Do Local Food Products Contribute to Sustainable Economic Development?

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Abstract: Local food production benefits sustainable regional development and should be considered as one the pillars of sustainable regional development strategies. Local food producers share a common heritage because of the cultural and historical ties in their regions, while consumers tend to value food products produced locally. The purpose of this article was to explore market participants' attitudes toward the impact of local food product attributes on sustainable regional development. The authors' findings on the main advantages and barriers to consumption of local food products have pointed out the complexity of the relationships between market participants (i.e., producers and consumers) and indicated that a deeper understanding is necessary for overall economic development. The problems of local food products in Serbia, in the context of sustainable regional development, have not been investigated so far, and for this reason, it is important to analyze the differences between consumer and producer attitudes to reduce this perceived gap in the literature. In this way, these insights can offer opportunities for strategic actions in regard to the local food product supply and consumption, with the aim of including different regional stakeholders.

Keywords: sustainable regional development; local food products; producers; perceptions

1. Introduction

In the Republic of Serbia, there is a growing interest in and increasing consumer demand for high-quality and healthy products. The intensification of local food products' (LFPs) production would contribute to halting biodiversity loss and improving ecosystems, and on the other hand, would help towards improving the economic positions of farmers, who form the basis of sustainable local development, and are directly related to the achievement of UNESCO's (United Nations Educational, Scientific and Cultural Organization) second, 12th, and 15th sustainable development goals [1]. The leading activity of the population in the Republic of Serbia, especially in rural areas, relies on agriculture and support for local development, which also represents the fight against poverty and hunger. However, the integration of agricultural production with the secondary and tertiary sectors is needed, which will ensure a higher degree of marketability of agri-food products. The role of agriculture in the development of society is significant [2], whether in terms of local development or sustainability of resources. The ultimate goal of enhancing LFPs' production should be the greater utilization of available natural resources [3], processing capacity increase, and improvement of the social position of the population. It is well known that every country has its own path and strategy for local development and that not every strategy is a guarantee for success, and therefore countries exhibit different degrees of economic development.

Unlike economically-developed countries where scientific research on local produce has been present for a relatively long time, in less developed countries or countries in transition, this concept is only beginning. In the Strategy of Agriculture and Rural Development of the Republic of Serbia for the period 2014–2024 [4], it is stated that the share of agriculture in total employment in the Republic of Serbia is very high and amounts to over 20%, with a high number of family farms using up to 2 ha of agricultural land (48.8% of the total). These farms account for about 8% of agricultural land. By moving the boundary of utilized land to a higher group (up to 5 ha), it appears that agricultural holdings of this size, although they make up 78% of the total, represent only 25.3% of the area. As Cvijanović and Ignjatijević [5] point out, the transition process has led to the creation of a monopoly on the agricultural market on one hand, and on the other, direct producers have not adapted to the new market order and have remained unorganized and unprotected. For significant improvements in production, small producers lack necessary capital, expertise, and modern equipment (since the value exceeds the financial capabilities of individual producers). It is for this reason that local food producers tend to produce the same products for years, in the same way, although they are not satisfied with the selling prices and earnings.

In recent years, consumers in the Republic of Serbia have shown an increased interest in value-added food products; the findings on the Serbian WTP (willingness to pay) for organic products show that consumers are willing to pay a premium price for organic products, up to 20% [6]. In light of the future development of the local food system in Serbia, it is important to identify and understand the determinants of consumer and producer behaviors in Serbia's local food system in relation to the general patterns identified already in the literature. This process requires detailed information on consumer and producer attitudes and their decision-making processes connected to the purchase and production of local food products. The perceptions and beliefs towards local food products from the point of view of consumers and producers in the Republic of Serbia have not been investigated so far. The inclusion of local food producers in the study is important, especially for countries in the early stages of local food system development. There are no previous surveys on local food systems relating consumers' and producers' data simultaneously. Therefore, the specific objectives of the current study were to: (1) Investigate the current perceptions of local food products in the Republic of Serbia; (2) determine if the perceptions of consumers and producers of local food products differ; and (3) analyze the perceived impact of local food product attributes on sustainable regional development. After the introduction, the conclusions of a number of authors, who have analyzed the various aspects of LFPs, have been presented. This segment of the paper represents a special contribution because it highlights the views and recommendations of authors of different economic, political, and cultural beliefs. As there is no previous research on local food systems in Serbia, the results obtained in this research may be of special interest to authors and researchers, members of the SME (Small and medium-sized enterprises) sector, educators and representatives of advisory services, and government bodies. In the following section, the authors present the methodology and the research results. Finally, the concluding observations summarize the research findings. In particular, we emphasize that our findings can serve as a starting point for the creation of further strategies for the development of the LFPs sector.

2. Literature Overview

Early research on the consumption of local products emerged after the development of farmers' markets amid growing consumer concerns about food safety and the use of environmentally-friendly products [7–9]. In the United States, Canada, and Europe, smaller-scale localized production has become a part of community and economic development strategies [10,11]. On the other hand, local products have been associated with a social component of sustainable production and community economic development [12]. The term "local" has been associated with many interpretations, encompassing attributes commonly ascribed to locally-grown produce (such as freshness, environmental sustainability, and support of the local economy). However, Born and Purcell [13] have speculated that the "local trap", i.e., the tendency of food activists and researchers to assume that locally-sourced produce is

desirable (for reasons of ecological sustainability, social justice, democracy, better nutrition, and food security, freshness, and quality), and as such should be preferred a priori to larger scales of production, may pose significant risks to food systems research [14]. Karner's [15] findings on local food systems in five countries (Austria, England, Hungary, France, and Poland) have shown that an alternative local food network represents an emerging European sector. The term "local food" can be linked to a concept of natural goods or services produced or provided by different enterprises in rural areas with an established socioeconomic identity [16]. La Trobe [17] points out that in the UK, local food products are regarded as produced and sold within a 30 to 40-mile radius of the market, or more if the market is situated in a large urban area (such as the Islington market in London which has a 100-mile radius). On the other hand, the consumers show great variation in the distance they consider to be local and this distance may differ in case of fresh and processed products [18]. The findings of a survey of 120 food consumers, trying to define the term "local" food on the basis of several meanings (such as distance, physical accessibility, and "specialty" or "uniqueness" criteria) have shown that the most common meaning for the term "local" food was "foods grown locally" [19].

From a demand-side viewpoint, Feldmann and Hamm [20] have analyzed 73 research studies on local food (coming mostly from the USA, UK, Germany, and Italy) revealing some common characteristics of local food shoppers such as being older and wealthier, living in rural areas with the predominant expectation that the local food was tastier and of higher quality and not perceived as expensive. Mirosa and Lawson's [21] findings show that behavior of those consumers who express a strong intention to purchase local food is strongly related to the types of food they eat, how they cook their food, and where and when they eat it. Hu, Batte, Woods, and Ernst's [22] findings on what is local and how important the local production is for different food categories reveal that female consumers have higher demands that the food should be produced nearby, while higher income households and more highly educated consumers are less demanding of shorter food traveling distance. Older consumers, married and with children, also more often tend to value more local production.

Brown's [23] findings on Missouri household interest in purchasing locally produced foods show that quality and freshness followed by price influenced the purchase, although the majority of consumers were not willing to pay a premium for locally grown food products. Carpio and Isengildina-Massa's [24] findings on consumers' willingness to pay for locally branded products show that if food products were equally priced, the majority of consumers (95%) would choose state-grown produce over out-of-state produce. The consumers who purchase local products for the reason of support of local farmers have a higher willingness to pay a premium. Consumers who use direct channels (farmers markets, community supported agriculture outlets, and roadside stands) reported a significantly higher WTP for local produce [25]. Grebitus, Lusk, and Nayga's [26] findings show that that the belief to support the local economy when buying food that traveled fewer miles affects positively not only the consumers' WTP but also the consumers' perceptions that fresh local food has superior attributes compared to food that traveled more miles. Gracia, De Magistris, and Nayga [27], by simultaneous experimental auction, elicited consumers' WTP for a local lamb meat and tackled the issue of social influences ("the importance consumers attach to the purchase of food products produced in the region where they reside using traditional and typical production methods" p. 3) and the effect of consumers' gender on WTP for local food products confirming their hypothesis that social influence indeed affects WTP values and that women get an extra utility from the satisfaction of buying locally produced lamb meat. Nganje et al.'s [7] findings show that local produce bearing the Arizona Grown label had a higher WTP than local produce labeled USDA-certified (U.S. Department of agriculture). In their research on whether local and organic products are complements or substitutes, Gracia, Barreiro-Hurlé, and López-Galán [28] show that consumers are willing to pay a positive premium price for an enhanced method of production as well as for the proximity of production.

Research studies in today's local food markets have tried to reveal not only a consumer behavior perspective on local food but also the perceptions of producers who are selling local food products through established direct marketing channels [29]. Many researchers accredit the success of local

food to determining adequate channels of direct marketing such as farmers markets (FMs). Gregoire, Arendt, and Strohbehn's [30] findings show that local producers sold vegetables more frequently than meat items. The findings of Gao, Swisher, and Zhao [31] show that the most important reasons why consumers shop at farmers markets are freshness and locality of production, the availability of organically grown produce, and knowing the farmers. The findings of Feenstra, Lewis, Hinrichs, Gillespie, and Hilchey [32] point out that the majority of vendors that are small-scale enterprises with less market and business experience tend to sell at markets closer to their farms.

Veidal and Falten's [33] findings reveal that most of the farm entrepreneurs (the majority of them being female) used at least two other direct marketing channels to distribute local products besides FMs, such as their own farm shop or farm gate sales, restaurant and catering outlets, while their main motives for selling at FMs were direct feedback from consumers and the enjoyment of selling directly to consumers. Conner, Colasanti, Ross, and Smalley's [34] findings show that the primary motives for shopping at farmers markets were food quality, safety from foodborne illness, and the ability to support local farmers, while the least important motives were the availability of pesticide-free or hormone-free foods. The findings of the study of Schneider and Francis [35] on consumers' and farmers' opinions have revealed that Nebraska farmer interest in producing for local markets was low, but on the other hand the consumers showed high level of interest in purchasing food from farmers' markets, local grocery stores, local restaurants, and directly from farms, with a willingness to pay a price premium for local foods. The most important factors for purchasing food brands or products was quality and taste followed by nutritious properties/ healthy attributes, price, and environmentally friendly production. Support a local family farm, Nebraska grown, locally produced were also perceived as important factors.

The findings of Hunt [36] on farmers market consumer and vendor data simultaneously, have revealed that female postsecondary educational level consumers with a higher income shop at farmer market. The findings of Hardesty [37] point out that the institutions will rather buy local products if they can bear the higher transaction costs. Gregoire and Strohbehn's [38] findings show that one-third of schools purchase food directly from local producers (in Minnesota, Iowa, Nebraska, and Kansas; and Slovakia [39,40]), mainly as a benefit to maintain good public relations, to support the local economy, to buy fresh foods in smaller quantities, to be familiar with the product sources, and food safety.

The findings of O'Hara and Pirog [41] accentuate the need for establishing better research methods through improving data collection, performing studies on larger geographic scales that also include the recent changes in diet and quantify other economic attributes of local food systems (besides the number of jobs). The findings of Abatekassa and Peterson [42] reveal that local independent retailers (compared to wholesalers and supermarket chains) still tend to consider local foods as a potential source of competitive advantage and for this reason they have better relationships with selected local producers than the large chains. The findings of Matson and Thayer [43] point to the emergence of food hubs, which could be very useful instruments for more efficient local food supply chains with a need for further research on their characteristics and economic impact on food systems.

3. Materials and Methods

The research in this study covered the producers and consumers of local food products (LFPs) in the country, where there are large differences in educational level, purchasing power, and consumer preferences. The questions that arise are: What is the current perception of local food in the Republic of Serbia? Is there is a difference in the perception of consumers and producers of local food? What is the impact of local food products on sustainable economic development? Drawing on previous research from Memery, Angell, Megicks, and Lindgreen [44] and Megicks, Memery, and Angell [45], and suggestions from representatives of the Bačka Development Agency and the Institute of Food Technology in Novi Sad (due to involvement in similar research), the perceptions of two groups of respondents were investigated. By comparing the similarities, i.e., differences in the perception of LFPs, it is possible to examine their views, draw conclusions and recommendations which can be used for

the purpose of local development, overcoming developmental inequality, increasing employment—in short, economic development. A lot of studies have been focused on the analysis of production, on volumes, costs, i.e., quantitative indicators and the analysis conducted so far in Serbia have neglected the perceptions of individuals. Considering that the perception and beliefs on local food products in Serbia have not been researched so far and that in recent years consumers in Serbia have shown an increased interest in value-added food products [6], the subject of research is to provide new insights into producers' and consumers' views on LFPs and their impact on sustainable economic development.

The research was carried out on the territory of Republic of Serbia in several cities and villages, from March 2019 to July 2019. The total number of LFPs consumers investigated was 1000 and the total number of LFPs producers was 500. Of the distributed questionnaires, 834 LFPs consumer questionnaires were returned complete (83.4% response rate). As for LFPs producers, 312 distributed questionnaires were returned complete (62.4%). The first group of questions included data on the socio-demographic characteristics of consumers (gender, age, education). The second group of questions consists of 30 claims, directly or indirectly related to local food product attributes rated on a five-point interval scale (1 is the lowest grade and 5 is the highest). The questions were modeled on a survey by Memery et al. [44] and Megicks et al. [45]. The survey was anonymous, the respondents were selected according to the "snowball" principle, and the distribution and completion of the survey was conducted electronically. The respondents /producers have been selected as follows: The Development Agency Bačka and the Institute from Novi Sad have at their disposal a database of LFPs producers. The questionnaire, or link of the questionnaire, has been sent to their email addresses asking them to forward it to the key informants thus ensuring a chain of possible other producers to be included in the study. The authors believe that the technique has been adequate to find as many respondents as possible, especially since the respondents have not been randomly selected from the whole population, but have been selected based on their professional orientation and desire to participate in the research [46].

On the other hand, the snowball method as a random sampling technique has been applied in regard to the LFPs consumers. The researchers, after having identified the initial seed informants within the researchers' professional and personal network, have asked the potential respondents to forward the link to their contacts [47,48]. Based on the experience of other researchers, the snowball method has proven particularly useful in exploring under-researched topics—such as LFPs consumer preferences, where respondents are difficult to locate and when the knowledge and awareness on the product is not sufficiently explored [49,50]. Data processing was performed using the SPSS program for statistical data processing. Descriptive statistics, factor analysis, and standard multiple regression were used to analyze the phenomena in detail. The purpose of our research problem was to find an equation that best predicts the dependent variable as a linear function of the independent variables therefore the multiple regression was applied [51–54].

4. Results

Descriptive statistics show that of the 834 respondents the majority of LFPs consumers were female (58.27%), while in the sample of LFPs producers the majority of them were male producers (52.6%). Female consumers were more willing to participate in the research and were more interested in providing responses on their perceptions and beliefs toward the local food products they were buying. The average age of the consumers is in the age group of 21–40 years old (63.4%), while in the sample of producers the average age belongs to the group of 41–50 and 51–60 years old. The majority of consumers and producers have a high school diploma (Table 1).

Table 1. Socio-demographic characteristics of the sample.

		Consumer (*n* = 834)	**Producer (*n* = 312)**
Gender (%)	Men	41.73	52.6
	Women	58.27	47.4
Age (%)	21–30	40.05	8.33
	31–40	23.38	8.33
	41–50	16.43	33.33
	51–60	8.75	25.00
	<21	7.07	0.00
	>60	4.35	25.00
Education (%)	High School Diploma	38.25	50.00
	Higher Educational Diploma	26.14	4.17
	College Diploma	23.62	29.17
	Post-Graduate Qualification	8.87	12.50

Source: Author's calculation.

For the consumer sample the mean score for 30 aspects ranged from 3.05 to 4.41. At the top of the list are aspects relating mainly to LFP attributes: Good taste (4.41, standard deviation—SD 0.815), healthy (4.35, SD 0.884), good quality (4.15, SD 0.884), good appearance (4.00, SD 0.941), image (3.92, SD 1.02), followed by promotion (3.63, SD 1.04), and packaging (3.53, SD 1.077). Although the perceived LFPs' availability on the market mean score was slightly above the mid-point score of 3 (3.59, SD 1.026), the consumers are of the opinion that LFPs do prevent the disappearance of traditional foods (4.13, SD 1.02), further promote gastronomic culture (4.10, SD 0.939), and contribute to the preservation of local production techniques (4.09, SD 0.933). The consumers are of the opinion that LFPs contribute to the promotion of local communities (4.03, SD 1.015), protect the diversity of tastes (4.09, SD 0.94), and increase public interest in local methods of production (3.97, SD 1.023). The consumers are of the opinion that the state encourages LFPs production (4.03, SD 1,016), but not enough, that is, that the state does not have a defined LFPs technological process (3.41, SD 1.144), and that direct sales to some degree enable producers to avoid paying taxes (3.52, SD 1.182). The results indicate that the consumers are of the opinion that not all producers have a complete LFPs production process (3.94, SD 0.994), and that LFPs are not subject to the same phytosanitary control as other types of conventional products (3.51, SD. 1.045). LFPs are perceived as rather expensive (3.74, SD 0.887), not stored in an adequate manner (3.60, SD 1.027), which all together has a limiting effect on the perception of quality, that is, consumers are of the opinion that not all LFPs have a quality guarantee (3.70, SD 0.968). The results indicate that direct contact with producers is not very important to consumers (3.96, SD 1.119), and that there is no clear view regarding the difference in quality and price between domestic and imported LFPs (3.05, SD 1.002).

For the producer sample the mean score for 30 aspects ranged from 2.00 (imported LFPs are of better quality than the domestic LFPs) to 4.68 (producers are of opinion that LFPs contribute to the promotion of gastronomic culture). At the top of the list are aspects relating to LFPs' promotion of gastronomic culture (4.68, SD 0.695) and attributes such as good taste (4.51, SD 0.826), healthy (4. 63, SD 808), good quality (4.54, SD 0.623), good appearance (4.42 SD 0.863), image (4.08, SD 0.863). They are perceived by producers as not expensive (3.39, SD 0.986). The producers are of the opinion that individual LFPs are not adequately stored (3.00, SD 0.227) and that packaging (3.50, SD 0.959) and promotion (2.88, SD 1.203) of LFPs can be improved. The results of the research indicate a high level of awareness of producers on the importance of LFPs: For the protection of taste diversity (4.54, SD 0.866), for the prevention of the disappearance of local foods (4.42, SD 0.863), for the promotion of

consumption of LFPs (4.38, SD 0.906), for the promotion of local communities (4.32, SD 1.004), for the preservation of local production techniques (4.17, SD 0.944), and for the public interest in local methods of production (4.00 SD 1.26). Thus, the respondents considered their LFPs to be of good quality, but their mean scores on the LFPs institutional framework were rather low: Not all LFPs have a quality guarantee (3.38, SD 0.973), implemented phytosanitary controls (3.29, SD 1.209), and defined local production technological process (3.09, SD 1.296). Producers are of the opinion that there is not enough systematic support from the state (4.00, SD 1.446). From the producers' point of view imported LFPs are not safer (2.08, SD 1.354), cheaper (2.04, SD 1.062), or of better quality than domestic LFPs (2.00 SD 1.26). The domestic LFPs' market availability is scarce (2.42, SD 1.354) and their placement on the market is rather difficult (2.42, SD 1.224). It is interesting to conclude that producers and consumers have the same attitude about mutual contact—they think that it is not significant, and that producers are not interested in direct contact with buyers of their products (resellers/intermediaries or directly with consumers).

When the mean scores are compared between both stakeholder groups (Figure 1), the producers evaluated more positively the quality, price, and safety of the domestic LFPs in regard to imported LFPs. On the other hand, the consumers evaluated more positively the current LFPs' placement on the market and LFPs' availability, so we can conclude that consumers are currently satisfied with the LFPs' availability on the market. The producers' mean scores are higher with regard to the following statements: LFPs promote gastronomic culture; LFPs protect the variety of local tastes; LFPs promote the consumption of local products; therefore we can conclude that producers tend to value more their contribution to support the local community. The producers' mean scores of LFPs appearance, quality, image, and health attributes are slightly higher than the consumers' which reflects the need for further promotion of these products and their local production process to diminish the perceptual gap.
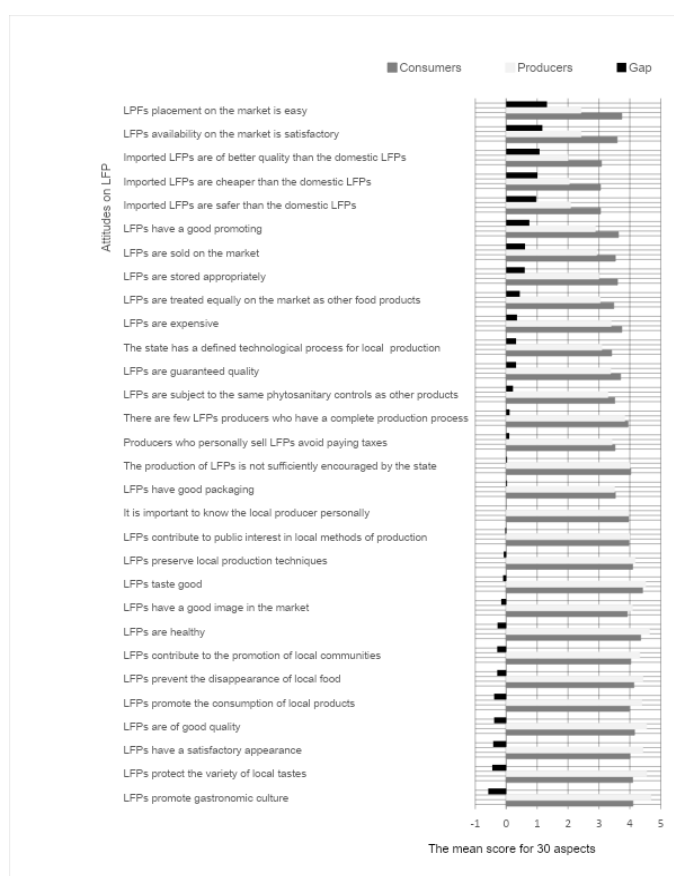

Figure 1. Graphical representation of mean scores of consumer and producer attitudes on local food products (LFPs).

4.1. Analysis of Consumers' Attitudes towards Local Food Products (LFPs)—Factor Analysis

As a next step, the authors wanted to analyze whether for a collection of observed variables there is a set of factors that can explain the interrelationships among those variables, by means of unified factor analysis. The factor structure matrix presented in Table 2 contains factor loadings that represent the correlation coefficients between the extracted factors and the variables and indicates the importance of each variable for a single factor [55,56]. Data were processed in the statistical package SPSS for Windows, version 22. In order to examine the latent structure of consumer attitudes on LFPs, factor analysis with the principal component method was applied. As the Kaiser-Meyer-Olkin measure of sampling adequacy was satisfied (KMO = 0.931), Bartlett's test of sphericity was significant ($\chi^2 = 15{,}618.91$; $p < 0.000$) therefore the factor analysis was conducted. Using the Cattell scree criterion, five factors were retained. Based on saturation in the assembly matrix and analysis of the internal consistency of the questionnaire, it was decided to exclude three items from the further analysis, which had saturations below 0.40 and whose exclusion increased the coefficient of reliability. To achieve a simple structure, the factors were rotated with Varimax rotation. Factor scores were established, and we calculated the Cronbach's reliability coefficient for each factor. Cronbach's reliability coefficients are 0.923, 0.890, 0.791, 0.723, and 0.714.

Table 2. Exploratory factor analysis for drivers of buying LFPs.

	Factors				
	1	2	3	4	5
X1 Intrinsic and extrinsic LFPs attributes (IPIQ)					
LFPs taste good	0.798				
LFPs are healthy	0.771				
LFPs have good quality	0.742				
LFPs have good promotion in the market	0.593				
LFPs have a satisfactory appearance	0.614				
LFPs have a good image in the market	0.592				
LFPs have good packaging	0.434				
LFPs are expensive	0.434				
X2 Local support (LS)					
LFPs protect the variety of local tastes		0.779			
LFPs prevent the disappearance of local food		0.759			
LFPs preserve local production techniques		0.752			
LFPs promote gastronomic culture		0.779			
LFPs promote the consumption of local products		0.729			
It is important to know the local producer personally		0.656			
LFPs contribute to public interest in local methods of production		0.623			
X3 Market characteristics (MC)					
There are few LFPs producers who have a complete production process			0.672		
LFPs availability on the market is satisfactory			0.623		
LFPs placement on the market is easy			0.618		
X4 Institutional challenges (ICH)					
LFPs are stored appropriately				0.815	
LFPs are subject to the same phytosanitary controls as other products				0.814	
LFPs are sold on the market as other food products				0.807	
The state has a defined technological process for LFPs production				0.551	
Producers who personally sell LFPs avoid paying taxes				0.562	
The production of LFPs is not sufficiently encouraged by the state				0.416	
X5 Existence of substitutes (SUB)					
Imported LFPs are safer than the domestic LFPs					0.910
Imported LFPs are of better quality than the domestic LFPs					0.889
Imported LFPs are cheaper than the domestic LFPs					0.826
Initial eigenvalues	10.979	3.744	2.209	1.679	1.423
Percentage of variation cumulative	32.29	11.01	6.49	4.94	4.19
Cumulative percentage	32.29	43.30	49.80	54.74	58.93
Cronbach's alphas	0.923	0.890	0.791	0.723	0.714

Source: Author's calculation.

Taking into account the saturation shown in the circuit matrix (Table 2), the obtained factors are grouped into five units. The first factor accounts for 32.29% of the variance in the model (eight items), the second factor for 11.01% of variance (seven items), the third factor for 6.49 % of variance (three items), the fourth factor accounts for 4.93% of variance (six items), and the fifth factor with three items accounts for 4.18% of variance in the overall model. Squared factor loadings:

- The first factor shall be labeled 'intrinsic and extrinsic LFPs attributes' (IPIQ) and within that factor three statements, with the highest factor loadings (0.788, 0.771, and 0.742), most accurately describe it. The squares of the indicated correlation coefficients represent the variance proportions of certain variables that are attributed to the effect of a given factor. The squared factor loadings, for the most significant statements within the first factor, explain 63.68%, 59.44%, and 55.06% of the variance of the factor named 'intrinsic and extrinsic LFPs attributes.'
- The second factor shall be labeled 'local support' (LS) and within that factor as many as five statements, with the factor loadings (from 0.729 to 0.779) accurately describe it. The squared factor loadings, for the two most significant statements, explain 60.68% of the variance of the factor named 'local support' (from the consumer point of view).
- The third factor shall be labeled 'market characteristics' (MC) and within that factor all three statements have the factor loadings (from 0.618 to 0.672) and the squared factor loadings that explain 38.19%, 38.81%, and 45.16% of variance of the factor named 'market characteristics.'
- The fourth factor shall be labeled 'institutional challenges' (ICH) and within that factor three statements, with the highest factor loadings (0.807, 0.814, and 0.815) describe it most accurately. The squared factor loadings for the most significant statements within the fourth factor explain 66.12%, 66.26%, and 66.42% of the variance of the factor named 'institutional challenges.'
- The fifth factor shall be labeled 'existence of substitutes' (SUB) and within that factor only one statement has a very high factor loading (0.910) which describes it. The squared factor loading for the most significant statement within the fifth factor explains 82.81% of the variance of the factor named 'existence of substitutes.'

4.2. Analysis of Producers' Attitudes towards LFPs—Factor Analysis

In order to examine the latent structure of the relationship between the variables of producers' perceptions toward the local food, factor analysis with the principal component method was applied. The Kaiser-Meyer-Olkin sampling adequacy which should be greater than 0.5 for a satisfactory factor analysis (KMO = 0.925) and Bartlett's test of sphericity was significant (χ^2 = 1432.54, $p < 0.000$), therefore all the assumptions were fulfilled in order to proceed with the analysis. Three factors were retained using the Cattell scree criterion and rotated with Varimax rotation. Based on saturation in the assembly matrix and analysis of the internal consistency of the questionnaire, it was decided to exclude from the further analysis two items, which had saturations below 0.40 and whose exclusion increased the coefficient of reliability. Factor scores were established, and we calculated the Cronbach's reliability coefficient for each factor. Cronbach's reliability coefficients are 0.915; 0.867, and 0.762, respectively.

Taking into account the saturation shown in the circuit matrix (Table 3), the obtained factors are grouped into three units. The first factor accounts for 39.24% of the variance (12 items), the second factor contains explaining 22.38% of variance (six items), the third factor explains 12.66% of variance (10 items) in the overall solution.

- The first factor can be labeled 'intrinsic and extrinsic LFPs attributes and local support' and within that factor four statements, with the highest factor loadings (0.886, 0.839, 0.831, and 0.809), describe it most accurately. The squared factor loadings for the most significant statements of the first factor explain 78.50%, 70.39%, 69.06%, and 65.45% of the variance of the factor named 'intrinsic and extrinsic LFPs attributes and local support.'
- The second factor can be labeled 'institutional challenges' and within that factor two statements, with factor loadings (0.744 and 0.669), accurately describe it. The squared factor loadings for the

two most significant findings explain 55.354% and 44.756% of the variance of the factor named 'institutional challenges' from the manufacturers' point of view.

- The third factor can be labeled 'market characteristics and existence of substitutes' and within that factor the three statements have factor loadings (0.724, 0.669, and 0.616) and squared factor loadings of for the most significant statements that explain 52.42%, 44.76%, and 37.95% of the variance of factor named 'market characteristics and existence of substitutes.'

Table 3. Exploratory factor analysis for drivers of produce LFPs.

	Factors		
	1	**2**	**3**
X1 Intrinsic and extrinsic LFPs attributes and local support			
LFPs promote gastronomic culture	0.886		
LFPs have a satisfactory appearance	0.839		
LFPs taste good	0.831		
LFPs have good quality	0.809		
LFPs protect the variety of local tastes	0.790		
LFPs prevent the disappearance of local food	0.789		
LFPs are healthy	0.766		
LFPs preserve local production techniques	0.701		
LFPs have a good image	0.669		
LFPs contribute to public interest in local methods of production	0.386		
LFPs have good packaging	0.499		
LFPs promote the consumption of local products	0.484		
X2 Institutional challenges			
LFPs guarantee quality		0.744	
It is important to know the local producer personally		0.669	
LFPs are stored appropriately		0.505	
Producers who personally sell LFPs avoid paying taxes		0.451	
The state has a defined technological process for LFPs production		0.426	
LFPs are subject to the same phytosanitary control as the other products		0.424	
X3 Market characteristics and existence of substitutes			
Imported LFPs are safer than the domestic LFPs			0.520
LFPs have good promotion in the market			0.557
LFPs are expensive			0.306
LFPs placement on the market is easy			0.724
Imported LFPs are cheaper than the domestic LFPs			0.669
LFPs availability on the market is satisfactory			0.616
Imported LFPs are of better quality than the domestic LFPs			0.572
LFPs are sold on the market as other food products			0.517
There are few LFPs producers who have a complete production process			0.438
The production of LFPs is not sufficiently encouraged by the state			0.423
Initial eigenvalues	13.24	7.27	4.29
Percentage of variation cumulative	39.24	22.38	12.66
Cumulative percentage	39.24	66.16	78.82
Cronbach's alphas	0.915	0.867	0.762
Extraction method: Principal component analysis. Rotation method: Varimax with Kaiser normalization.			
a. Rotation converged in 11 iterations.			

Source: Author's calculation.

4.3. Standard Multiple Regression

With the aim to identify if the perceived local food product perceptions influence the sustainable regional development the respondents are also asked to evaluate the claim: "Local food products contribute to sustainable regional development" (five-point interval scale question), which has been used as a dependent variable in the regression analysis. The data were analyzed using a multiple regression procedure, while the set of factors obtained in the factor analysis for each sample group

were used as predictors. By performing the multiple regression, the authors wanted to search and explain the relationship of the independent variables to the dependent variables if those relationships prove to be linear [57–59].

Firstly, a standard multiple linear regression was performed on the consumers sample. Before the regression was performed, we tested the assumption that the independent variables are not highly correlated with each other (r = 0.7 and above) [60]. Tolerance values are greater than 0.7, and VIF (variance inflation factor) values are not greater than 10, confirming that there is no multicollinearity. Model evaluation was then undertaken. Multiple regression has been conducted to determine the best linear combination of all factors for predicting local food products contribution to sustainable regional development. The empirical level F of the distribution is 123.015 and indicates that the high value of F distribution is not accidental, and that the regression equation is applicable. This combination of variables significantly predicted LFPs' contribution to sustainable regional development, with all five variables significantly contributing to the prediction in the consumer model. The beta values are as follows: The largest coefficient indicating which independent variable has the greatest influence on the dependent variable is found in the local support factor—LS; followed by institutional challenges—ICH; intrinsic and extrinsic LFPs attributes—IPIQ; while market—MC and substitutes—SUB have a weak negative impact. The adjusted R squared value was 0.426. This indicates that 43% of the variance in LFPs' contribution to sustainable regional development was explained by the model. The beta weights, presented in Table 4, suggest that in the consumer sample the local support factor contributes the most to predicting LFPs' contribution to sustainable regional development.

Table 4. Standard multiple regression.

	Consumers			**Producers**	
Factor	**Unstandardized Coefficients (Standard Error)**	**Standardized Coefficients**	**Factor**	**Unstandardized Coefficients**	**Standardized Coefficients**
(Constant)	0.942 (0.152)		(Constant)	4.141 (0.302)	
IPIQ	0.167** (0.030)	0.164	IPIQ & LS	0.104** (0.058)	0.099
LS	0.439**(0.030)	0.431	ICH	0.169** (0.044)	0.214
MC	−0.082** (0.029)	−0.082	MC & SUB	0.025 (0.055)	0.036
ICH	0.280** (0.027)	0.304			
SUB	−0.010 (0.022)	−0.013			

$Y_{LR} = 0.942 + 0.167$ IPIQ $+ 0.439$ LS $- 0.082$ MC $+ 0.280$ ICH $- 0.010$ SUB $\qquad Y_{LR1} = 4.141 + 0.104$ IPIQ & LS $+ 0.169$ ICH $+ 0.025$ MC & SUB

** Correlation is significant at the 0.01 level (2-tailed). Source: Author's calculation.

In order to conduct a multiple regression on the producers sample, a collinearity test was performed and, when all the assumptions were met, a multiple regression was applied. The empirical level F of the distribution is 5.744. The beta values are as follows: The largest coefficient indicating which independent variable has the greatest influence on the dependent variable is found in the institutional challenges factor, followed by intrinsic and extrinsic LFPs attributes and local support factor, while the market characteristics and existence of substitutes factor has no statistically significant effect. For the producers sample, the combination of variables significantly predicted LFPs' contribution to sustainable regional development, with two variables significantly contributing to the prediction in the producers' model. The adjusted R squared value was 0.53. This indicates that 53% of the variance in LFPs contribution to sustainable regional development was explained by the model. The beta weights presented in Table 4 suggest that in the producers' sample the institutional challenges factor contributes the most to predicting LFPs' contribution to sustainable regional development.

5. Discussion

Consumers' and producers' perceptions toward local food have been analyzed according to the 30 claims which were considered as relevant to provide a basis of consumers' and producers' interconnection in this developing market. In general, a rather complementary concept was found, given the similar ranking of perceived rating scores of these aspects. From the mean scores we can see that the consumers attributed the highest mean scores to LFPs' attributes such as good taste, health, good quality followed by local community support, such as the prevention of the disappearance of local food and promotion of gastronomic culture. Similarly, the producers attributed the highest mean scores to the promotion of gastronomic culture, LFPs' attributes such as health, good quality, protection of the variety of local tastes, and good taste. The producers' mean scores are slightly higher with regard to the LFPs' contribution to support to the local community and LFPs' attributes which reflects the need for increased LFPs promotion and education of consumers on LFPs' advantages to diminish the perceptual gap.

By the means of a factor analysis, the authors have grouped the claims in several factors, such as intrinsic and extrinsic quality, local support, institutional challenges, market characteristics, and existence of substitutes. The conducted factor analysis shows that the highest percent of variance in the factor analysis model in the consumers sample is found in the first two factors, intrinsic and extrinsic LFPs attributes and support of local community. It is precisely the first group of factors that shows that consumers have a positive perception of LFPs (taste good, healthy, of good quality, with good promotion and image in the market, a satisfactory appearance and good packaging). In particular, this work adds to the findings of Megicks et al. [45] that the significant drivers of positive purchasing behavior concerning local food are being motivated also by supporting local communities, retailers, and producers. The support for local farmers and traders and desire to eat high-quality traditional products that may not be found in supermarkets may be determinants of support for local food [15]. These results also confirm the findings of Colasanti, Matts, and Hamm [61] showing that the primary motives for local schools to purchase local food were local community support.

On the other hand, the consumer perception of LFPs which denote the attribute of food safety of a local brand needs to be further explored. The existence of food safety or quality assurance is of particular importance as the consumers expect quality assured LFPs, providing them with quality validation through standardization of production, regulated storage and control as "it is believed that credence attributes such as 'food safety,' 'traceability,' 'certification,' and 'brand' should positively impact consumers' perceived utility and consumers' willingness to pay a premium" [7] (p. 21). As such, there is a clear need for government regulatory environment involving the LFPs food safety and quality assurance. Building local food systems can help local economies to grow and yet improve the overall social well-being of local communities [62]. The findings of Donald and Blay-Palmer [63] on Toronto's innovative creative-food industry (defined as SMEs locally grown, organic, specialty, or culturally appropriate food) point out the disconnection between the growth of the creative-food industry and the government regulatory regime that promotes agri-food. The authors Christensen and Phillips [64], by using four theories (social capital, conflict theory, symbolic interaction, and rational choice), have further explored the possibility to bridge the gap between local food systems and community economic development. Finally, the results confirm that the local support factor as a predictor of perceived LPFs contribution to local economic support was statistically significant in both samples (of LFPs consumers and producers). For these reasons, the local producers should be further motivated to access a potential market which offers them the opportunity to sell direct to the customer, adding value to the product, and in the future possibly widening the LFPs range. Consumers should be further educated to support local producers, possibly creating a direct link with the producer. The production of a high-quality, branded product with a geographical indication would affect the recognition of the particular area [65], increasing the income and standard of living of the producer, involving all members of the community, developing teamwork, and ultimately preventing migration to urban areas or other countries [66]. Balázs [67] emphasizes that in post-socialist contexts new emerging types

of local food systems (LFSs) can be developed through collaboration within the local food sector and the researcher can help the translation process and knowledge sharing between various stakeholders who can shape LFSs' development standards (quality criteria, advertising, logos, labels, and regional trademarks) or solve legal, production, management, and commercial difficulties. In particular, the findings of Deller et al. [10] show that local foods development should be specific to a community that addresses the needs of producers and consumers and not precisely replicable as it is tailored to a specific location. "Most municipal/local governments and community planners have only recently begun to view agricultural and food systems as an important engine of economic development and sought to link their economic development and assessment work to local food systems activities" [68] (p. 4). The local food system can contribute to local employment as labor-intensive practices involved in local production techniques are present. Authors' findings show that "local food production may create jobs as well as stimulate proportionately larger spillover impacts on the local economy than nonlocal production. The results show that profitable local food producers exist across all sales classes and market channels, signaling there are viable business models for a variety of farms and ranches to pursue within this niche" [69] (p. 2). The findings of Rossi, Johnson, and Hendrickson [70] using IMPLAN (The Impact Analysis For Planning) model, reveal that the magnitude of economic benefits from local food systems depends on the region, and survey data show that total contribution to local GDP by local food systems was greater than the contribution of conventional food systems. The research of Sharp et al. [71] on understanding the opportunities and impacts of local food and farming development indicated that successful development efforts would contribute to positive economic impacts [72]. By using a local food impact calculator that can assist local food system practitioners in estimating the economic impact of their project, the authors have investigated which other sectors in the local economy are impacted by local food operations as well as other economic and nonfinancial benefits that may occur when local food systems are expanded [73,74]. On the other hand, the authors' [75] findings that direct-to-consumer (DTC) agricultural production impacts the food services and beverage subsector show the economic linkages between local agricultural production and food retail sectors. Boys and Hughes [76] suggest that the extent to which customer willingness to pay for locally grown foods surpasses the cost advantage of non-local products will influence the future market size for local products while the economic, environmental, social, and health impacts of LFS measured by the regional economics tools may account for public or attract private investment.

6. Conclusions

The results indicate that the LFPs perceptions in the samples of consumers and manufacturers have a rather analogous interpretation and, on the other hand, their mean scores slightly differ in some aspects, which has also been expected. This study, however, provides more substantive outcomes for the producers, processors, retailers, and consumers as it reveals local food products perceptions on various specificities. These include not just local food products' extrinsic and intrinsic attributes but some additional facets of demand and supply such as existence of an adequate institutional framework, improved credence attributes, and stronger brand image in order to be able to better differentiate these types of products. Interestingly, both the producers' and the consumers' perceptions on domestic LFPs, in relation to imported LFPs, are very positive as they consider domestic LFPs to be of better quality, safer, and cheaper than the imported food products, supporting the thesis that LFPs represent the potential that can contribute to the promotion of the local community. Consumers tend to pay more for the "value added" products and if the LFPs denote quality, freshness, and authenticity the local producers can in this way differentiate from large producers. The issue of trust that can be built between consumers and producers by a mutual contact shall contribute to healthier and more sustainable local community practices.

The importance of a local brand should be emphasized through targeted promotion programs. In this way consumers can be further educated on the benefits of LFPs. Branding programs that promote and identify local food products produced within the province may be a part of economic development

strategies for rural communities. This is only possible if the local food producers are positioned differently from other large food producers, and if LFPs have adequate support and promotion in the framework of a rural strategy.

In the Republic of Serbia, the framework of community and economic development strategy based on LFPs is still in an early stage of development. The successful practices of local food systems in the European Union can facilitate learning and information exchange. The European countries have the support from European Agricultural Fund for Rural Development (EAFRD). The Republic of Serbia still has limited funds for rural support but has adopted rural development programs that include modernization of agricultural holdings, development of competitiveness, sector integration, innovation, market orientation, and encouragement of entrepreneurship. In order to strengthen local food system development, during the EU accession, local farmers with small farm size (well below the EU average farm size), with lack of financing, sales and marketing skills, administrative and trading cost burdens, need to have support from official bodies at regional and local level, in order to create local food systems that may have long term implications for community economic development, environmental sustainability, and nutrition. The multifaceted issue of local food products in the future could then also be reviewed from an economic perspective, such as to estimate the net economic impacts of local food systems. The research results reflect the segment of LFPs in the Republic of Serbia. As the LFPs market in the Republic of Serbia gradually develops, it is necessary to further investigate and monitor the development of this market and perhaps further investigate the willingness to pay for domestic LFPs compared to imported LFPs, and the willingness to pay higher margins for specific LFPs categories. On the other hand, it would be useful to investigate the degree of competitiveness of LFPs producers (their marketing skills, entrepreneurial skills, economic viability of financial incentives).

This research study is based only on qualitative and quantitative study of the representative sample of LFPs' consumers and producers in the Republic of Serbia, therefore its findings cannot be generalized to a wider range of developed agri-food economies, as the Republic of Serbia's local food system is in the early stage of development. This limitation of the study can point to the need to undertake further studies in comparable economies at a similar stage of local food system development.

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