





Consumer trust in local food system – An empirical research in Hungary

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ORIGINAL RESEARCH PAPER

Received: January 30, 2024 • Accepted: February 12, 2024

Published online: March 5, 2024

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ABSTRACT

Consumer trust is essential to any market but particularly relevant to the food sector. Sustainable food systems require integration of small-scale food producers, for them consumer trust is pivotal. However, comprehensive measurement of consumer trust regarding local food is a less explored area. Based on the adjusted version of Benson's trust toolkit, local food trust was measured on four levels. This approach, connecting locality/proximity to food-related trust, was tested with a representative quantitative consumer survey ($n = 1,001$) in Hungary. Interpersonal trust, general organisation trust, local food chain trust, and local food product trust were measured on a 5-point Likert scale. Correlation and boxplot analysis conducted revealed that trust levels correlate significantly but remain independent from demographic characteristics, indicating that trust in local food is not region-, education-, or income-specific amongst Hungarian consumers. A relatively high level of consumer trust was measured for local food products and producers compared to other stakeholders, strengthening the assumption for the proximity-trust relationship regarding food. This is a key factor for small-scale food producers: only shared values with the local community and earned trust can attract customers despite less flexibility with pricing and limited capacity for advertising.

KEYWORDS

consumer trust, local food, local food systems, short food supply chains, quantitative survey

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1. INTRODUCTION

With more than 820 million people having insufficient food and many more consuming low-quality diets, while food production significantly contributes to climate change, biodiversity loss, and environmental pollution, the global food system's transformation is urgently needed (Willett et al., 2019). Different problems of food systems embody different spatial scales, therefore solutions should be scale-specific and region-specific. Accordingly, interventions designed to enhance sustainability and good practices may work at one level but fail to improve sustainability in other regions or at other levels or scales (Thompson, 2007; Eakin et al., 2017), therefore a better understanding of local food systems is inevitable.

The increasing complexity of supply chains can have an adverse effect on trust; even though trust becoming increasingly important for consumers (Giampietri et al., 2018; Benson et al., 2020; Kasza et al., 2022), while the establishment of local food systems is crucial in mitigating potential food security in the market and curbing food price inflation (Kasza et al., 2024). Consumer trust must be rebuilt to ensure a future sustainable food system. According to Jevšnik et al. (2008) and Kasza et al. (2022), for efficient food-related risk communication, the full range of consumer concerns should be identified, and when this trust is established, then benefits provided by new products or technology become publicly acceptable. Important building blocks of trust are typically present in local food systems such as transparency, pro-activity, cooperation, and consumer orientation (Wilson et al., 2017; Benson et al., 2020), and non-marketed benefits may include an increase in trust as well (Benedek et al., 2020). Local producers, who participate in direct sales activities, generally undertake to build closer relations with their consumers (Dunay et al., 2018), building trust in the meantime. In the research of Chang et al. (2022), consumers from rural Spanish and Greek focus groups felt that products from short food supply chains (SFSCs) were more traceable and they trusted shorter chains more than longer ones. As the relationship between the food producer and the consumer is shortened in SFSC-s and local food systems, transparent chains are built up, in which products reach the consumer with a significant degree of information (Renting et al., 2003).

There are different approaches to how to define local food. According to the geographical approach, locality is defined based on the distance between production and consumption (Morrison et al., 2011). Beside distance, quality factors may also define locality, such as traceability, freshness, and contribution to the local economy (Penney and Prior, 2014), or being based on cultural and socio-economic identification of their roles within the value chain (Weatherell et al., 2003; Szegedyné Fricz et al., 2020). Consumers establish 'relations' with the region easier due to the information on the origin, quality attributes of the product, and the ethical and social values of production methods provided by a trustful source (Renting et al., 2003; Fernández-Ferrín et al., 2017).

In Hungary, local products have distinct positive attributes: more delicious, more natural, and more environmentally friendly, and the perception of local products is better than average among foodstuffs (Szegedyné Fricz et al., 2020). According to Autio et al. (2013), to trace the origins of food, consumers value self-produced, self-processed, and self-harvested produce – this is seen as the most authentic food. Chang et al. (2022) state that trust in SFSCs needs to be strengthened, especially in Hungary, through regulation, controls, knowledge, and exposure to local food systems. Information about these should be more



accessible, and public institutions have an important role in supporting SFSCs and educating citizens about them. The competitiveness of the Hungarian agricultural sector is highly domestically determined, therefore the consumer's trust in domestic produce needs to be restored (Lakner et al., 2007). Under the current conditions, and without considerable changes in the regulatory framework, it is hard to expect the development of SFSCs in the European Union, especially in the new member states, like Hungary, and some policy measures are necessary to enhance the role of these systems (Popp et al., 2019).

Trust cannot be directly observed; as a result, in several studies, different items have been created to measure it. Benson et al. (2020) created a toolkit to measure general food related trust in levels from general to specific items based on previous researches. They distinguish between five levels; interpersonal trust, general organisation trust, specific organisation trust, food chain trust, and product trust. The research presented is aiming to measure trust in local food systems using a consumer survey representative for Hungary, inspired by the before-mentioned Benson model, but specialised for local food systems.

2. MATERIALS AND METHODS

A quantitative survey was conducted with 1,001 respondents following quota sampling. The sample is representative based on the 2016 micro census of the Hungarian Central Statistical Office by age, gender, and location of habitat based on Nomenclature of Territorial Units for Statistics (NUTS) level 2 regions (Hungarian Central Statistical Office, 2017). To ensure representativity, demographical quota numbers were tracked. Each questionnaire was coded to detect inaccuracies in data entry. The data was edited in Microsoft Excel, and the error-filtered data was statistically analysed in R version 3.6.1. with the level of significance set to 0.05.

The following close-ended, 5-point Likert scale questions were included in the questionnaire regarding local food system-related trust:

To what extent do you agree with the following statements? (1: do not agree, 5: totally agree)

- Most people are trustworthy (interpersonal trust)
- Local people are trustworthy (local people)
- I trust Nébih (National Food Chain Safety Office of Hungary) (general organisation trust)
- Local producers and farmers are reliable (local food chain trust)
- I trust that peppers from local producers are safe (local food)

Additional questions were included to gather information about demographic characteristics and food handling in the household. These inquiries also explored whether participants adhered to a special diet and if they had received any education related to food (Tables 1 and 2).

As a first step of processing data, the aim was to understand correlations between demographical characteristics (age groups, size of settlement, level of education, income, and gender) and different trust items (interpersonal trust, local person trust, general organisational trust, local farmer trust, and local food trust), therefore Kendall's Tau and Spearman's Rank Correlation Coefficient were utilised. Differences between the trust levels were analysed with basic descriptive statistical methods and illustrated with box-plot diagrams.



Table 1. Representative socio-demographic characteristics of the sample (% of respondents, n = 1,001)

Demographics I.						
Gender						
Female			Male			
53.05%			46.95%			
Data series specific to the Hungarian population:						
53.07%			46.93%			
Age group						
18-29 years	30-39 years	40-59 years	60 years above			
17.78%	16.28%	33.77%	32.17%			
Data series specific to the Hungarian population:						
17.59%	17.04%	33.83%	31.54%			
Geographical distribution (NUTS-2)						
Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain
30.67%	10.99%	9.89%	9.09%	11.79%	14.89%	12.69%
Data series specific to the Hungarian population:						
30.75%	10.80%	10.03%	9.13%;	11.62%	14.90%	12.78%

Source: Own data.

3. RESULTS AND DISCUSSION

3.1. Different trust elements and differences between them

Based on the validated consumer trust toolkit by Benson et al. (2020), in this research trust levels spanned five levels of the food chain, ranging from the general to the specific, and measured on 5-point Likert scales. Trust levels in the Benson model were adjusted to the local food setting. The most general level in the Benson model is interpersonal trust, considering how trustful an individual is in general. An additional local person level has been added, as an important factor in the local food setting. General organisation trust measures how much a consumer trusts a certain organisation related to food but not involved in the food chain. Specific organisation trust, represented in the original model, has been excluded from consideration in this study, due to the local food system setting. Benson’s food chain trust level has been adjusted to local food chain trust (local farmer). Product trust has been also adjusted to local food product trust.

Table 3 presents the overall trust levels for the specific elements. A general concentration of the frequency of answers, going from the general trust levels towards the specific trust levels (indicated higher frequency with darker colour) could be observed.

The distrust level was the highest at the interpersonal trust, and the frequency gradually shrank towards the specific trust items. At the same time, a higher trust was present at non-person related attributes (like general organisation trust or local food product trust). Excluding the neutral answer possibility, the differences between the specific and more general trust attributes were even more notable. In general, a very low, non-food-related interpersonal trust level was visible among Hungarian people.

The non-food related interpersonal trust was remarkably low among Hungarian people, only 15.49% of the respondents agreed to some extent with the statement that most people are



Table 2. Further socio-demographic characteristics of the sample (valid % of respondents, $n = 1,001$)

Demographics II.					
Place of living					
Village: 15.24%		Another city: 61.99%		Capital city: 22.76%	
Highest accomplished qualification					
Primary and vocational school: 9.01%		High school (graduated): 38.79%		Higher education: 52.20%	
“Natural sciences” specialisation among higher graduates					
Yes: 21.29%				No: 78.71%	
Economic status					
Active worker (employee): 44.47%	Entrepreneur (self-employed): 10.44%	Retired or disabled: 29.78%	Job seeker: 3.72%	Homemaker: 1.34%	Student: 10.24%
Job related to food production and food trade					
Yes: 21.89%				No: 78.11%	
Number of persons living in the household					
1 person: 23.70%	2 person: 34.86%	3 person: 18.79%	4 person: 13.87%	5, or more person: 8.87%	
Children under 15 years of age in the household					
Yes: 20.21%				No: 79.79%	
Special dietary needs					
Yes: 24.51%				No: 75.49%	
Who is responsible for food in your household?					
The respondent: 43.94%		Shared with other people: 45.73%		Another person: 10.33%	
Income level (self-estimation)					
Very low: 3.92%	Modest: 18.03%	Average: 58.11%	Above average: 17.92%	High: 2.01%	

Source: Own data.

Table 3. Local food system-related trust levels: The frequencies of answers for Likert scale

	Interpersonal trust	Local people trust	General organisation trust (national authority)	Local food chain trust (local farmer)	Local food product trust
1	183	51	46	34	34
2	223	124	69	84	41
3	388	391	301	355	235
4	122	305	344	382	417
5	33	77	196	109	239

Source: Own data.

trustworthy. According to the European Quality of Life survey (Eurofound, 2016), on a 10-point Likert scale Hungarians gave on average the index score 5 to the statement that most people can be trusted, just as the average regarding the whole EU. The average interpersonal trust in this



research also took the average in the middle score, but the lower median regarding interpersonal trust compared to more specific trust levels reflects a low trust level amongst Hungarian consumers.

Compared to this, 38.16% of the respondents agreed to some extent with the statement that local people are trustworthy, clearly showing some relationship between locality-proximity and trust. Even a higher portion of respondents, 49.25%, agreed to some extent with the statement that local producers and farmers are reliable.

The different levels of trust were further analysed with Boxplot analyses. It is visible that the median differs in the different trust levels amongst the trust attributes, also upper and lower whiskers differ visibly (Fig. 1), suggesting Hungarian consumer trust differs in the different food-related trust levels.

The Boxplot presents a lower median (thick black line) regarding interpersonal trust compared to more specific trust levels, also the spread of data, excluding outliers, is generally lower in interpersonal trust. Comparing local people’s trust and interpersonal trust, their median both can be considered lower than the other trust indicator’s median. Hence, the box represents the 50% of the central data, local people trust is higher in this regard.

According to the study of Murphy et al. (2021), investigating food trust among Finnish, German, Greek, and UK consumers found that general trust was around average (4.3 points on a 7-point Likert scale). According to their findings, average food product trust was lower (3.9 points on a 7-point Likert scale), while investigating local food systems, we experienced a higher food-related trust in the Hungarian setting.

3.2. Correlations between demographic characteristics and local food trust items

Correlations and possible connections between the different trust attributes were investigated through Spearman correlations. There is a higher correlation visible (marked with a darker colour) between the different trust levels in Fig. 2 compared to any demographic characteristics or other attribute.

The results suggest that there is seemingly no significant correlation between the demographic characteristics and trust levels. There is a very weak (0.15) positive correlation between

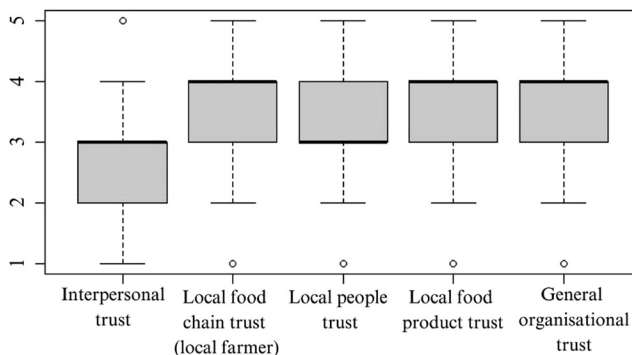


Fig. 1. Boxplot analyses of the trust levels

Source: Own data.



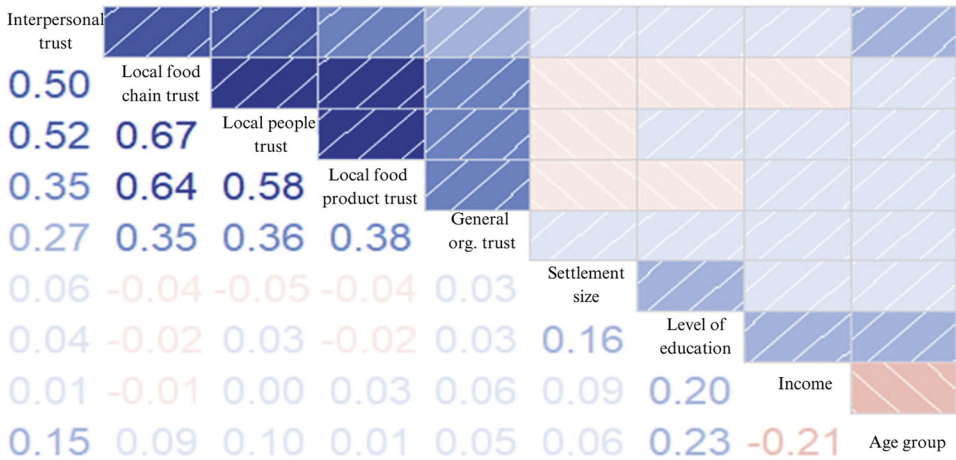


Fig. 2. Spearman correlogram between the variables
 Source: Own data.

the age group and interpersonal trust level, meaning that elderly people have higher interpersonal trust, and also a weak but positive correlation (0.09) is present between age and the local food chain (local farmers). Based on the findings of [Murphy et al. \(2021\)](#), investigating food trust, younger participants had higher levels of product trust, while general trust increased as respondents age increased.

With Boxplot analyses, local food chain trust (local farmer) was analysed based on whether the consumer followed a special diet. There is a difference in local producer trust based on whether the consumer follows a special diet or not, as the median is lower for those consumers, who follow a special diet; therefore, the trust level is lower among them ([Fig. 3](#)).

This research faces some possible limitations due to the simplified Benson model, which constrains our comprehension of the nuanced topic of food-related trust. Additionally, the reliance on self-reported data introduces the risk of response bias, where participants may offer

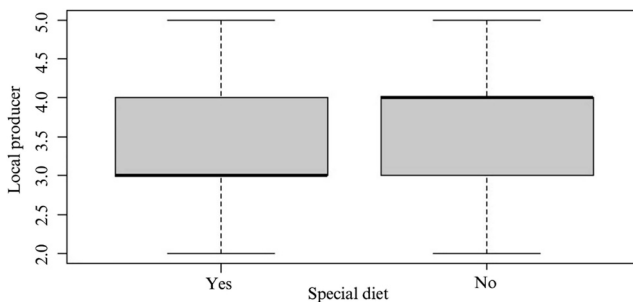


Fig. 3. Boxplot analyses of the local producer trust levels based on special diet of consumer
 Source: Own data.



socially desirable responses rather than expressing genuine attitudes or behaviours. Moreover, the study's exclusive focus on the Hungarian context may restrict the applicability of findings to diverse cultural or geographical settings, urging careful consideration before extending the results to broader populations.

4. CONCLUSIONS

The objective of this research has been to measure consumer trust in local food systems with a representative survey for Hungary. The variables have been originating from Benson's trust toolkit, slightly adjusted for local food systems. Connections between locality and trust as well as what elements affect consumer trust regarding local food were revealed.

According to the Spearman correlation applied to the different food trust levels (interpersonal trust, local person trust, general organisational trust, local farmer trust, and local food trust), a significant correlation can be found among them, indicating that when a higher interpersonal trust could be observed, specific food-related trust levels also tended to be higher. Unexpectedly, the different trust levels remain independent from demographic characteristics, indicating that trust in local food is not region-specific, nor education- or income-specific amongst Hungarian consumers. Differences are present in the general trust levels by age group, as there is a weak positive correlation between interpersonal trust and age, indicating that older people have slightly higher trust in people. An overall higher level of trust can be identified in locality-related trust levels, further strengthening the assumption for the proximity-trust relationship regarding food.

The outcome of the research highlights that consumer trust has to be earned and not given easily even for local food producers. While consumer trust is a key issue and an important factor of competitiveness for local food producers, its role has been under-articulated. While national- and especially international-scale food producers have incomparably better conditions for achieving optimal market options due to high-volume contracting, a small-scale producer is less likely to compete in prices with these actors. Their comparative advantage lies in a better knowledge of a certain local market, consumer expectations, as well as providing a more personalized service. For them, only shared values with the local community and earned trust are those assets, which can attract customers despite less flexibility with pricing and limited capacity for advertising.

ACKNOWLEDGEMENT

Veronika Laszlo's work has been supported by the ÚNKP-22-3 New National Excellence Program of the Ministry for Culture and Innovation from the source of the National Research, Development and Innovation Fund.

Gyula Kasza's work has been supported by the Bolyai János Research Fellowship of the Hungarian Academy of Sciences and the Bolyai+ Fellowship (ÚNKP-21-5) of the New National Excellence Program of the Ministry of Innovation and Technology.

The authors express their gratitude to the National Food Chain Safety Office (Hungary) for granting permission to use the data for scientific purposes.



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