requires participants who are familiar with the phenomenon under study (Biernacki and Waldorf 1981).

Sampling strategy

To get started, the principal investigator invited three persons who used to purchase LFPs in local food stores in different regions of the city to participate in the study. They were further asked to invite friends and relatives who lived in other regions of Tehran city. Due to the pandemic, face-to-face interviews were not feasible. Consequently, all interviews were conducted through phone calls between 23 September and 27 October 2020. The length of the interviews varied between 30 - 60 minutes. In addition to local food consumption during the pandemic, the interview topics included the respondents’ demographics and different aspects of their eating habits. The principal researcher carried out all interviews in Farsi, and transcripts were written to capture each detail.

Sample

The sample consisted of 14 men and 12 women, 17 vs. nine single, and 12 families with children. The socio-demographic background variables of the respondents are presented in Table 1. With respect to that in Iranian households, males often conduct most of the shopping, especially if it involves travel, and women, in turn, do the cooking, the sample structure is appropriate for the present study. The age of the respondents ranged from 24 to 66 years. Eleven of them were born in Tehran, but only three had Tehran born parents. The majority of the respondents had a university degree and were employed outside the home.

Table 1: Socio-demographic background of the respondents (N=26)

<i>Characteristics</i>		<i>Number of respondents</i>
<i>Sex</i>	Male	14
	Female	12
<i>Age</i>	18-30	8
	31-50	15

	> 50	3
<i>Marital Status</i>	Married	17
	Single	9
<i>Families with children</i>	With children	12
	Without children	14
<i>Education</i>	Primary	7
	University	19
<i>Employment Status</i>	Employed	19
	Unemployed	3
	Housewife	3
	Retired	1
<i>Place of Birth</i>	Tehran	11
	Other provinces	15
<i>City of Origin, Parents</i>	Tehran	3
	Other provinces	23

Findings

How do the respondents understand local food?

In the absence of a univocal definition for “local food”, we started our interviews by asking the respondents what products they considered as “local food”. As the interviews were conducted in Farsi, we used the word “*Mahsoulate-mahalli*” [محصولات محلی] for “local food”. The respondents used different measures to describe “*Mahsoulate-mahalli*”, eight of them naming only one defining factor, while the majority listed 2-3 characteristics. The combinations of the characteristics mentioned varied, revealing no identifiable pattern. Based on earlier research, the 51 mentions extracted from the data were allocated into three categories, as presented in Table 2. The categories were *geographical origin* (see, Rucabado-Palomar & Mamen Cuéllar-Padilla 2020; Mesić et al. 2021), *social factors and perceptual values* (Greibitus, Lusk, and Nayga 2013; Meyerding, Trajer, and Lehberger 2019; Jensen et al. 2019), and *geographical distance* (Chambers et al. 2007; Martinez et al. 2010; Roininen, Arvola, and Lähteenmäki 2006). The category of social factors and perceptual values was further divided into four sub-categories: *high quality, organically produced, appearance, and producer-consumer interaction* (Mesić et al. 2021).

Table 2: Characteristics of “local food” mentioned by the respondents

<i>Characteristic</i>		<i>Share of respondents mentioning the characteristic</i> %	<i>Share of mentions</i> %
<i>Geographical origin</i>	Grown or produced in a specific area/ Authenticity	58	29
<i>Social factors and perceptual values</i>	High quality/ freshness/ taste	35	18
	Produced organically/ contains less pesticides	38	20
	Food appearance/packaging	19	10
	Direct- to- consumer (interaction between producer and consumer)	38	20
<i>Geographical distance</i>	Near-produced food	8	4

Geographical origin was the most frequently used defining variable as it was mentioned by 58% of the respondents. It refers to the origin of the food, e.g. a village or a region with a specific climate or specific production methods. Nearly one-third of all mentions fell into this category.

Around 38% of the respondents associated “local” with direct-to-consumer marketing and interaction between the producers and consumers. One-fifth of all mentions fell into this category. Similarly, organically produced with fewer pesticides were mentioned by 38% of the respondents. In line with earlier studies (Fan, Gómez, and Coles 2019), 35% of the respondents perceived “local” to be of high quality, with 18% of the mentions falling into this category. Appearance, including color, size, shape, and packaging, was mentioned by 19% of the respondents, the share of this category being 10% of the mentions.

Only two out of the 26 respondents mentioned distance as a characteristic defining “local food”, neither of them stated a specific measure or distance range. This finding is in sharp contrast with studies conducted in other countries (Hand and Martinez 2010) but might be explained by the notion that in Farsi, “*Mahsoulate-mahalli*” is strongly associated with “a specific region”. The categories and their respective sizes are illustrated in Figure 3.

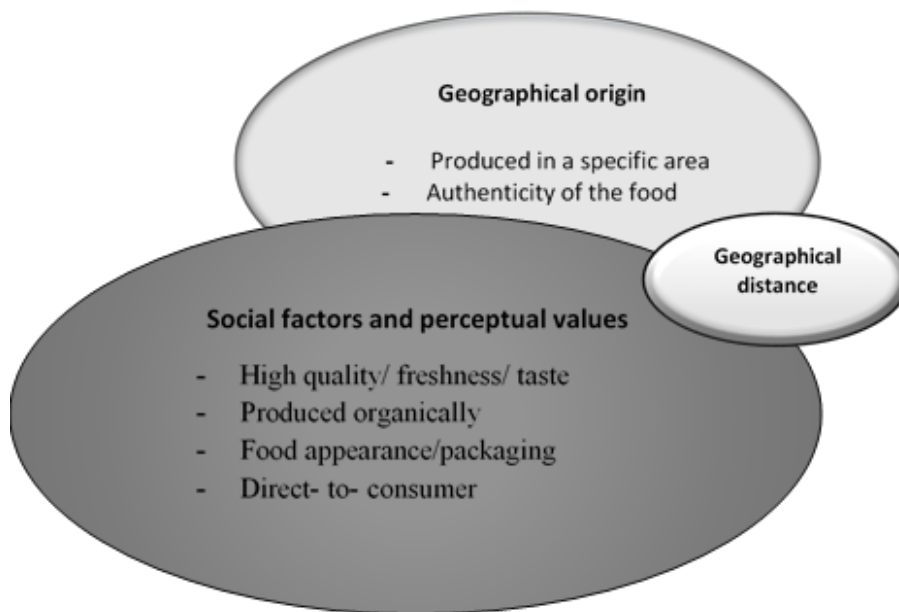


Figure 3: Approaches to “local food”

Motivational factors

Why do consumers choose local products instead of other alternatives available to them? In this research, before turning to COVID-19-related changes in purchasing behavior, we aimed to shed light on the motivational factors behind the respondents’ purchases of LFPs in normal circumstances, i.e. before the outbreak. Below, the findings are presented under five substance areas emerging from the previous literature and our interview data. The categories are quality

(freshness, taste and appearance), food safety and trust (health concerns, sanitary conditions), food tradition (food habits and brand loyalty), accessibility (distance and price), and moral obligations (supporting local producers and protecting the environment).

Quality

There is general agreement in the literature that quality has an objective and a subjective dimension. Objective quality refers to the product's physical characteristics and subjective quality to the customers' perceptions, all of them affecting consumers' perceptions of the "quality" of that product (Grünert 2005). Characteristics like "fresh" and "better" usually refer to the subjective quality whereas "pesticide-free" is a part of objective quality. Taste and appearance are also examples of tangible sensory characteristics of food whereas nutritional value and environmental concerns represent less tangible credence attributes (Wu et al. 2021). In the current study, quality and taste were found as the central motivational factors determining respondents' interest in local food as nearly 90% brought up the high quality, and 80% mentioned the better taste. The following citations illustrate how the respondents described their motivation to buy LFPs in normal circumstances:

"I am crazy about local dairy. [...] The taste of industrial dairy is really bad [...] when I buy a bowl of local yoghurt, I like to jump in the bowl [laughing] [...] it gives me a pleasant feeling" (R 26).

"If you think about the reasons why one buys local products, there are many reasons, but about me, local one [...] for example local bread has more flavor than that I get from the supermarket [means industrial food] [...] Locally produced is full of flavor" (R 21).

"Super quality and freshness of local products encourage me to buy local one [...] those products [LFPs] keep fresh a long time" (R 6).

Our results also support the presence of some sort of halo effect as suggested by Armstrong and Reynolds (2020), meaning that due to the sense of place and belongingness, everything associated with the home region is perceived as "better". Many of those originally from other cities than Tehran explained that they used to buy LFPs from their home province because they found them superior to the products available in Tehran:

"In my opinion, the taste of locally produced in my hometown is completely different, even a local onion [grown in my home- province] has a different flavor than onions grown elsewhere" (R 10).

Food safety and trust

Trust can be defined as a willingness to rely on an exchange partner in whom one has confidence (Bozic 2017). Trust in the producer was one of the key attributes affecting willingness to purchase LFPs. Almost half of the respondents stated that knowing the producer increases trust in a product's quality and safety, which in turn increased their consumption of locally grown:

"[...] Sometimes, I buy these fresh fruits directly from gardeners because I know the producers and trust them" (R 13).

“If I want to buy local food in Tehran, I only buy from producers whom I know” (R 7).

Food healthiness has been found to be among the main motivators for consumers to purchase locally produced products (Baumann et al. 2019). Under normal circumstances, more than half of the respondents purchased local food because of health-related concerns. Three of them were suffering from different diseases (Diabetes, Fatty liver, Multiple Sclerosis). They preferred local food because they considered it fresher and with fewer pesticides:

“[...] moreover, eating non-processed food is a part of my eating habits [...]” (R 10).

“I have to care about my body health and choose food ingredients with fewer pesticides and more nutritious [...] since I am suffering from Multiple Sclerosis, locally grown products are the best choice to sustain my health” (R 16).

Traditionally, branding, marketing and advertising have been used to communicate intangible product attributes. For example, packaging labels may serve as sources of information that consumers trust when assessing food safety and quality at the time of purchase (Wu et al. 2021). Some local products are famous in Iran because they are produced in unique regions or through specific ingredients such as Khansar honey; they have become local brands. However, in the current study, only three out of twenty-six expressed brand-consciousness when purchasing LFPs. Two respondents pointed out that insufficient packaging made LFPs less attractive:

“I buy Golpayegan dairy from a local food store near my residing area [...] because it is a well-known local dairy” (R 13).

“If the brand of a local product guarantees the quality of that product, I would like to buy it. For example, I buy Tuyserkan walnut [an area-specific well-known walnut] if the quality is good; otherwise, I do not think about its brand” (R 9).

“I avoid buying LFPs with inappropriate packaging since I care about the packaging of food products” (R 10).

Food tradition

Food tradition and food habits are important components of a region's identity and cultural heritage (Holt and Amilien 2007), and they vary between locations and societies (Rijal 2010). Iranian food traditions are complex and they vary by location and ethnic group. Each region has its own traditions and special cooking methods that have greatly expanded the variety of local food (Fazeli 2021). Most Iranians have three main meals a day, but the type of food consumed varies by region. For example, in the northern cities of Iran, most have locally sourced rice or rice-based food at every meal, even for breakfast since, rice was and still is abundantly cultivated in the north of Iran (see, e.g. Karizaki 2016; Matthee 2016). However, over the past decades, many of the food traditions have been taken over by industrial foods (Niknamian 2016). Here are examples of how our respondents described their food traditions and eating habits:

“I would like to say that local products are a part of our culture, tradition and identity [...]” (R 25).

“Every summer, my mother makes tomato sauce with locally grown tomato” (R 23).

“We use to make A’ash [(Iranian soup] with local Kashk [made from drained yoghurt (R 3).

“I never consume processed dairy. I always buy local milk and make yoghurt [...] I prefer to consume healthy and nutritious food” (R 16).

Accessibility

Access to healthy and nutritious food is an important issue many cities face (UNECE 2021). As the availability of healthy foods influences consumers' food spending and diet, travel time to shopping and food prices (Baltimore City Health Department n.d.), urban food policies seek to increase access to LFPs by linking urban dwellers more directly with growers to improve public health (Pederson and Robertson 2001). In the interviews, we asked the respondents how they usually acquired the LFPs they consumed before the pandemic. Only three out of the twenty-six reported that they visited a farmers' market in the vicinity of their area of residence, while the majority purchased the LFPs they used from elsewhere. These venues included local food stores, supermarkets, their home provinces, and places visited when traveling. Many of those respondents, who did not originate from Tehran or had relatives or friends in other cities, said that they usually order local food through their social networks in other cities.

“I have access to a farmers’ market close to my residing area [...]. So I can buy fresh vegetables and fruits whenever I need them” (R 2).

“[...] I am originated from Mazandaran province [...], and I used to purchase LFPs from Northern Iran when traveling” (R 10).

“I ordered saffron via WhatsApp channel since my friends knew the producer and suggested me to buy it” (R 17).

“Once, I ordered local sesame oil online [...] since I had a discount code for an online shop, I was interested in buying something” (R 20).

Price is a significant determinant factor influencing purchasing behavior (Zepeda and Deal 2009) and an important component of accessibility. Based on their economic conditions, consumers have different perceptions about the food prices; consumers with low-income often are the least interested in local food because of the high price (Khan and Prior 2010). In an earlier study, Rahnama (2017) found the high price as the main reason for consumers’ reluctance to buy local rice in northern Iran. We also found respondents to whom price played a key role in purchasing decisions; if local food was more expensive than other options, they bought smaller amounts of locally sourced or switched to non-local products. However, three-fourths of our respondents claimed that they were willing to pay up to a 10-50% premium for the better quality and taste of the locally sourced in comparison to industrial food:

“I must say that I never compare the prices of the local and non-local products, but I think locally produced is usually reasonably priced [...] however, I’m prepared to pay up to 25 % more for some of the locally sourced products such as local honey” (R 16).

We also asked our respondents to share their experiences about online shopping for local food. Most respondents preferred to visit physical shops to ensure what they get because they did not trust either the producers, channels or the quality and authenticity of LFPs. The majority claimed that they had never ordered LFPs online. They also believed that local food sold online was rather expensive and, in addition to that, there would be an extra charge for the delivery. Overall, economic factors such as price influence which store, product, and brand to patronize (Faith and Edwin 2014). They play an especially significant role in countries with high inflation and recession, such as Iran. Overall, mistrust, high prices, and the inconvenience of purchasing online were the main constraints for the respondents:

“It doesn’t convey much confidence [...] I prefer to touch a product before purchasing it [...]” (R 23).

“[...] I never buy local food online because it is more expensive and does not get delivered on time” (R 18).

“I would not buy at the moment; maybe in the future” (R 24).

For those four who had ordered online, trust and recommendations by other consumers were the main drivers to order online, but also the monetary benefits had an impact:

“I knew a local producer via Telegram channel. She was very creative and honest [...] She was living in Mahallat [a city in Markazi province] and sold different kinds of locally sourced products which I have never found elsewhere. Once, I ordered ginger jam mixed with walnut [...] that was incredible” (R 6).

Moral obligation

We asked the respondents whether they consider ethical issues when contemplating whether to buy LFPs or not. In the current research, we have defined ethical issues to include environmental issues and social concerns related to food consumption, especially the support to the local economy and local producers. It turned out that 14 out of 26 perceived purchasing local food as a moral obligation towards local producers:

“[...] In my opinion, buying local food is a kind of moral obligation towards local producers who need to be supported and encouraged” (R 25).

“[...] I always buy dried vegetables from a poor woman living in a rural in my home province because I am sure that she needs my support” (R 7).

The length of the journey that food takes between production and consumption has an environmental impact, whether in packaging, processing, transportation or distribution (Irshad 2010). Therefore, in many countries near-produced food is gaining popularity because of the smaller ecological footprint (Barska and Wojciechowska-Solis 2020). In addition to reduced food miles, the

decreased need for packaging potentially has a significant environmental impact because of the reduced amount of resources used (Irshad 2010). In this regard, the respondents were asked whether they chose local food due to environmental concerns. The results show that only four out of twenty-six considered environmental issues when choosing a local product. Moreover, they only brought up attempts to minimize unnecessary packaging and reduce food waste, none of them mentioning food miles:

“Yes, I consider [...] because the produce is fresh and brought directly from a farm, there is less waste” (R 17).

“I used to stash my fresh greens in a cotton bag to cut down on the use of plastic” (R 25).

Impacts of COVID-19 on Shopping Behavior

All of the respondents claimed to have consumed LFPs before the pandemic. We continued by asking whether and how the pandemic had affected their consumption habits. Our findings reveal considerable changes in attitudes and behaviors during the pandemic. We present the results here under four behavioral categories based on the changes in consumption of LFPs. The categories are *Do not consume during the pandemic*, *Consume less than before*, *No change in consumption of LFPs*, and *Increased consumption of LFPs*. Table 3 presents the categories with their respective socio-demographic profiles. Although this is a qualitative study with a relatively small sample, to highlight the differences between the categories, we choose to present the findings in the form of a relative distribution (%) instead of the number of respondents in each category.

Table 3: The socio-demographic profiles of the behavioral categories

		<i>Do not consume</i> (19%)	<i>Consume less than before</i> (46%)	<i>No change in consumption</i> (23%)	<i>Increased consumption</i> (11%)
<i>Sex (%)</i>	Male	60	58	50	33
	Female	40	42	50	67
<i>Age (years)</i>	Average	35	34	45	31
<i>Marital status (%)</i>	Single	80	17	0	100
	Married	20	83	100	0
<i>Education (%)</i>	Primary	80	17	67	0
	University	20	83	33	100
<i>Employment (%)</i>	Employed	80	67	67	100
	Unemployed	20	16.5	0	0
	Housewife	0	16.5	16.5	0
	Retired	0	0	16.5	0
<i>With children (%)</i>	With children	20	42	100	0
	Without children	80	58	0	100
<i>Place of birth (%)</i>	Tehran	100	25	33	33
	Other	0	75	67	67
<i>City of Origin, Parents</i>	Tehran	80	8	0	33
	Other	20	92	100	67

Group 1: Do not consume because of the outbreak:

Around one-fifth of the respondents said they had not bought locally grown food during the pandemic. All respondents in this group were born in Tehran, like their parents in most cases. They had the lowest level of education, but only one of five was unemployed. There was one family with children, whereas the rest were single. Their average age was 35 years. For this group, lack of trust in the hygienic conditions of some products such as local dairy was the main issue to avoid buying LFPs during the pandemic:

“I have to say no since my mother is old and sick, I have never bought unpackaged local dairy or vegetables during the COVID-19 outbreak since I do not trust in hygienic condition of [unpackaged] local products [...] even I prefer to bake at home. [...] I should take care of her, and I afraid she is getting infected with the virus” (R 4).

Another reason not to buy LFPs during the crisis was related to travel restrictions and travel-related risks. Since many used to buy their local food from other cities, for example, when visiting their parents or traveling for other reasons, they had no access to their conventional sources because of limited travel. Therefore, they had to buy the products available in local supermarkets:

“My husband is originally from northern Iran; we always buy local products from Gilan [...] because we trust in local produce there [...] But during outbreak, we avoid traveling and did not buy any kinds of local food [...] we have to buy packaged or frozen food ingredients from supermarkets” (R 24).

Group 2: Consume less than before the outbreak

Twelve out of the 26 respondents stated that they had reduced their consumption of LFPs during the outbreak. In sharp contrast with the previous group, the majority of respondents in this group – likewise their parents – originated outside Tehran. Although their average age, 34 years, was very similar to the previous group, the rest of their demographic background variables were strikingly different. In this group, ten out of twelve had a university degree and were married. Most of the respondents in this group used to buy LFPs originated from their home provinces. Due to mobility restrictions, they could not travel to their hometowns to fulfil their needs. This has led to reduced consumption of LFPs compared to the pre-pandemic period:

“Well, I never buy LFPs from Tehran [...] my parents usually send me some local ingredients from Tabriz, but because of the mobility restrictions during the COVID-19, they rarely send now” (R 5).

“During the pandemic, we do not buy LFPs from Tehran [...] we only buy local products produced by our relatives in Yazd province (R 11)”.

Although the risk of infection from food products is assumed to be very low (CDC 2020), the fear of contamination was one of the main reasons for the reduced consumption of LFPs during the pandemic. Therefore, consumers in this group bought only disinfectable or washable LFPs. For example, they claimed that they never buy locally produced yoghurt or cheese because these foods cannot be disinfected. This is in line with Armstrong and Reynolds (2020), who, based on a study conducted in the UK, suggested that food risk perceptions may vary by food type. Two respondents were turning to grow their own food because of the ongoing pandemic. They considered gardening an easy solution to cope with the virus:

“During the COVID-19 outbreak, I only buy local products which can be washed or heated [...] but refuse to buy unpackaged local dairy or nuts [...] I also wash fruits and vegetables by veggie washing liquid before putting them in the fridge” (R 1).

“I avoid buying local foods that are sold loose. I only buy packaged ones. It gives me a sense of trust” (R 19).

“Because of fear of contamination by unpackaged local food sold in Bazaar, my father has planted a variety of vegetables in the small garden [...]” (R17).

Group 3: No change in LFP-consumption:

Six out of 26 respondents had not changed their shopping behavior during the COVID-19 outbreak. They consumed local foods as before and did not worry about the contamination since they knew the local producers and trusted them. Compared to other groups, these respondents were considerably older, and all were married and with children. Four out of six had a primary-level education. In this group, there were three males and three females. One of them was retired, another was a housewife, whereas the others were employed outside the home. Four out of six were of non-Tehran origin, and all of the parents originated from other areas. These respondents brought up the quality and taste of LFP's as a motivation for their consumption decisions. For many of them, their eating habits and food tradition were based on local produce:

“Because of the high quality of LFPs, I still buy them” (R 9).

“Our main meals consist of different kinds of local foods [...], and during the COVID-19, we eat as before” (R 15).

Consistent with Grünert (2005), the perceived safety of their preferred LFPs was also an important motivational factor:

“My shopping behavior has not changed during the pandemic because we know them [producers] and there is a certain trust” (R 9).

“If I trust in the quality of a local product, I will buy it” (R 23).

Group 4: Increased consumption of LFPs during the pandemic:

Only three out of 26 claimed they bought local food during the pandemic more than before. All these respondents were single and had a university-level education. There was one male vs. two females. These respondents preferred a variety of fresh and healthy food, including locally produced fruits and vegetables, during the pandemic even more than before. They trust that having a diet rich in pesticide-free fruits and vegetables can help them to sustain their physical and mental health:

“Yes, I do, yes. Since strengthening the immune system and having a good nutritive status is crucial for health, particularly during the COVID-19 pandemic [...], my parents and I prefer to consume a more plant-based diet, especially medicinal herbs like locally grown garlic and ginger [...] because I am a doctor and more conscious about my diet” (R 14).

“I believe that locally produced food is more nutritious” (R 20).

In addition to the health benefits of LFPs in light of COVID-19, these respondents also believed that the local food with shorter supply chains decreased the risk of contamination. This is in line with

Jarzębowski et al. (2020), who suggest that a short supply chain of locally produced food typically offers consumers a heightened sense of security:

“I also buy in bulk from farmers’ market in order to minimize shopping trips and the number of intermediaries between producer and consumer” (R 21).

Discussion and conclusions

The COVID-19 pandemic and lockdowns have transformed global food systems and consumer eating habits (Armstrong and Reynolds 2020; Ben Hassen, El Bilali, and Allahyari 2020). This research aimed to contribute by investigating how and why the pandemic has affected consumer preferences for LFPs in Tehran. As many consumers are aware of the potential positive effects of the increased consumption of LFPs but simultaneously afraid of contamination through them, their decision-making process has become increasingly complicated (Anastasiadou et al. 2020). Thus, they find themselves in limbo, pondering whether to buy LFPs or not. Our findings show that one-fourth of the respondents continued to consume LFP’s during the pandemic as before, whereas two-thirds consumed less or not at all. Only a few increased their consumption of LFPs, mainly because they were eager to boost their immune system against the virus during the crisis.

The motivational factors related to local food consumption have positive and negative effects on the purchase of LFPs. The literature approaches the motivational factors from health, social, economic, environmental, and moral perspectives. In the current study, the motivational factors were categorized under the headings *quality*, *food safety and trust*, *food tradition*, *accessibility*, and *moral obligations*. In the literature, *quality* usually refers either to the physical or perceived characteristics of the product or both (Grünert 2005). Concerning food, it often boils down to taste. In the current study, nearly 90% of the respondents brought up the high quality (with no specification), and 80% mentioned the better taste of LFPs. Health-related issues are included in the *food safety and trust* dimension, social aspects in the *food tradition* dimension, economic factors in the *accessibility* dimension, and environmental concerns in the *moral obligation* dimension. In a broad sense, safety is part of food quality. However, previous research suggests that perceptions of food safety affect consumer food choice in ways that are different from perceptions of the other dimensions of quality. In situations where major safety concerns arise, risk perceptions may dominate all other considerations in food choice and lead consumers to avoid certain products (Grünert 2005). In such conditions, the degree of trust is a significant moderator affecting consumer choices (Kitz et al. 2021).

Figure 4 presents the motivational factors in relation to the respondent’s behavior towards LFPs during the outbreak. As can be seen from the Figure, the reasons for decreased or ceased consumption are related to food safety issues, lack of trust and the limited accessibility of LFPs, the latter especially among those with looser connections to regions producing area-specific products. These findings are in line with earlier studies (Grünert 2005; Armstrong and Reynolds 2020; Eger et al. 2021). In turn, some respondents continued to purchase or even increased their consumption of LFPs during the pandemic. The key motivations for respondents who did not change their behavior were trust and food tradition. These consumers’ regular diets included plenty of local food, and they saw no reason to change their behavior because of the outbreak. Health-related issues were the most important motivational factor for those who increased their consumption.

When behavior during the pandemic was discussed in the interviews, none of the respondents mentioned the moral considerations, although they were brought up as motivational factors in normal circumstances, i.e. before the outbreak. In turn, the respondents were most worried about their health instead of having concern for others. This finding is supported by other research conducted during the COVID-19 pandemic, showing that consumers have become centered on the most basic needs (Eger et al. 2021; Wright and Blackburn 2020).

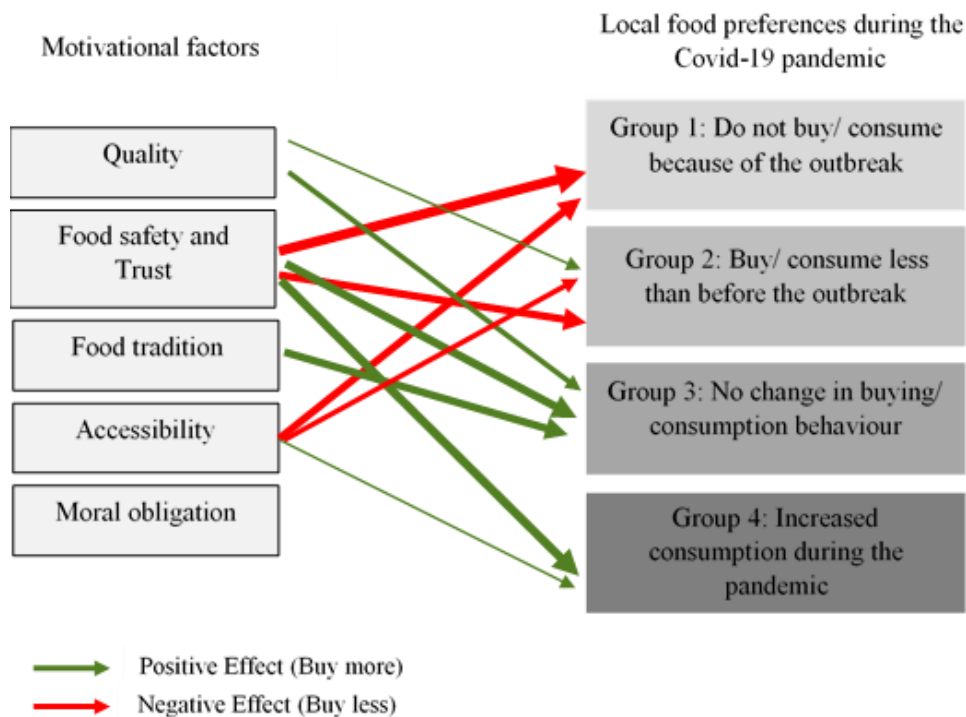


Figure 4: The summary of motivational factors affecting local food consumption during the pandemic

As the food system shifts towards a ‘new normal, it is vital to understand the changes in consumer perceptions, preferences and trust of foods (Armstrong and Reynolds 2020; Jansen et al. 2021). In addition to providing healthy diets, local food can empower communities through farmer and non-farmer interactions, help sustain local producers, keep the money inside of the local economy, and address social inequalities to enhance community resilience during crisis similar to the COVID-19 pandemic (Ewing-Chow 2020). Our findings reveal the conflicting motivational factors affecting consumers’ food choices, providing both the producers and intermediaries with valuable information that enhances understanding of consumer psychology during a global pandemic.

In the context of the current study, “local” food is often a synonym for “traditional food”. The advantages of traditional regional food consumption, such as sustainable rural development and environmental benefits, have been highlighted in the literature. *Traditional eating* often means seasonally restricted and locally sourced food consumption (see e.g. Salehi et al. 2005) whereas modern eating is characterized by consuming foods imported from all over the world and available throughout the year (Sproesser et al. 2019). Although the Islamic Republic of Iran is a largely

agricultural country, urbanization has separated a significant part of the population from farmers and food producers. Because of the economic situation, fears, lockdowns and mobility restrictions, many Iranians have suffered from worsened accessibility to traditional food and fresh products. The farmers, in turn, may have faced decreased sales and, consequently, financial losses. Thus, ensuring the availability of affordable healthy food in all circumstances should be a policy priority. The developing online infrastructure is expected to provide platforms and opportunities for consumers and producers of area-specific food to interact. In addition to that, local produce and area-specific products from more remote areas of Iran should be available in grocery stores in Tehran and other major cities. However, as our interview material shows, sustaining trust without direct interaction between the consumer and producer is the main challenge. In trust building, retailers and other intermediaries have a significant role.

Limitations and Future Research

One of the main aspects of COVID-19 related lockdown was the restrictions of human mobility, which affected the accessibility of LFPs in various ways. For the current study, 26 consumers from different regions in Tehran were interviewed through phone calls. However, as Iran's capital city, Tehran hosts many migrants from other areas, their origins and respective food traditions affecting their buying behaviors. Thus, the results might have been different if the data were collected in other cities or rural areas. It should also be noted that even taking into account that based on the latest Iran's national census (2016), around 33% of the population in Tehran County had an academic degree, respondents with a university-level education were overrepresented in our study. Therefore, future studies should be conducted using more diversified samples and study areas to increase the generalizability of the results. However, in an analysis of studies conducted in the US, Martinez et al. (2010) found that while local food consumers were demographically diverse, they were very similar in their motivations for buying local. Although differences in access to local food and relative prices across regions might be expected to lead to differences in buyer profiles, it turned out that demographic characteristics were weak predictors of the decision to purchase LFPs.

An understanding of the meanings attached to concepts under study is an essential prerequisite for the validity of analysis and interpretation of the data. Therefore, the interviews were started by asking the respondents what was "local food" for them. In the literature, a rather often applied approach is the geographic proximity between farmer and consumer or the number of miles the food travels. Other researchers emphasize the characteristics of the environment where the food is grown. In this approach, the geographical origin of a product is linked to that region's unique characteristics, like the region's biophysical attributes, the raising of native breeds, or the use of traditional production processes. In that case, the LFPs are not near-produced but area-specific. In the current study, most respondents understood LFPs as area-specific products, with only few references to physical distance. That is somewhat contradictory to the findings from other countries (see Ostrom 2006; Rose et al. 2008; Martinez et al. 2010). However, it has been found in earlier studies (see, e.g. Ostrom 2009, 74) that the phrasing of the question significantly impact the results. Our interviews were conducted in Farsi, and we used the word "*Mahsoulate-mahalli*" [محصولات محلی] for "local food". As the word has a strong connotation with area-specific, traditional food, this might have an effect on the findings. Moreover, being able to conduct the interviews face-to-face instead

of phone calls may have resulted in more diversified data (Salehi et al. 2005). These contextual factors are important to keep in mind when analyzing and interpreting the data collected, especially when the findings are investigated against research conducted in other places. Overall, the importance of local and national food cultures in determining how people change their food behavior should not be underestimated (Jansen et al. 2021).

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