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# CONSUMER CLUSTERS IN SZEKLERLAND – APPLICATION OF THE Q METHOD

## ABSTRACT

The present research aimed to find out how much consumers in Szeklerland[1] value the work of small-scale producers, whether they see the role of local food trade in the economy of the region, how they think about the attitude of young people towards local products, as they will be the consumers of the future, whether they trust the origin of local products and whether they believe that they are healthier than the food products in the wholesale chain. Thirty-nine (39) statements were extracted from research and the daily press and 35 participants were selected. By using the Q method, 5 consumer clusters were clearly outlined, and a summary textual characterization of the statements was provided, characterizing the individuals classified by the factors in the study. The separable consumer clusters were labelled as: conscious, sceptical conscious, cautious passive, enthusiastic, personal, flag bearer. The results that emerge can be used by both small producers and policy makers to improve the local food system.

**Key words:** consumer clusters, local food system, local food consumption, small producers.

**JEL Classification**: Q110, Q130, Q180.

## 1. INTRODUCTION

Local food systems (Delicato *et al*., 2019) are embedded in everyday life and are now almost inseparable from international systems. Whereas years ago, local produce could only be found at farmers' markets, the rapid shift to COVID and multinationals has resulted in local produce being now available on the shelves of almost every supermarket. These changes have been brought about by a shrinking choice for consumers, the search for new market opportunities and regulations on $CO_2$ emissions. At the same time, consumers' awareness also demands the presence of

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[1] Szeklerland is a historical region located in the eastern-southeastern part of Transylvania, and it covers the present-day counties Harghita and Covasna and the southeastern part of Mureș County, inhabited by mostly ethnic Hungarians.

fresh, healthy small-scale produce on all shopping platforms, be they physical shops, markets or online (web shops). In this research we are interested in the opinion of consumers in Szeklerland. Our research questions:

1. How important is it for consumers to maintain a local economy by buying local products?

2. Is there a need for a local food system?

3. Do consumers trust the origin of local products?

Our hypotheses are:

H1: Consumers feel that the survival of small-scale producers is a value-preserving role, and their survival is the responsibility of the local community.

H2: Consumers feel that there is a need for local products to be labelled.

## 2. STATE OF KNOWLEDGE

The current problems of the food system started with globalisation about 60 years ago, when the producer became separated from the consumer, and self-sufficiency ceased (Oppenkowski, 2019). Of course, there were social classes that were served, but most people had to be self-sufficient. With the rise of cities, this disconnect was exacerbated. Today we seem to have come full circle in our human society, and we need to return to the idea of self-sufficiency, of course at a higher level and quality. Agroecology, a new movement, can help to remedy this disconnect, bringing producer and consumer closer together again, striving for food autonomy. They may no longer be one and the same, but they complement and support each other because of their interdependence and the degradation of the environment. Another solution is the emergence of localised food systems, with the increasing use of short food supply chains (SSCs). The EU defines local food systems as systems where production, processing and retailing take place within a defined geographical area and based on the proximity of social relations between producer and consumer (Augère-Granier, 2016).

There are three very important specificities of the Romanian agri-food system, which have left their mark on the food system at both national and regional level, and different alternative solutions have been adopted by farmers from each region. These specificities have often contributed in an unintended way to the emergence of the two solutions mentioned above. Firstly, one should mention the fact that the history of short distribution chains in Romania predates the change of regime in 1989; secondly, the very large number of small farms and, thirdly, the lack of efficient collection and storage systems. These ideas will be briefly expanded to understand the current situation.

1. The Ceauşescu regime's infamous village reform plan (Turnock, 1997) triggered a massive migration from villages to cities, turning previously self-sufficient rural families into starving urban families. Tanasă *et al*. (2016) have drawn the attention of SSC practitioners to this phenomenon: "Over the past 20 years, the EU's

western developed economies have rethought short food supply chains, proposing them as an innovative solution to sustain local agricultural systems, provide food for rural communities, ensure sustainable development, contribute to healthier food consumption and increase consumer awareness. In contrast, in a few emerging economies that are now part of the European Union (especially in Romania), SSCs before 1989 were a "crisis solution" for urban populations whose access to food was severely limited due to the decision of state authorities to mass export". So, while SSCs have been the innovative solution in Western Europe for the last 20 years, in Romania they have been shaped by the constraints of an oppressive regime for more than 35 years.

2. Romania presents a very specific farm structure in the European Union, with a much higher number of 2–5 ha farms across its territory than anywhere else in Europe. In Szeklerland, this type of farming is also reflected in the specific character of the landscape, but also in the lower environmental impact of farms. Although small farms may seem inefficient, they are a form of farming that is worth preserving, learning, and passing on to future generations.

In Romania, 3,225 thousand of the nearly 3,440 thousand farms (94%) are under 10 ha utilised agricultural area, using 35% of the total area, but providing only 25–30% of agricultural production. At the same time, 2,956,380 farms consume 50% of their production (Eurostat, 2023).

For comparison, here are global figures: farms under 2 ha produce 30–34% of food, and farms under 5 ha produce 44–48% of food (Ricciardi *et al.*, 2018).

In the light of these figures, small farms should be given much more prominence in the Romanian public thinking and social perception, as they represent a climate-smart agriculture.

According to the data of the Agricultural Payment Agency of Harghita County, the total agricultural area of the county is 360,000 ha, and farmers claim subsidies for 190,000 ha. According to the legislation, to be eligible for area-based aid, the farmer should have at least 1 ha of land, and it seems that in a large enough area of Harghita County the area under cultivation is less than 1 ha (usually in vegetable and fruit production) or no aid is claimed because the agricultural land is already afforested. With the above knowledge, it is very difficult to use accurate statistics for research.

3. Romania imports more than €1 billion worth agri-food products every year, according to figures published by the Romanian Ministry of Agriculture and Rural Development for 2020. There is a trade deficit in Romania in the whole range of high value-added products: meat, milk and dairy products, fruit and vegetables, and cereal products. Romania's potential capacity to feed dozens of millions of people has become an anecdote in the public domain, but the reality is that for a few reasons this is not the case. The direct link between small producers and consumers, and the need to strengthen the medium-sized agricultural segment are issues that have been gradually put on the agenda of policy makers. The SWOT analysis carried out in the framework of the preparation of the National Strategic

Plan 2021–2027 shows that although the farm structure in Romania is consolidating, 72% of farms are still smaller than 2 hectares and only slightly more than 1 million farms are considered as potentially commercially profitable, i.e. eligible for area payments (MARD, 2021). Lack of market is a major problem for these family farms/households, which produce more than they consume. In Romania, food trade is increasingly carried out by large retail chains, while small producers and farmers mainly turn to traditional markets or sell directly to intermediaries in associations, often at ridiculous prices. According to a USAID report published in 2018, at the time, the big four supermarket chains controlled around 60% of the Romanian food market, while only 15% of products sold in supermarkets were exclusively local. The fresh produce sector is one of the main vulnerabilities of the Romanian agricultural system, given the small size of fruit and vegetable farms and the fact that they often lack access to efficient collection and storage systems. These vulnerabilities have been reflected in high levels of self-consumption over time, particularly in rural areas, which, according to the strategy, has led to a modest threshold of only 20% of all produce reaching farmers' markets. "Tonnes of Romanian fruit and vegetables are discarded every year, with farmers often claiming that they do not have the capacity to sell in season, that there are no storage or processing facilities, and that if they do manage to sell, the price is too low" (Toderiță *et al.*, 2021). The lack of warehouses and vegetable collection infrastructure was already a problem in Romania before the pandemic, with the Association of Romanian Farmers reporting as early as 2020 that they were insufficient (at most 30-40 nationwide) and covered at most 10% of Romanian vegetable production. The creation of storage infrastructure only in terms of premises, without providing the logistical dimension and without coupling it with human and relational infrastructure, would be incomplete and inefficient.

In addition to all these shortcomings and specificities, the creation of short supply chains was supported for the first time in Romania by European funds in the National Development Plan 2014–2020 and the figures show that farmers are not sufficiently involved in such programmes compared to their total number and potential: 71 projects were supported in Romania through these measures, in which only 186 farmers participated, together with schools, health, leisure and hospitality facilities, NGOs and local councils.

## 3. MATERIAL AND METHOD

### 3.1. THE Q METHOD

The Q-method is a psychological research method developed by William Stephenson in 1935. The method is used to explore participants' preferences and opinions about a particular topic or phenomenon. When using the Q-method, participants are asked to sort a series of responses containing different opinions or

statements about the topic under study. The response sequence is usually presented on cards or through a computer program. Participants are asked to classify these opinions according to the extent to which they feel they are relevant or typical, or less typical, in their own point of view.

The Q-method consists of several steps in the analysis of data. First, participants' rankings are processed using factor analysis to identify the key dimensions or factors that determine the similarities and differences between opinions. Then, the factors are interpreted, and categories or types are created to group participants' preferences or opinions.

The Q-method can be applied in various fields, such as personality research, the exploration of social attitudes or preferences, marketing research or organisational diagnosis. It can be used to understand people's opinions or preferences about a particular topic or product and to use this information in decision-making processes or strategic planning. It is important to note that the Q-method is a research method and not a therapeutic or intervention tool. It aims to discover and understand people's preferences or opinions, not to change or influence them.

The Q-method can also be used to study consumer behaviour. It can be used to understand and categorise consumers' preferences, opinions and attitudes towards different products, brands or buying habits. In consumer behaviour research, the Q-method is often used in areas such as market positioning, product development or advertising strategy planning. It can be used to understand which product attributes are most important or attractive to which consumer segments, and to group consumers according to similar preferences.

Consumer behaviour analysis using the Q-method allows us to differentiate market segmentation and consumer preferences. This information can help companies improve their market positioning, develop more targeted marketing campaigns, and develop products more effectively.

Because of the emphasis on the subjective nature of attitudes and opinions, the Q method is classified as a qualitative research method. In this sense, the Q-method is mainly used to explore opinions, attitudes, and value systems. The Q-method also employs quantitative procedures to evaluate the data, such as factor analysis and correlation, with the aim of typification or systematic analysis of individual cases (Brown, 1996). The Q-method is not a substitute for representative surveys, but it helps to identify typical trends. Q-methodology explores the subjective perspectives of individuals and looks for commonalities between them. For example, the Q methodology would ask individuals about what factors they feel are important in relation to political activity such as voting. All statements/opinions mentioned by members of the surveyed group are subjective in nature, so there is no wrong answer. Each member of the group is then asked to rank the statements in a way that best expresses their perspective on political participation. Statistical analysis on each ranking variation reveals the typical types of opinions. The Q-method thus helps the researcher by producing typical opinion types but is not suitable for representative typing (Tóth and Simon, 2006).

Since 1985, the Q-methodology has been widely used in psychology, communication, political science, health, environment, and other related fields (Rahma *et al*., 2020). The method can measure the diversity of subjectivity that characterises an individual's feelings, experiences, opinions, perspectives, or preferences. It also identifies similarities, examines the structure of a phenomenon and the relationships between categories simultaneously. Yet, it is not a method for measuring a sample or population statistically, but rather for exploring options, different perspectives, and consensus within a group on the issues under study. What this method does is cluster people and not cluster variables. Therefore, the researcher must have enough variables to find differences between participants, rather than determining differences between variables as in a factor analysis. The method was applied using older charts and cards; our research was Excel-based. For data analysis, many studies use different software such as QUANAL, PCQ for Windows Academic Edition, PQMethod, Ken-Q Online Analysis and KADE Desktop.

The Q method is about how public discourse can be separated along propositions.
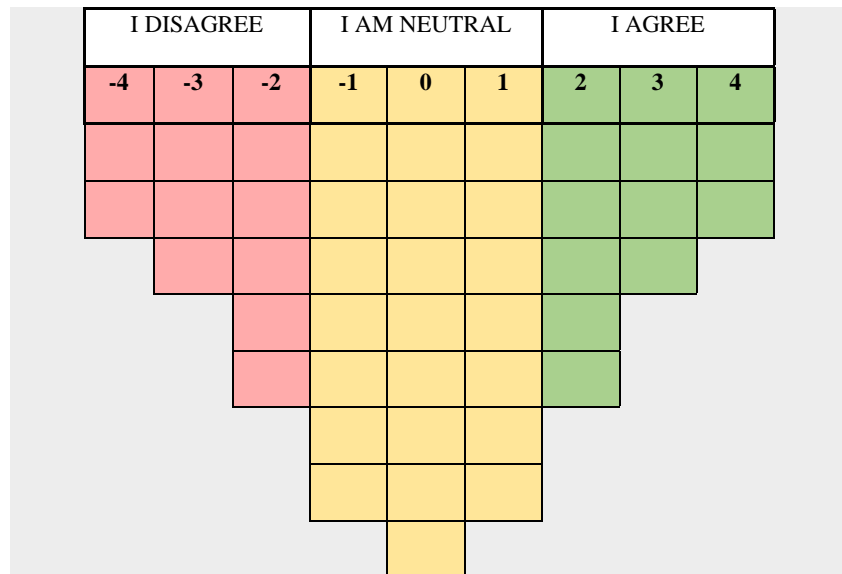
## 3.2. RESEARCH METHODOLOGY

The objective of the present research was to find out how much consumers in Szeklerland value the work of small-scale producers, whether they see the role of local food trade in the economy of the region, how they feel about the attitude of young people towards local products, as they will be the consumers of the future, whether they trust the origin of local products and whether they believe that they are healthier than the food products in the wholesale chain. The survey was conducted between March and May 2023.

Thirty-nine (39) statements were extracted from research and the daily press, and 35 participants were selected to represent both genders, to represent all counties of Szeklerland, to be of different ages and to have different levels of education.

The Q-method used in this study generally consists of the following steps (Webler *et al*., 2009):

1. *Formulating statements related to the given topic.* In this study, 39 statements were formulated (Appendix 1 – Q test statements).
2. *Sampling*. The people selected for the survey (35 people) were contacted by email. Individuals of both genders were targeted, from all three counties, from multiple age groups, with different levels of education.
3. *Distribution of statements (Q sorting).* All participants were asked to allocate statements to the Q-grid based on their preferences. The ranking process is like the Likert scale format. The design of the Q-ranking is an inverted pyramidal shape and uses a forced distribution (Figure 1). Participants were invited by email.

4. *Data analysis.* The last step of the Q-method was data analysis assisted by the KADE software. KADE (Ken-Q Analysis Web Application) version 1.2.1 was used to analyse the data. KADE is a special software for data analysis of the Q-methodology.

| I DISAGREE | | | I AM NEUTRAL | | | I AGREE | | |
|---|---|---|---|---|---|---|---|---|
| -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

*Source:* https://github.com/shawnbanasick/kade.
Figure 1. The director scheme of the Q method.
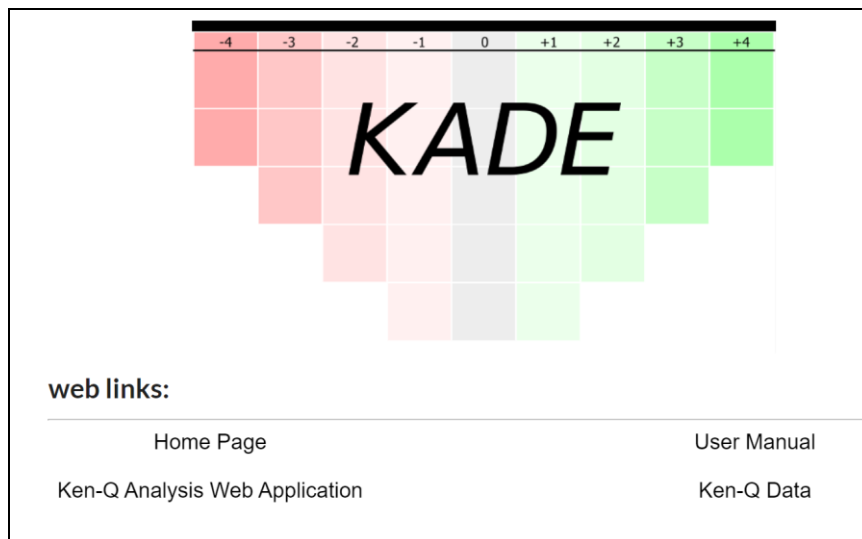
*Source:* https://github.com/shawnbanasick/kade.
Figure 2. Front panel of the KADE software.

The steps of data analysis and processing are as follows:

a) *Data entry.* Input of adjustment variable data and order results into the software. The software displays participants' ordinal distribution data.

b) *Correlation matrix.* Correlation shows the similarities between variables. A high correlation value forms a factor group (Appendix 5 – Correlation Matrix)

c) *Extraction factors.* The extraction method used PCA (Principal Component Analysis). The results have created a group of factors. Factor analysis was performed on factors that have an eigenvalue. Seven (7) factors were offered by the program, but based on the plotting table, up to 5 factors were worth evaluating.

*Table 1*

Eigenvalues and the factors for the present research

|  | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 |
|---|---|---|---|---|---|
| Eigenvalues | 11.3464 | 2.4392 | 1.86 | 1.5133 | 1.3194 |
| % explained variance | 32 | 7 | 5 | 4 | 4 |
| cumulative % explained variance | 32 | 39 | 44 | 48 | 52 |

*Source*: Author's calculations using data from Q tests.

d) *Factor rotation.* Varimax rotation was used because it allows simple structures to be created and maximises the eigenvalue for each factor. Rotation applies only to factors with eigenvalues >1.

e) *Loading factor.* Participants with a loading value >0.5 are flagged (called flagged). The flag describes the groups of participants that represent their views on each factor.

f) *Data output.* Display the results of the entire analysis process.

## 4. RESULTS AND DISCUSSIONS

### 4.1. CLUSTERS FORMED

The ranking of statements (Appendix 2 – Ranking of statements) gives a nice outline of the opinion on each factor. For each factor, the strong positive and negative statements (with which the respondent agrees or disagrees) were ranked and five consumer types were identified (see Table 2).

Clusters formed:

Factor 1: Concerned Conscious (Concerned, conscious consumer, slightly aloof, respects producers, believes in the economic strength of local produce).

Factor 2: Sceptical conscious (Sceptical conscious consumer, likes local product but questions its origin, wary of marketing, distrustful of young buyers).

Factor 3: Cautious Passive (Distant and cautious consumer, values scientific arguments, producer's expertise, but does not consider local consumption as patriotic).

Factor 4: Enthusiastic personal (Consumer who is enthusiastic about small producers, wants to have live contacts, knows young people).

Factor 5: Flag-bearer (holds small producers in high esteem, solution-seeking).

When analysed by education and age, Factor 1 group (34% of respondents) has the highest proportion of consumers with a university degree, master's degree or PhD (58%) and higher education (25%), they tend to live in cities and 75% regularly consume local products. Factor group 2 is made up of young and young-thinking consumers (9% of respondents), 67% with a college degree and 33% with a university or master's degree. Two thirds consume local produce regularly, one third occasionally. Of those in factor group 3 (14%), 40% have a college degree and 40% have a university or master's degree. They are all from small towns and 80% consume local produce regularly, 20% occasionally.

*Table 2*

Distinct factor groups according to KADE

| Part. No. | Factor Gr | Factor 1 | F1 | Factor 2 | F2 | Factor 3 | F3 | Factor 4 | F4 | Factor 5 | F5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | F1-1 | 0.7097 | Flagged | 0.1646 | | 0.2555 | | 0.1423 | | 0.1977 | |
| 16 | F1-2 | 0.6049 | Flagged | -0.1594 | | -0.0689 | | -0.1739 | | 0.5165 | |
| 1 | F1-3 | 0.587 | Flagged | 0.2666 | | -0.0471 | | 0.0865 | | 0.0604 | |
| 25 | F1-4 | 0.5809 | Flagged | 0.3223 | | 0.2707 | | 0.1822 | | 0.0325 | |
| 27 | F1-5 | 0.5604 | Flagged | -0.111 | | 0.25 | | 0.2149 | | 0.4374 | |
| 18 | F1-6 | 0.5086 | Flagged | -0.1663 | | 0.0945 | | 0.3081 | | 0.3003 | |
| 3 | F1-7 | 0.4628 | Flagged | 0.2006 | | 0.0231 | | 0.0169 | | 0.2643 | |
| 8 | F1-8 | 0.4533 | Flagged | 0.2593 | | 0.3588 | | -0.1548 | | 0.2179 | |
| 6 | F1-9 | 0.4521 | Flagged | 0.3892 | | 0.0908 | | 0.0391 | | 0.4044 | |
| 29 | F1-10 | 0.4468 | Flagged | -0.1377 | | 0.0782 | | 0.1454 | | 0.3863 | |
| 21 | F1-11 | 0.4262 | Flagged | 0.0052 | | 0.0686 | | -0.016 | | 0.2041 | |
| 34 | F1-12 | 0.4196 | Flagged | 0.0699 | | 0.2624 | | 0.2238 | | 0.2551 | |
| 15 | F2-1 | -0.1463 | | 0.6655 | Flagged | 0.2463 | | -0.0053 | | -0.2058 | |
| 4 | F2-2 | 0.2104 | | 0.6562 | Flagged | -0.0504 | | -0.0951 | | 0.0487 | |
| 2 | F2-3 | 0.3726 | | 0.6372 | Flagged | 0.146 | | 0.0824 | | 0.1472 | |
| 19 | F3-1 | -0.0112 | | 0.1732 | | 0.6725 | Flagged | -0.0175 | | 0.1118 | |
| 10 | F3-2 | 0.3139 | | 0.1094 | | 0.5599 | Flagged | -0.0786 | | 0.1047 | |
| 30 | F3-3 | 0.2471 | | -0.0881 | | 0.5415 | Flagged | 0.0972 | | 0.2168 | |
| 12 | F3-4 | -0.2122 | | 0.0877 | | 0.4824 | Flagged | 0.237 | | 0.0352 | |
| 11 | F3-5 | 0.2219 | | 0.0203 | | 0.3856 | Flagged | 0.2229 | | 0.1766 | |
| 22 | F4-1 | 0.3185 | | -0.0581 | | 0.222 | | 0.7163 | Flagged | 0.2912 | |
| 23 | F4-2 | 0.3185 | | -0.0581 | | 0.222 | | 0.7163 | Flagged | 0.2912 | |
| 35 | F4-3 | -0.107 | | 0.0893 | | -0.0862 | | 0.4914 | Flagged | -0.1918 | |
| 9 | F5-1 | 0.2213 | | 0.0532 | | 0.1427 | | 0.0002 | | 0.7625 | Flagged |
| 24 | F5-2 | 0.271 | | -0.0825 | | 0.2596 | | -0.0518 | | 0.649 | Flagged |
| 14 | F5-3 | 0.1983 | | -0.0433 | | 0.2062 | | -0.0381 | | 0.6471 | Flagged |
| 17 | F5-4 | 0.5515 | | 0.0798 | | -0.0862 | | 0.2805 | | 0.6165 | Flagged |
| 20 | F5-5 | 0.4464 | | 0.2342 | | 0.0862 | | 0.148 | | 0.6156 | Flagged |
| 7 | F5-6 | 0.0528 | | 0.191 | | 0.4308 | | 0.2528 | | 0.5913 | Flagged |
| 26 | F5-7 | -0.0609 | | 0.4105 | | 0.1306 | | 0.2261 | | 0.5818 | Flagged |
| 28 | F5-8 | 0.3747 | | -0.0334 | | 0.1098 | | 0.4441 | | 0.5674 | Flagged |
| 13 | F5-9 | 0.1476 | | -0.0933 | | 0.2207 | | 0.5303 | | 0.5604 | Flagged |
| 32 | F5-10 | 0.4032 | | -0.1184 | | 0.3788 | | 0.1216 | | 0.5309 | Flagged |
| 33 | F5-11 | 0.3634 | | 0.1409 | | -0.0048 | | 0.1011 | | 0.4858 | Flagged |
| 31 | F5-12 | 0.417 | | -0.0689 | | 0.3619 | | 0.103 | | 0.4752 | Flagged |

Loadings Table with Defining Sorts Flagged

*Source*: Author's calculations using KADE software.

Group 4 (9%) represents all counties of Szeklerland and all types of administrative units. 67% of respondents in this group have a college degree and 33% have a university or master's degree. They all regularly consume local products. In factor group 5 (34%), 58% have a college degree, 42% a university or master's degree, 8% a high school degree. They live in villages and small towns, 50% consume local products regularly, 50% sometimes, but some of them take local products as gifts.



*Source:* Authors' own editing.
Figure 3. Established consumer clusters (own editing).

## 4.2. CORRELATIONS

When examining the correlation between the factor groups, it was found that there is a medium correlation between factors 1–4, 3–5, 4–5 and a strong correlation between factors 1–5. A contrast is noticed between factors 4 and 2 (Table 3).

*Table 3*

Correlations between factors

| Factor Score correlations | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 |
|---|---|---|---|---|---|
| Factor 1 | 1 | 0.2816 | 0.3907 | 0.467 | 0.7171 |
| Factor 2 | 0.2816 | 1 | 0.285 | 0.0501 | 0.1574 |
| Factor 3 | 0.3907 | 0.285 | 1 | 0.2773 | 0.4277 |
| Factor 4 | 0.467 | 0.0501 | 0.2773 | 1 | 0.4972 |
| Factor 5 | 0.7171 | 0.1574 | 0.4277 | 0.4972 | 1 |

*Source:* Authors' calculations.

According to the above assessment, there is a strong correlation between concerned, knowledgeable consumers and flagship consumers, and a contrast between the sceptical, knowledgeable consumer (likes local produce but questions its origin, wary of market sales, distrustful of young buyers) and the enthusiastic consumer who wants to have a live relationship with small producers (knows young people).

## 4.3. DETAILED DESCRIPTION OF THE FACTORS

### 4.3.1. Factor 1: 12 respondents

Factor group name: **Concerned conscious.** They are the concerned, aware, slightly aloof consumers, respectful of producers, believing in the economic strength of local produce.

Among the 12 respondents, there is one person of very high standing and character, the others form two groups in the weighting of the rankings.

*Table 4*

Weighting of claims for Factor 1

| Q-Sort | Weight |
|--------|----------|
| 5 | 10.00000 |
| 16 | 6.67145 |
| 1 | 6.26338 |
| 25 | 6.13155 |
| 27 | 5.71348 |
| 18 | 4.79796 |
| 3 | 4.11875 |
| 8 | 3.99000 |
| 6 | 3.97398 |
| 29 | 3.90405 |
| 21 | 3.64221 |
| 34 | 3.56151 |

*Source:* Authors' calculations.

*General characteristics based on factor analysis:*

The most prominent positive statements indicate that consumers in this group consider farmers' markets important, as they not only provide healthy and fresh food, but also as an important venue for expressing a sense of belonging to the local community. They are very conscious consumers and it is obvious to them that the short food chain means less food goes to waste, so the environmental impact of local produce is much lower than that of industrial food products. They associate quality of life with the consumption of local produce and accept the scientifically proven fact that the quality of life of consumers is determined by the quantity and quality of the food consumed. They are also concerned that a large proportion of

local food products are sold on the "black market", bypassing taxation and food safety controls, usually through social media. For them, small-scale producers are an important element of the landscape economy, and it is because of the landscape that they have been able to grow in such good numbers, so their survival is also a matter of landscape. They feel that local people are proud of the traditional products they consume. Not only is this a differentiating statement from the other factors, but the z-score for this statement is higher than for all other factors.

This group affirms that although there is a large supply of products in large food chains, there is also a high demand for local products, and they do not question the economic knowledge of producers. They do not believe that the introduction of school lunches would solve the problem of selling local food and have great confidence in the millennial age group (born between 1981 and 1996), denying that they are looking for products offering the best value for money, whether they are produced in Romania or not. The z-score for this statement is lower than for all other factors.

Among the statements that distinguish the other factors, the one about food waste, i.e. less food going to waste in the short food chain, is prominent, as is the one highlighting the landscape. Here are the most prominent differentiating statements for Factor 1:

- Small farms in Szeklerland are not only a consequence of poverty but also of landscape endowments.
- Most local food products are sold "black", bypassing taxation and food safety controls.
- The millennials (born between 1981 and 1996) are looking for products that offer the best value for money, whether they are produced in Romania or not.
- In Romania, the creation of local food supply systems is justified by the very large number of small farms.
- Local products are more expensive not because of high production costs, but because producers, due to their limited economic knowledge, price them wrongly.

The KADE programme generated the solutions for each factor (Appendix 3).

### 4.3.2. Factor 2: 3 respondents

Factor group name: **Doubting conscious.** They are the sceptically conscious consumers who love local produce but question their origin, are wary of market sales, and distrust young buyers. They are the young, the youthful-minded group. For them, the black economy, the uncertain origin of local produce, inefficiency in the work of small producers, represent big problems, and young people are disinterested in local produce.

*Table 5*

Weighting of claims for factor 2

| Q-Sort | Weight |
|:------:|:------:|
| 15 | 8.35415 |
| 4 | 8.05958 |
| 2 | 7.50234 |

*Source:* Authors' calculations.

There are very similar weightings for members of this factor group.

This group of consumers claims that the quality and origin of products sold on social media (Facebook) is uncertain and that many local food products are sold "black", bypassing taxation and food safety controls. This clearly undermines trust in small producers. They see a lack of interest among the younger generation in local products and advertising promoting short supply chains, and consumers want local products to be certified by a label, but do not want to pay a higher price for them.

Small producers are perceived as inefficient and therefore have no reason to survive and local products are more expensive not because of high production costs but because they are mispriced by producers due to their limited economic knowledge. They do not see any justification for the fact that local products are healthier than products produced under controlled conditions in industrial agriculture.

Purchasing group 2 disagrees that small farmers are not aware of the opportunities offered by food marketing and modern technologies, which makes local food expensive. The z score for this statement is lower than for all the other factors, and the majority of consumers prefer to buy local food because they are aware that they are helping to develop the economy of the area. The z-score for this statement is lower than for all other factors.

Other weighted negative statements:
– The local product trademark also guarantees good product quality. The z score for this claim is lower than for all other factors.
– The z score for the short food chain. The z score for this statement is lower than for all other factors.
– Selling local products online undermines direct human contact.

Claims that distinguish it from the other factors:
• A large proportion of local food products are sold "black", bypassing taxation and food safety controls.
• The young generation is disinterested in local products and advertising promoting short supply chains.
• Small producers are not managed efficiently and therefore have no reason to survive.
• There is no evidence that local products are healthier than those produced under controlled conditions in industrial agriculture.

- Local produce is more expensive not because of high production costs, but because producers misprice it due to their limited economic knowledge.
- The local product brand also guarantees good product quality.
- Small producers are not aware of the possibilities offered by food marketing and modern technologies, that is why local food is expensive.
- A large proportion of consumers prefer to buy local food because they know that they are helping to develop local economy.

### 4.3.3. Factor 3: 5 respondents

Factor group name: **Cautious passives.** Distant and cautious consumers, they value scientific arguments and producers' expertise, but do not consider the consumption of local products as patriotic.

*Table 6*

Weighting of claims for Factor 3

| Q-Sort | Weight |
|--------|--------|
| 9 | 8.5864 |
| 10 | 5.70369 |
| 30 | 5.35807 |
| 12 | 4.39688 |
| 11 | 3.1677 |

*Source:* Authors' calculations.

This group of consumers agrees that the survival of small farmers is not linked to tourism and that the peasant way of life is not at all attractive to people today.

They believe that consumers' food choices are constantly changing. They have a lot of confidence in young consumers and believe that they are willing to pay more for vegetables produced in an environmentally friendly way. They see a very limited range of products in farmers' markets and would like to see the agricultural and economic skills of small producers developed into short supply chains. They believe that local people are proud of the traditional products they consume.

They believe that modern farming practices should be also applied to traditional farming and disagree that the production of local products completely solves food self-sufficiency in the region, nor that the so-called "black market" is often a manifestation of positive civil disobedience, a legitimate protest against bureaucracy.

Claims that distinguish it from other factors:
- The survival of small producers is not linked to tourism.
- Consumer food choices are constantly changing.
- Most small farmers have neither agricultural nor economic skills. This is a major obstacle to the development of short supply chains.

### 4.3.4. Factor 4: 3 respondents

Factor group name: **enthusiastic, personal**. A consumer who is enthusiastic about small producers wants to have a live relationship and knows the buying habits of young people.

*Table 7*

Weighting of claims for factor 4

| Q-Sort | Weight |
|--------|--------|
| 22 | 10.2882 |
| 23 | 10.2882 |
| 35 | 4.5306 |

*Source:* Authors' calculations.

This group of consumers claims that the peasant way of life is not at all attractive for today's people, but they need to be looked after and this is the responsibility of local communities. They see a danger in the proliferation of markets and forms of agricultural support, because small farmers adapt to them and lose their originality and identity of work. They see that the creation of local food supply systems in Romania is justified by the very large number of small farms and that the production of local products completely solves the problem of food self-sufficiency in the region. They do not think that selling local products online is a good idea, because it undermines direct human contact. They do not agree that small producers are not managing efficiently and that the most efficient way to sell local produce is through boxed home delivery. They believe that there is a link between the survival of small producers and the development of tourism. They also disagree that the local food system is more about social cohesion and that its role in rural development is not significant, and that the quality and origin of products sold on social media (Facebook) is uncertain.

Claims that distinguish it from other factors:
- The market and the various forms of agricultural support mean that no one is independent. Every small producer adapts to them, losing originality and identity of work.
- The production of local products completely solves the problem of food self-sufficiency in the region.
- Selling local products online undermines direct human contact.
- The most effective way to sell local products is through boxed home delivery.

### 4.3.5. Factor 5: 12 respondents

Factor group name: **Flag bearer.** Flag bearers are avid consumers of local produce, who value small-scale producers, solution seekers for the development of the local food system.

This group of factors considers it very important that society gives enough space to farmers, as they represent an ancient culture worth preserving; without them a secure food supply is unthinkable, and they like farmers' markets for the sense of community they provide.

*Table 8*

Weighting of claims for factor 5

| Q-Sort | Weight |
|--------|----------|
| 9 | 12.73928 |
| 24 | 7.84174 |
| 14 | 7.78565 |
| 17 | 6.95482 |
| 20 | 6.93223 |
| 7 | 6.35842 |
| 26 | 6.15078 |
| 28 | 5.85216 |
| 13 | 5.71348 |
| 32 | 5.17001 |
| 33 | 4.44688 |
| 31 | 4.29268 |

*Source:* Authors' calculations.

The quantity and quality of the food they eat is important to them, and they would like to see the quality of local produce certified by a label, but they do not want to pay a higher price for it. They believe that the introduction of school lunches would solve the problem of selling local food. They also see potential in the fact that the survival of local producers is linked to the development of tourism in Szeklerland. They trust in the healthiness and origin of local products and consider the local food system very important. For them, the range of products offered by farmers' markets is sufficient, and they consider the role of the local food system in rural development to be important. They value the development of short supply chains as a conscious activity, but they are not naïve and know that the production of local products does not completely solve the problem of food self-sufficiency in the area. They see strength in the NGOs that serve this endeavour.

Statements that distinguish them from other factors:

- The introduction of school lunch would solve the problem of selling local food.
- The survival of small producers is not linked to tourism.
- The production of local products would completely solve the problem of food self-sufficiency in the area.
- NGO initiatives to run local food systems have a raison d'être, but they cannot survive in the long term.
- There is a very limited range of products on farmers' markets.
- There is no evidence that local products are healthier than those produced under controlled conditions in industrial agriculture.

## 4.4. CLAIMS THAT DISTINGUISH THE FACTORS

The most typical, distinctive statements that distinguish factor groups from each other can also be obtained using the KADE software. There are some statements that are distinctive for several factor groups, but interestingly, the statement is acceptable for one group and not for the other.

*There is no evidence that local products are healthier than products produced under controlled conditions in industrial agriculture*. This statement is evidence for the doubting conscious group, but flag-wavers question its validity, i.e. they believe that local produce is healthier than industrial food products.

*The local product label also guarantees good product quality*. The doubtful conscious group disagrees with the statement, but the cautious passive group agrees.

*A large proportion of consumers prefer to buy local food because they are aware that they are helping to develop regional economy*. Only one factor group (the sceptical aware) made this statement, but for them it was also in a negative sense, which should be a cause for reflection. In other words, it is very difficult to decide whether consumers do not prefer to buy local food or whether they do not believe that it helps developing the local economy.

*In a short food chain, less food goes to waste*. It appears as discrimination to the concerned conscious factor group, but it also appears as a positive consensus to the cautiously passive and flag-bearers.

*In Romania, the creation of local food supply systems is justified by the very large number of small farms*. The concerned conscious group vetoes this claim, but the enthusiastic personal ones agree.

*Much local food is sold on "black market", bypassing taxation and food safety controls.* Both the concerned conscious and the doubting conscious shopper agree with this claim. Producing local produce is a complete solution to food self-sufficiency in the region. The enthusiastic personal agrees, the flag bearer disagrees with this statement.

*There is a very narrow range of produce at farmers' markets.* The flag bearer disagrees with this statement, but the cautious passive says it is true.

*In Szeklerland, small farms are not only the result of poverty, but also of the landscape.* To the concerned conscious shopper, it comes across as discrimination.

*The survival of small farmers is not linked to tourism*. For the enthusiastic personal consumer and flag bearer, this statement is evidence.

*NGO initiatives to run local food systems have a raison d'être but cannot survive in the long term*. The flag bearer disagrees with this statement.

*Smallholder farmers are not managed efficiently and therefore have no raison d'être to survive.* To the doubting knowledgeable, it is evidence.

*Small farmers are not aware of the opportunities offered by food marketing and modern technologies, which is why local food is expensive*. The doubtful aware and the cautious passive disagree with this statement.

*Consumer food choices are constantly changing*. For the cautious passive, this statement is evidence, but flag-wavers and enthusiastic personalists agree.

*The most effective way to sell local produce is through boxed home delivery.* The enthusiastic personal disagree with this statement. He prefers direct contact.

*Selling local products online undermines direct human contact.* For the enthusiastic personal, this statement is evidence.

*The younger generation is disinterested in local products and advertising that promotes short supply chains.* For the doubting conscious, it is evidence.

*Local products are more expensive not because of high production costs but because producers, due to their limited economic knowledge, misprice them.* The concerned conscious agrees, the doubting conscious doubts this claim.

*Most small farmers have neither agricultural nor economic skills.* This is the main obstacle to the development of short supply chains. The cautious passive agrees.

*The millennials (born between 1981 and 1996) are looking for products that offer the best value for money, whether they are made in Romania or not.* The cautious aware disagrees with this statement.

*The introduction of school lunches would solve the problem of selling local food.* This statement is agreed by the flag bearer who is looking for solutions to improve local food systems.

*No one is self-sufficient because of the market and the various forms of agricultural support.* Every small producer adapts to them, thus losing his originality and identity of his work. The enthusiastic personal consumer agrees.

In Appendix 4 there are the claims that distinguish factors from each other.


## 4.5. CONSENSUS

According to the evaluation, there is no single common consensus among the 5 factors, but there are statements that are generally agreed or generally denied by the participants of all 5 factor groups.

*General consensus:*
Consumers completing the Q test agree on a very large number of statements specific to the local food system. All of them would like to value farmers more, as they represent an ancient culture worth preserving and without them a secure food supply in Szeklerland is unthinkable, but they also see that the peasant way of life is not attractive for today's people. The survival of small-scale farmers is a matter of value preservation, and their survival is the responsibility of the local community. They believe that customers come to farmers' markets not only for the healthy and fresh food they buy, but also for the sense of belonging to the local community. The interviewed consumers would like to see the quality of local produce certified by a label, but they do not want to pay a higher price for it, because they trust local producers. They are also very aware that, like in other parts of the world, consumers' food choices in Szeklerland are constantly changing, a fact that poses a challenge to small producers.
  – The term "peasants" is a pejorative term, even though they represent an ancient culture worth preserving, and without them a secure food supply is unthinkable.

- Farmers' markets not only provide healthy and fresh food. They are also an important expression of belonging to the local community.
- Consumers want local products to be certified by a label, but they do not want to pay a higher price for them.
- The peasant way of life is not at all attractive to people today.
- The survival of small producers is a guarantee for the preservation of rural values, which is the responsibility of local communities.
- Consumers' food choices are constantly changing.
- Younger consumers are willing to pay more for vegetables produced in an environmentally friendly way (more neutral).

*Disagree in general:*

Consumers who completed the Q-test expressed minor to major disagreement on a few issues: the development of short supply chains in Romania is not a conscious effort, but a consequence of the lack of a wholesale market. In other words, respondents assume that the development of short supply chains is a conscious process in Romania. It is not clear if consumers do not put enough emphasis on buying local products or if buying local products does not help the economic development of the region. There is general agreement that a local food system is necessary and should be favoured over large food chains.

*Table 9*

Consensus statements

| Consensus statements | | |
|---|---|---|
| **All groups agree** | | **They disagree** |
| The term 'peasants' is a pejorative, but they are an ancient culture worth preserving and without them a secure food supply is unthinkable. | | The development of short supply chains in Romania is not a conscious effort, but a consequence of the lack of a wholesale market. |
| Farmers' markets not only provide healthy and fresh food. They are also an important expression of belonging to the local community. | | A large proportion of consumers prefer to buy local food, because they are aware that they are helping to develop the regional economy. |
| Consumers want the quality of local products to be certified by a label, but they do not want to pay a higher price. | | In Romania, there is no need for local products, because everything is available in the large food chains. |
| The peasant way of life is not at all attractive to people today. | | |
| The survival of small producers is a key to preserving rural assets, which is the responsibility of local communities. | | |
| Consumers' food choices are constantly changing | | |
| Younger consumers are willing to pay more for vegetables produced in an environmentally friendly way (more neutral) | | |

*Source:* Authors'research.

– Most consumers prefer to buy local food because they are aware that they are helping to develop the region's economy.
– In Romania, there is no need for local products because everything is available in the big food chains.
– In Romania, the development of short supply chains is not a conscious effort but a consequence of the lack of a wholesale market.

## 5. CONCLUSIONS

The consumers in Szeklerland surveyed by using the Q-method can be divided into 5 distinct clusters based on their perception of small producers, their expectations of the product label and their assessment of the impact of small producers' work on regional economy. It was possible to answer the research questions raised and to accept one of the hypotheses and propose another for further research.

1. How important is it for consumers to maintain a local economy by buying local products?

The answer was clearly very important. The survival of small producers is a value-preserving role, and their survival is the responsibility of the local community, consumers say. At the same time, more emphasis should be placed on improving producers' knowledge (marketing, economic knowledge, buying habits, etc.) to ensure their survival.

2. Is there a need for a local food system? The answer to this question is also more or less yes. All of them would like to appreciate the peasants who work the land more, as they represent an ancient culture worth preserving and without them a secure food supply in Szeklerland is unthinkable, but they also see that the peasant way of life is not attractive for today's people. It was also found that the consumption habits of young people are not fully known by respondents, so this is worth paying attention to in another study.

3. Do consumers trust the origin of local products? This research question did not receive a clear answer. Consumers with a sceptical attitude are not sure about the origin of local products, but they are not fully confident about the possibility of certification and are not willing to bear the costs of certification. It is likely that they trust producers rather than products, but further research is needed to establish this, considering several aspects.

The hypotheses raised at the outset of the research are stated as follows:

H1: Consumers feel that the survival of small-scale producers is a value-preserving role and that their survival is the responsibility of the local community. This hypothesis is accepted by all clusters, and it is also shown that the human link between producer and consumer is very important.

H2: Consumers believe that there is a need for local products to be labelled. This hypothesis cannot be clearly proven because respondents are not willing to

pay a higher price for a trademark. This may be partly due to the difficult economic situation and partly due to the trust in producers.

The authors believe that the results that emerge can be used by both small producers and policy makers to improve the local food system.

The suggestions of the consumers surveyed should be considered by decision-makers:

– Farmers who work the land should be valued more, as they represent an ancient culture worth preserving and without them a secure food supply in Szeklerland is unthinkable, but the peasant way of life is not attractive for today's people.
– The survival of small farmers is a matter of value, and their survival is the responsibility of the local community.
– Customers come to farmers' markets not only to buy healthy and fresh food, but also for a sense of belonging to the local community.
– The quality of local produce would be certified by a label, but the cost of this would have to be borne from public funds.

# 6. ACKNOWLEDGEMENTS

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**Appendix 1: Q test statements**

| | |
|---|---|
| 1 | The term 'peasants' is pejorative, but they are an ancient culture worth preserving and without them a secure food supply is unthinkable. |
| 2 | There is no evidence that local products are healthier than those produced under controlled conditions in industrial agriculture. |
| 3 | The local product mark is also a guarantee of good product quality. |
| 4 | Farmers' markets not only provide healthy and fresh food. They are also an important expression of belonging to the local community. |
| 5 | In Romania, the development of short supply chains is not a conscious effort but a consequence of the lack of a wholesale market. |
| 6 | Consumers would like to see the quality of local products certified by a trademark, but they do not want to pay a higher price for it. |
| 7 | A large proportion of consumers prefer to buy local food because they know that they are helping to develop the regional economy. |
| 8 | With a short food chain, less food goes to waste. |
| 9 | The quality and origin of products sold on social media (Facebook) is uncertain. |
| 10 | In Romania, the creation of local food supply systems is justified by the very large number of small farms. |
| 11 | The peasant way of life is not at all attractive for people today. |
| 12 | In Romania, there is no need for local products, because everything is available in the large food chains. |
| 13 | Most of the local food products are sold 'black', bypassing taxation and food safety controls. |
| 14 | The production of local products completely solves the problem of food self-sufficiency in the region. |
| 15 | The so-called 'black market' is often a manifestation of positive civil disobedience, a legitimate protest against bureaucracy. |
| 16 | Traditional farming means that modern farming methods are not used. |
| 17 | There is a very limited supply of products on farmers' markets. |
| 18 | In Szeklerland, small farms are the result not only of poverty but also of the landscape. |
| 19 | The survival of small farmers is not linked to tourism. |
| 20 | NGO initiatives to run local food systems have a right to exist, but they cannot survive in the long term. |
| 21 | Local people are proud of the traditional products they consume. |
| 22 | In Romania, the short food distribution chain existed before the regime change. |
| 23 | The local food system is rather kept alive by social cohesion and its role in rural development is not significant! |
| 24 | The survival of small-scale producers is the key to preserving rural values, which is the responsibility of local communities. |
| 25 | Small farmers are not managing efficiently, so there is no reason for them to survive. |
| 26 | Small farmers are not aware of the opportunities offered by food marketing and modern technologies, which makes local food expensive. |
| 27 | Consumer food choices are constantly changing. |
| 28 | Most local products meet the requirements for organic certification, but producers do not have the money to obtain certification. |
| 29 | The most effective way of selling local products is through home delivery in boxes. |
| 30 | Selling local products online undermines direct human contact. |
| 31 | It is scientifically proven that the quality and quantity of food consumed determines the quality of life of the consumer. |

| 32 | Monthly farmers' fairs cannot be considered a civil initiative in Szeklerland, as they were started by municipalities. |
| 33 | Younger consumers are willing to pay more for vegetables produced in an environmentally friendly way. |
| 34 | The younger generation is not interested in local products and advertising promoting short supply chains. |
| 35 | Local produce is more expensive not because of high production costs, but because producers, due to their limited economic knowledge, misprice it. |
| 36 | Most small producers have neither agricultural nor economic skills. This is a major obstacle to the development of short supply chains. |
| 37 | The millennial generation (born between 1981 and 1996) is looking for products offering the best value for money, whether or not they are produced in Romania. |
| 38 | The introduction of school lunches would solve the problem of selling local food. |
| 39 | The market and the various forms of agricultural subsidies mean that no one is independent. Every small producer adapts to them, losing his originality and identity of work. |

*Source:* Authors' calculations

**Appendix 2: Ranking of claims**

| Factor 1 | | Factor 2 | | Factor 3 | | Factor 4 | | Factor 5 | |
|---|---|---|---|---|---|---|---|---|---|
| Statement Number | Z-score | Statement Number | Z-score | Statement Number | Z-score | Statement Number | Z-score | Statement Number | Z-score |
| 4 | 2.087 | 9 | 1.982 | 19 | 1.964 | 11 | 2.172 | 1 | 1.969 |
| 8 | 1.700 | 13 | 1.974 | 11 | 1.936 | 24 | 1.878 | 4 | 1.883 |
| 1 | 1.694 | 6 | 1.379 | 27 | 1.547 | 1 | 1.433 | 31 | 1.753 |
| 31 | 1.542 | 34 | 1.226 | 9 | 1.247 | 39 | 1.335 | 24 | 1.667 |
| 18 | 1.401 | 25 | 1.011 | 8 | 1.013 | 10 | 1.184 | 6 | 1.181 |
| 21 | 1.338 | 4 | 0.984 | 10 | 0.973 | 14 | 1.086 | 8 | 0.935 |
| 24 | 1.327 | 1 | 0.962 | 31 | 0.930 | 32 | 1.086 | 38 | 0.935 |
| 15 | 0.919 | 2 | 0.818 | 33 | 0.862 | 4 | 0.943 | 21 | 0.901 |
| 11 | 0.754 | 37 | 0.790 | 17 | 0.822 | 37 | 0.694 | 3 | 0.795 |
| 13 | 0.509 | 35 | 0.645 | 21 | 0.688 | 8 | 0.597 | 15 | 0.551 |
| 39 | 0.438 | 10 | 0.617 | 36 | 0.578 | 30 | 0.543 | 22 | 0.483 |
| 20 | 0.405 | 20 | 0.596 | 23 | 0.481 | 31 | 0.543 | 10 | 0.428 |
| 22 | 0.316 | 15 | 0.560 | 24 | 0.476 | 20 | 0.445 | 28 | 0.375 |
| 27 | 0.289 | 32 | 0.451 | 22 | 0.452 | 28 | 0.445 | 39 | 0.340 |
| 29 | 0.278 | 18 | 0.388 | 6 | 0.422 | 6 | 0.392 | 18 | 0.319 |
| 28 | 0.251 | 11 | 0.360 | 37 | 0.393 | 27 | 0.347 | 27 | 0.297 |
| 17 | 0.203 | 33 | 0.216 | 1 | 0.322 | 5 | 0.294 | 37 | 0.284 |
| 6 | 0.051 | 5 | 0.194 | 20 | 0.306 | 3 | 0.249 | 19 | 0.132 |
| 33 | -0.022 | 17 | 0.187 | 4 | 0.279 | 17 | 0.098 | 29 | 0.087 |
| 2 | -0.041 | 22 | 0.180 | 3 | 0.135 | 21 | 0.098 | 9 | 0.049 |
| 5 | -0.109 | 27 | 0.180 | 29 | 0.111 | 33 | -0.098 | 33 | 0.026 |
| 9 | -0.162 | 23 | 0.021 | 34 | -0.024 | 38 | -0.098 | 11 | 0.008 |
| 3 | -0.170 | 24 | -0.035 | 39 | -0.204 | 26 | -0.196 | 36 | -0.162 |
| 32 | -0.277 | 31 | -0.243 | 35 | -0.324 | 7 | -0.249 | 13 | -0.294 |
| 37 | -0.430 | 8 | -0.374 | 13 | -0.381 | 22 | -0.445 | 30 | -0.400 |
| 10 | -0.530 | 21 | -0.395 | 30 | -0.502 | 15 | -0.543 | 14 | -0.495 |
| 30 | -0.593 | 28 | -0.403 | 32 | -0.539 | 36 | -0.543 | 20 | -0.503 |
| 16 | -0.638 | 39 | -0.525 | 2 | -0.555 | 13 | -0.641 | 34 | -0.557 |
| 19 | -0.692 | 36 | -0.602 | 38 | -0.627 | 2 | -0.694 | 32 | -0.636 |
| 26 | -0.730 | 29 | -0.624 | 26 | -0.644 | 35 | -0.694 | 16 | -0.796 |
| 36 | -0.843 | 30 | -0.776 | 28 | -0.765 | 9 | -0.837 | 35 | -0.852 |
| 34 | -0.856 | 19 | -0.970 | 18 | -0.829 | 16 | -0.890 | 5 | -0.854 |
| 23 | -0.979 | 38 | -1.005 | 7 | -0.921 | 34 | -0.890 | 7 | -0.861 |
| 7 | -1.000 | 12 | -1.184 | 5 | -1.086 | 18 | -0.988 | 26 | -0.979 |
| 38 | -1.025 | 3 | -1.421 | 15 | -1.264 | 23 | -1.041 | 25 | -1.213 |
| 14 | -1.035 | 14 | -1.600 | 25 | -1.768 | 12 | -1.628 | 23 | -1.264 |
| 25 | -1.574 | 16 | -1.780 | 12 | -1.802 | 19 | -1.628 | 17 | -1.484 |
| 35 | -1.830 | 26 | -1.801 | 16 | -1.848 | 25 | -1.780 | 2 | -1.786 |
| 12 | -1.967 | 7 | -1.982 | 14 | -1.856 | 29 | -1.976 | 12 | -2.264 |

*Source:* Authors' calculations

**Appendix 3**

Q Triangle generated for factor 1

## Composite Q sort for Factor 1

| -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|
| "In Romania, there is no need for local products, because | Most small producers have neither agricultural nor economic | A large proportion of consumers prefer to buy local food | "The millennial generation (born between 1981 and 1996) is looking for | "NGO initiatives to run local food systems have a rigt to exist, | "In Romania, the short food distribution chain existed before the | "In Szeklerland, small farms are the result not only of poverty | "The survival of small-scale producers is the key to preserving | Farmers' markets not only provide healthy and fresh food. |
| "Local produce is more expensive not because of high production | The introduction of school lunches would solve the problem of | The younger generation is not interested in local products and | "In Romania, the creation of local food supply systems is justified by | The local product mark is also a guarantee of good product | There is a very limited supply of products on farmers' markets. | Local people are proud of the traditional products they consume. | "With a short food chain, less food goes to waste." | It is scientifically proven that the quality and quantity of |
| | "Small farmers are not managing efficiently, so there is no | "Small farmers are not aware of the opportunities offered by food | The quality and origin of products sold on social media (Facebook) is | "Most of the local food products are sold 'black', bypassing | Consumer food choices are constantly changing. | "The so-called 'black market' is often a manifestation of positive | "The term 'peasants' is a pejorative, but they are an ancient culture | |
| | | The production of local products completely solves the | Traditional farming means that modern farming methods are not used. | Younger consumers are willing to pay more for vegetables | "Consumers would like to see the quality of local products | The peasant way of life is not at all attractive for people today. | | |
| | | The local food system is rather kept alive by social cohesion and | The survival of small farmers is not linked to tourism. | There is no evidence that local products are healthier than those | The most effective way of selling local products is through home | "The market and the various forms of agricultural subsidies mean | | |
| | | | Selling local products online undermines direct human contact. | "In Romania, the development of short supply chains is not a conscious | "Most local products meet the requirements for organic | | | |
| | | | | "Monthly farmers' fairs cannot be considered as a civil | | | | |

### Legend

☐ Distinguishing statement at P< 0.05

▨ Distinguishing statement at P< 0.01

► z-Score for the statement is higher than in all other factors

◄ z-Score for the statement is lower than in all other factors

*Source:* Authors' calculations

**Q Triangle generated for factor 2**

## Composite Q sort for Factor 2

| -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|
| "Most of the local food products are sold 'black', bypassing | "Small farmers are not managing efficiently, so there is no | "The term 'peasants' is a pejorative, but they are an ancient culture | "The so-called 'black market' is often a manifestation of positive | "The survival of small-scale producers is the key to preserving | Most small producers have neither agricultural nor economic | "In Romania, there is no need for local products, because | Traditional farming means that modern farming methods are not used. | A large proportion of consumers prefer to buy local food |
| The quality and origin of products sold on social media (Facebook) is | "Consumers would like to see the quality of local products | "The millennial generation (born between 1981 and 1996) is looking for | "In Szeklerland, small farms are the result not only of poverty | "In Romania, the short food distribution chain existed before the | "Most local products meet the requirements for organic | The introduction of school lunches would solve the problem of | The production of local products completely solves the | "Small farmers are not aware of the opportunities offered by food |
| | The younger generation is not interested in local products and | There is no evidence that local products are healthier than those | Younger consumers are willing to pay more for vegetables | Consumer food choices are constantly changing. | Local people are proud of the traditional products they consume. | The survival of small farmers is not linked to tourism. | The local product mark is also a guarantee of good product | |
| | | Farmers' markets not only provide healthy and fresh food. | "Monthly farmers' fairs cannot be considered as a civil | The local food system is rather kept alive by social cohesion and | It is scientifically proven that the quality and quantity of | The most effective way of selling local products is through home | | |
| | | "Local produce is more expensive not because of high production | "NGO initiatives to run local food systems have a rigt to exist, | There is a very limited supply of products on farmers' markets. | "With a short food chain, less food goes to waste." | Selling local products online undermines direct human contact. | | |
| | | | "In Romania, the creation of local food supply systems is justified by | "In Romania, the development of short supply chains is not a conscious | "The market and the various forms of agricultural subsidies mean | | | |
| | | | | The peasant way of life is not at all attractive for people today. | | | | |

### Legend

☐ Distinguishing statement at P< 0.05

▨ Distinguishing statement at P< 0.01

► z-Score for the statement is higher than in all other factors

◄ z-Score for the statement is lower than in all other factors

*Source:* Authors' calculations

**Q Triangle generated for factor 3**

## Composite Q sort for Factor 3

| -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|
| "The so-called 'black market' is often a manifestation of positive | "Small farmers are not managing efficiently, so there is no | "Monthly farmers' fairs cannot be considered as a civil | There is no evidence that local products are healthier than those | "The survival of small-scale producers is the key to preserving | "With a short food chain, less food goes to waste." | Local people are proud of the traditional products they consume. | The peasant way of life is not at all attractive for people today. | The survival of small farmers is not linked to tourism. |
| "In Romania, there is no need for local products, because | The production of local products completely solves the | The introduction of school lunches would solve the problem of | The local product mark is also a guarantee of good product | The younger generation is not interested in local products and | The local food system is rather kept alive by social cohesion and | "In Romania, the creation of local food supply systems is justified by | "The term 'peasants' is a pejorative, but they are an ancient culture | Consumer food choices are constantly changing. |
| | Traditional farming means that modern farming methods are not used. | "Most local products meet the requirements for organic | A large proportion of consumers prefer to buy local food | Farmers' markets not only provide healthy and fresh food. | "NGO initiatives to run local food systems have a rigt to exist, | There is a very limited supply of products on farmers' markets. | The quality and origin of products sold on social media (Facebook) is | |
| | | "In Szeklerland, small farms are the result not only of poverty | Selling local products online undermines direct human contact. | "The millennial generation (born between 1981 and 1996) is looking for | Younger consumers are willing to pay more for vegetables. | Most small producers have neither agricultural nor economic | | |
| | | "In Romania, the development of short supply chains is not a conscious | "Most of the local food products are sold 'black', bypassing | "In Romania, the short food distribution chain existed before the | "Local produce is more expensive not because of high production | "Consumers would like to see the quality of local products | | |
| | | | "Small farmers are not aware of the opportunities offered by food | The most effective way of selling local products is through home | It is scientifically proven that the quality and quantity of | | | |
| | | | | "The market and the various forms of agricultural subsidies mean | | | | |

## Legend

☐ Distinguishing statement at P< 0.05
▨ Distinguishing statement at P< 0.01
► z-Score for the statement is higher than in all other factors
◄ z-Score for the statement is lower than in all other factors

*Source:* Authors' calculations

**Q triangle generated for factor 4**

## Composite Q sort for Factor 4

| -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|
| The survival of small farmers is not linked to tourism. | The quality and origin of products sold on social media (Facebook) is | Most small producers have neither agricultural nor economic | There is no evidence that local products are healthier than those | Local people are proud of the traditional products they consume. | It is scientifically proven that the quality and quantity of | "Monthly farmers' fairs cannot be considered as a civil | "In Romania, the creation of local food supply systems is justified by | The peasant way of life is not at all attractive for people today. |
| The most effective way of selling local products is through home | "Small farmers are not managing efficiently, so there is no | Traditional farming means that modern farming methods are not used. | "Local produce is more expensive not because of high production | Consumer food choices are constantly changing. | "NGO initiatives to run local food systems have a rigt to exist, | "The market and the various forms of agricultural subsidies mean | "The term 'peasants' is a pejorative, but they are an ancient culture | "The survival of small-scale producers is the key to preserving |
| | "In Romania, there is no need for local products, because | The younger generation is not interested in local products and | "In Romania, the short food distribution chain existed before the | "With a short food chain, less food goes to waste." | "Most local products meet the requirements for organic | "Consumers would like to see the quality of local products | The production of local products completely solves the | |
| | | "Most of the local food products are sold 'black', bypassing | "Small farmers are not aware of the opportunities offered by food | A large proportion of consumers prefer to buy local food | "The millennial generation (born between 1981 and 1996) is looking for | "In Romania, the development of short supply chains is not a conscious | | |
| | | "In Szeklerland, small farms are the result not only of poverty | The local food system is rather kept alive by social cohesion and | The local product mark is also a guarantee of good product | Farmers' markets not only provide healthy and fresh food. | Selling local products online undermines direct human contact. | | |
| | | | "The so-called 'black market' is often a manifestation of positive | Younger consumers are willing to pay more for vegetables | There is a very limited supply of products on farmers' markets. | | | |
| | | | | The introduction of school lunches would solve the problem of | | | | |

## Legend

☐ Distinguishing statement at P< 0.05
▨ Distinguishing statement at P< 0.01
► z-Score for the statement is higher than in all other factors
◄ z-Score for the statement is lower than in all other factors

*Source:* Authors' calculations

**Q triangle generated for factor 5**

## Composite Q sort for Factor 5

| -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|
| There is no evidence that local products are healthier than those | The local food system is rather kept alive by social cohesion and | Most small producers have neither agricultural nor economic | Younger consumers are willing to pay more for vegetables | "In Romania, the creation of local food supply systems is justified by | "Most of the local food products are sold 'black', bypassing | Farmers' markets not only provide healthy and fresh food. | The introduction of school lunches would solve the problem of | "Consumers would like to see the quality of local products |
| "In Romania, there is no need for local products, because | A large proportion of consumers prefer to buy local food | Traditional farming means that modern farming methods are not used. | Selling local products online undermines direct human contact. | The production of local products completely solves the | "The so-called 'black market' is often a manifestation of positive | The quality and origin of products sold on social media (Facebook) is | "The term 'peasants' is a pejorative, but they are an ancient culture | It is scientifically proven that the quality and quantity of |
| | There is a very limited supply of products on farmers' markets. | The most effective way of selling local products is through home | "The millennial generation (born between 1981 and 1996) is looking for | Local people are proud of the traditional products they consume. | "In Szeklerland, small farms are the result not only of poverty | "With a short food chain, less food goes to waste." | "The survival of small-scale producers is the key to preserving | |
| | | "Small farmers are not aware of the opportunities offered by food | "Most local products meet the requirements for organic | The peasant way of life is not at all attractive for people today. | The survival of small farmers is not linked to tourism. | Consumer food choices are constantly changing. | | |
| | | "In Romania, the development of short supply chains is not a conscious | "Small farmers are not managing efficiently, so there is no | "In Romania, the short food distribution chain existed before the | "The market and the various forms of agricultural subsidies mean | "Local produce is more expensive not because of high production | | |
| | | | "Monthly farmers' fairs cannot be considered as a civil | The local product mark is also a guarantee of good product | "NGO initiatives to run local food systems have a rigt to exist, | | | |
| | | | | The younger generation is not interested in local products and | | | | |

### Legend

☐ Distinguishing statement at P< 0.05

▨ Distinguishing statement at P< 0.01

► z-Score for the statement is higher than in all other factors

◄ z-Score for the statement is lower than in all other factors

*Source:* Authors' calculations

**Appendix 4: The distinctive statements**

| Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 |
|---|---|---|---|---|
| With a short food chain, less food goes to waste. | Most of the local food products are sold 'black', bypassing taxation and food safety controls. | The survival of small farmers is not linked to tourism. | The market and the various forms of agricultural subsidies mean that nobody is independent. Every small producer adapts to them, losing his originality and identity of work. | The introduction of school lunches would solve the problem of selling local food. |
| In Szeklerland, small farms are the result not only of poverty but also of landscape. | The younger generation is not interested in local products and advertising promoting short supply chains. | Consumer food choices are constantly changing. | The production of local products completely solves the problem of food self-sufficiency in the region. | The survival of small farmers is not linked to tourism. |
| Most of the local food products are sold 'black', bypassing taxation and food safety controls. | Small farmers are not managing efficiently, so there is no reason for them to survive. | Most small producers have neither agricultural nor economic skills. This is a major obstacle to the development of short supply chains. | Selling local products online undermines direct human contact. | (-) The production of local products completely solves the problem of food self-sufficiency in the region. |
| (-) The millennial generation (born between 1981 and 1996) is looking for products offering the best value for money, whether or not they are produced in Romania. | There is no evidence that local products are healthier than those produced under controlled conditions in industrial agriculture. | | (-) The most effective way of selling local products is through home delivery in boxes. | (-) NGO initiatives to run local food systems have a right to exist, but they cannot survive in the long term. |
| (-) In Romania, the creation of local food supply systems is justified by the very large number of small farms. | Local produce is more expensive not because of high production costs, but because producers, due to their limited economic knowledge, misprice it. | | | (-) There is a very limited supply of products on farmers' markets. |
| (-) Local produce is more expensive not because of high production costs, | (-) The local product mark is also a guarantee of good product quality. | | | (-) There is no evidence that local products are healthier |

| Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 |
|---|---|---|---|---|
| but because producers, due to their limited economic knowledge, misprice it. | | | | than those produced under controlled conditions in industrial agriculture. |
| | (-) Small farmers are not aware of the opportunities offered by food marketing and modern technologies, which makes local food expensive. | | | |
| | (-) A large proportion of consumers prefer to buy local food because they know that they are helping to develop the regional economy. | | | |

*Source:* Authors' calculations

## Appendix 5: Correlation Matrix (correlations between Q sorts)

| P* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 100 | 41 | 26 | 31 | 64 | 46 | 10 | 18 | 13 | 12 | 12 | 5 | 15 | 17 | -1 | 38 | 47 | 14 | 12 | 40 | 34 | 16 | 16 | 22 | 49 | 6 | 46 | 31 | 9 | 19 | 25 | 24 | 35 | 23 | -5 |
| 2 | 41 | 100 | 44 | 49 | 42 | 50 | 22 | 38 | 27 | 29 | 35 | 8 | 28 | 9 | 34 | 11 | 45 | 10 | 30 | 45 | 29 | 18 | 18 | 11 | 41 | 45 | 25 | 26 | 10 | 18 | 21 | 32 | 34 | 26 | -2 |
| 3 | 26 | 44 | 100 | 20 | 38 | 44 | 27 | 35 | 31 | 20 | 35 | -4 | 22 | 24 | 2 | 38 | 35 | 35 | -1 | 39 | 29 | 20 | 20 | 24 | 37 | 26 | 19 | 41 | 11 | 18 | 21 | 34 | 28 | 41 | -16 |
| 4 | 31 | 49 | 20 | 100 | 22 | 37 | 41 | 35 | 7 | 14 | -9 | 4 | 3 | 7 | 49 | 38 | -2 | 19 | 25 | 17 | 7 | -8 | -7 | 7 | 37 | 26 | 11 | 8 | 41 | -3 | 7 | -6 | 23 | 6 | 4 |
| 5 | 64 | 42 | 38 | 22 | 100 | 47 | 47 | 33 | 44 | 41 | 35 | 24 | 30 | 40 | 4 | 51 | 61 | 42 | 18 | 54 | 32 | 56 | 40 | 36 | 66 | 14 | 56 | 41 | 28 | 32 | 40 | 46 | 23 | 51 | -5 |
| 6 | 46 | 50 | 44 | 37 | 47 | 100 | 35 | 36 | 49 | 18 | 24 | 6 | 53 | 51 | 11 | 42 | 44 | 30 | 11 | 58 | 28 | 56 | 56 | 48 | 45 | 51 | 41 | 52 | 25 | 34 | 20 | 32 | 40 | 35 | -18 |
| 7 | 10 | 22 | 27 | 41 | 47 | 35 | 100 | 36 | 46 | 35 | 24 | 39 | 15 | 21 | 9 | 32 | 53 | 11 | 1 | 54 | 17 | 56 | 56 | 24 | 48 | 51 | 33 | 56 | 44 | 44 | 39 | 59 | 36 | 35 | -5 |
| 8 | 18 | 38 | 35 | 35 | 33 | 36 | 36 | 100 | 46 | 54 | 4 | -4 | 15 | 21 | -9 | 52 | 52 | 41 | 45 | 54 | 20 | 25 | 63 | 38 | 50 | 36 | 44 | 48 | 29 | 25 | 34 | 53 | 51 | 39 | -38 |
| 9 | 13 | 27 | 31 | 7 | 44 | 49 | 46 | 46 | 100 | 16 | 29 | 6 | 50 | 55 | -16 | 45 | 61 | 35 | 15 | 61 | 32 | 40 | 24 | 25 | 58 | 63 | 25 | 50 | 45 | 55 | 41 | 53 | 46 | 53 | -28 |
| 10 | 12 | 29 | 20 | 14 | 41 | 18 | 35 | 54 | 16 | 100 | 32 | 20 | 48 | 30 | 24 | 17 | 22 | 35 | 53 | 16 | 29 | 28 | 18 | 58 | 20 | 36 | 44 | 48 | 25 | 19 | 19 | 49 | 19 | 19 | -12 |
| 11 | 12 | 35 | 35 | -9 | 35 | 24 | 24 | 4 | 29 | 32 | 100 | 20 | 14 | 11 | 4 | 19 | 25 | 10 | 26 | 18 | 23 | 28 | 12 | 11 | 15 | 35 | 45 | 71 | 44 | -11 | 43 | 49 | 16 | 34 | -3 |
| 12 | 5 | 8 | -4 | 4 | 24 | 6 | 39 | -4 | 6 | 20 | 20 | 100 | 48 | 35 | 26 | -13 | -3 | -15 | 36 | -5 | -19 | 12 | 59 | 59 | 11 | 35 | 15 | 62 | 56 | -1 | 22 | 2 | 19 | 25 | 25 |
| 13 | 15 | 28 | 22 | 3 | 30 | 53 | 15 | 15 | 50 | 48 | 14 | 48 | 100 | 35 | -9 | 20 | 56 | 36 | 25 | 54 | 25 | 50 | 45 | 58 | 20 | 36 | 23 | 16 | -1 | 44 | 39 | 55 | 39 | 39 | 8 |
| 14 | 17 | 9 | 24 | 7 | 40 | 51 | 21 | 21 | 55 | 30 | 11 | 14 | 35 | 100 | -9 | 52 | 52 | 41 | 19 | 54 | 54 | 20 | 51 | 58 | 21 | 44 | 58 | 48 | 29 | 25 | 36 | 36 | 51 | 23 | -9 |
| 15 | -1 | 34 | 2 | 49 | 4 | 11 | 9 | -9 | -16 | 24 | 4 | 26 | -9 | -9 | 100 | -32 | -25 | -14 | 24 | -8 | -8 | 1 | 1 | -10 | 27 | 27 | -24 | -23 | -8 | 9 | -8 | -7 | -10 | -5 | 9 |
| 16 | 38 | 11 | 38 | 38 | 51 | 42 | 32 | 52 | 45 | 17 | 19 | -13 | 20 | 52 | -32 | 100 | 58 | 33 | -1 | 58 | 45 | 54 | 23 | 59 | 34 | 40 | 19 | 39 | 44 | -1 | 28 | 49 | 52 | 38 | -17 |
| 17 | 47 | 45 | 35 | -2 | 61 | 44 | 53 | 52 | 61 | 22 | 25 | -3 | 56 | 52 | -25 | 58 | 100 | 50 | 9 | 68 | 19 | 51 | 54 | 41 | 42 | 17 | 68 | 62 | 56 | 46 | 64 | 55 | 40 | 36 | -1 |
| 18 | 14 | 10 | 35 | 19 | 42 | 30 | 11 | 41 | 35 | 35 | 10 | -15 | 36 | 41 | -14 | 33 | 50 | 100 | 1 | 36 | 23 | 56 | 51 | 28 | 50 | 36 | 49 | 62 | 48 | -1 | 37 | 47 | -2 | 41 | -5 |
| 19 | 12 | 30 | -1 | 25 | 18 | 11 | 1 | 45 | 15 | 53 | 26 | 36 | 25 | 19 | 24 | -1 | 9 | 1 | 100 | 18 | 23 | 15 | 15 | 18 | 28 | 22 | 23 | 16 | -1 | 33 | 37 | 22 | 39 | -1 | -3 |
| 20 | 40 | 45 | 39 | 17 | 54 | 58 | 54 | 54 | 61 | 16 | 18 | -5 | 54 | 54 | -8 | 58 | 68 | 36 | 18 | 100 | 23 | 50 | 50 | 43 | 48 | 50 | 58 | 48 | 33 | 29 | 50 | 54 | 48 | 56 | -20 |
| 21 | 34 | 29 | 29 | 7 | 32 | 28 | 17 | 20 | 32 | 29 | 23 | -19 | 25 | 20 | -8 | 45 | 19 | 23 | 19 | 23 | 100 | 27 | 27 | 18 | 18 | 23 | 11 | 16 | 34 | 41 | 41 | 31 | 12 | 11 | 6 |
| 22 | 16 | 18 | 20 | -8 | 56 | 56 | 56 | 25 | 40 | 28 | 28 | 12 | 50 | 20 | 1 | 54 | 51 | 56 | 15 | 50 | 27 | 100 | 100 | 59 | 28 | 19 | 52 | 71 | 51 | 56 | 35 | 45 | 16 | 51 | 18 |
| 23 | 16 | 18 | 20 | -7 | 40 | 56 | 56 | 25 | 24 | 18 | 12 | 59 | 45 | 51 | 1 | 23 | 54 | 51 | 15 | 50 | 27 | 100 | 100 | 34 | 41 | 11 | 52 | 62 | 50 | 26 | 35 | 22 | 22 | 51 | 18 |
| 24 | 22 | 11 | 24 | 7 | 36 | 48 | 24 | 63 | 25 | 58 | 11 | 59 | 58 | 58 | -10 | 59 | 41 | 28 | 18 | 43 | 18 | 59 | 34 | 100 | 21 | 11 | 44 | 28 | 50 | 36 | 34 | 32 | 40 | 41 | -16 |
| 25 | 49 | 41 | 37 | 37 | 66 | 45 | 48 | 38 | 58 | 20 | 15 | 11 | 20 | 21 | 27 | 34 | 42 | 50 | 28 | 48 | 18 | 28 | 41 | 21 | 100 | 4 | 43 | 30 | 26 | 36 | 34 | 35 | 40 | 34 | -1 |
| 26 | 6 | 45 | 26 | 26 | 14 | 51 | 51 | 50 | 63 | 36 | 35 | 35 | 36 | 44 | 27 | 40 | 17 | 36 | 22 | 50 | 23 | 19 | 11 | 11 | 4 | 100 | 36 | 51 | 33 | 15 | 37 | 45 | 34 | 32 | -5 |
| 27 | 46 | 25 | 19 | 11 | 56 | 41 | 33 | 36 | 25 | 44 | 45 | 15 | 23 | 58 | -24 | 19 | 68 | 49 | 23 | 58 | 11 | 52 | 52 | 44 | 43 | 36 | 100 | 51 | 56 | 26 | 37 | 48 | 49 | 49 | 9 |
| 28 | 31 | 26 | 41 | 8 | 41 | 52 | 56 | 48 | 50 | 48 | 71 | 62 | 16 | 48 | -23 | 39 | 62 | 62 | 16 | 48 | 16 | 71 | 62 | 28 | 30 | 51 | 51 | 100 | 51 | 36 | 64 | 52 | 54 | 34 | 9 |
| 29 | 9 | 10 | 11 | 41 | 28 | 25 | 44 | 29 | 45 | 25 | 44 | 56 | -1 | 29 | -8 | 44 | 56 | 48 | -1 | 33 | 34 | 51 | 50 | 50 | 26 | 33 | 56 | 51 | 100 | 26 | 33 | 49 | 42 | 28 | -11 |
| 30 | 19 | 18 | 21 | -3 | 32 | 34 | 44 | 25 | 55 | 19 | -11 | -1 | 44 | 25 | 9 | -1 | 46 | -1 | 33 | 29 | 34 | 56 | 26 | 36 | 36 | 15 | 26 | 36 | 26 | 100 | 37 | 26 | 31 | 31 | -20 |
| 31 | 25 | 21 | 7 | 7 | 40 | 20 | 39 | 34 | 41 | 19 | 43 | 22 | 39 | 36 | -8 | 28 | 64 | 37 | 37 | 50 | 41 | 35 | 35 | 34 | 34 | 37 | 56 | 64 | 33 | 37 | 100 | 49 | 37 | 35 | -7 |
| 32 | 24 | 32 | 34 | -6 | 46 | 32 | 59 | 53 | 53 | 49 | 49 | 2 | 55 | 36 | -7 | 49 | 55 | 47 | 22 | 54 | 31 | 45 | 22 | 32 | 35 | 45 | 48 | 52 | 49 | 26 | 49 | 100 | 49 | 28 | -24 |
| 33 | 35 | 34 | 28 | 23 | 23 | 40 | 36 | 51 | 46 | 19 | 16 | 19 | 39 | 51 | -10 | 52 | 40 | -2 | 39 | 48 | 12 | 16 | 40 | 40 | 40 | 34 | 49 | 54 | 42 | 31 | 35 | 49 | 100 | 14 | -1 |
| 34 | 23 | 26 | 41 | 6 | 51 | 35 | 35 | 39 | 53 | 19 | 34 | 25 | 39 | 23 | -5 | 38 | 36 | 41 | -1 | 56 | 11 | 51 | 22 | 41 | 34 | 32 | 49 | 34 | 28 | 31 | 35 | 28 | 14 | 100 | 1 |
| 35 | -5 | -2 | -16 | 4 | -5 | -18 | -5 | -38 | -28 | -12 | -3 | 25 | 8 | -9 | 9 | -17 | -1 | -5 | -3 | -20 | 6 | 18 | 18 | -16 | -1 | -5 | 9 | 9 | -11 | -20 | -7 | -24 | -1 | 1 | 100 |

*Source: Authors' calculations*