

ASPECTS REGARDING SUSTAINABILITY AND FOOD SECURITY IN ROMANIA IN THE CONTEXT OF EUROPEAN POLICIES

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Abstract

The aim of this research is to examine the present condition of food security within the framework of preparations for future adoption of reforms under the new Common Agricultural Policy, as well as the development of the National Strategy for the Development of Agriculture and Rural Area (SNDASR) for the period 2012-2027. It evaluates key indicators related to food security and culminates in an examination of a social survey conducted in the North-eastern Region of Romania. This study has specific objectives: to assess the level of food security within Romania and compare it with global and/or European standards using FAO-provided indicators, and to evaluate the extent of food security assurance specifically within the North-eastern Region of Romania. In recent years, there has been a growing focus on food security, particularly concerning food safety. It's important to clarify the distinction between food security and food safety, as they are often conflated. While food security encompasses indicators related to food access for the population, food safety is more concerned with the quality, sanitation, and safety of food products.

Key words: food sustainability, consumption, agricultural, food policies, security

INTRODUCTION

In the quest to achieve a sustainable and resilient agricultural sector, the interplay between policy reforms and strategic development is pivotal. This research delves into the current state of food security in Romania, set against the backdrop of impending reforms under the new Common Agricultural Policy (CAP) [21] and the formulation of the National Strategy for the Development of Agriculture and Rural Area (SNDASR) for the period 2023-2027 [18]. By scrutinizing key indicators of food security and analyzing the results of a social survey conducted in the North-eastern Region of Romania, this study aims to provide a comprehensive assessment of the nation's food security status.

The objectives of this study are twofold: firstly, to evaluate Romania's level of food security and benchmark it against global and European standards, utilizing indicators provided by the Food and Agriculture

Organization (FAO) [15]; and secondly, to gauge the degree of food security assurance within the North-eastern Region, a critical area for agricultural development. Amidst the increasing emphasis on food security, particularly in relation to food safety, this research also seeks to elucidate the distinction between the two concepts. While food security is an umbrella term encompassing the availability and accessibility of food to the population, food safety zeroes in on the quality, hygiene, and safety of food products [16]. Understanding this differentiation is essential for addressing the multifaceted challenges of ensuring a food-secure future for all.

MATERIALS AND METHODS

The study relies on data gathered manually from the Eurostat European Statistics Institute, the National Institute of Statistics, and reports published on indicators related to agricultural sustainability, food security, and

environmental sustainability over six years (2016-2022).

Methods of analysis employed:

The methodological and scientific underpinning of this study relied on a comprehensive array of direct and indirect documentation methods, including observation, qualitative, quantitative, and historical analysis, synthesis, comparison, systemic and monographic approaches, as well as statistical analysis. This multifaceted approach facilitated a thorough examination and depiction of the studied phenomena and economic processes. The significance of this work lies in its exploration of both intrinsic and extrinsic motivational factors influencing consumers.

A quantitative survey of consumers was conducted using a hybrid data collection method, with a sample size of 372 respondents aged 18 to 65. The questionnaire addressed product characteristics, individual requirements or preferences, intrinsic and extrinsic motivational factors, and demographic attributes.

The survey was conducted through a carefully designed questionnaire, administered via the Google Forms platform and distributed through social media channels, including Facebook and WhatsApp. The questionnaire comprised a predefined set of questions aimed at understanding consumer behaviour regarding agri-food products [25]. A maximum allowable error of +/- 5% and a probability level of 90% were established, and the number of respondents was determined based on this stratification, resulting in 326 participants. This choice was justified by the preference for reducing the confidence level in favour of the standard probability level of 95%.

The questionnaire focused on product characteristics, personal requirements or needs, intrinsic and extrinsic motivational elements, and demographic characteristics. The first dimension, accessibility, assesses consumers' ability to purchase food, their vulnerability to price fluctuations, as well as government policies and programs that can shield them from excessive price fluctuations [1]. Thus, following the calculation, it was

determined that the sample size for the conducted survey is 372 people, at a confidence level of 95%. Applying the formula for a confidence level of 90%, the resulting number of people to be surveyed for the entire county is 326.

Table 1. Contingency Table between Education Level and Place of Residence

Education level - last school completed Place of residence (Urban / Rural) Cross tabulation			Residential environment (Urban / Rural)		Total
			Rural	Urban	
Education level	Only 10 classes	Count	35	9	43
	Vocational school	Count	21	8	29
	High school	Count	10	23	33
	Post-secondary school	Count	73	32	105
	University studies (Bachelor)	Count	16	30	46
	Post-graduate studies	Count	34	35	69
Total		Count	189	135	326

Source: Own calculation.

This approach ensured both the statistical relevance of the data and the efficiency in collecting the necessary information for analysing consumers' purchasing and consumption decisions in the agri-food sector. All the data used were processed using a computer, using the Microsoft Office package.

RESULTS AND DISCUSSIONS

During the 2023-2027 periods, the Common Agricultural Policy (CAP) will focus on ten main objectives [5]. These will concentrate on social, economic, and environmental.

The key objectives of the new CAP are illustrated in the graphical image shown in Fig.1.

The general public has their own ideas of food sustainability, which often include concepts like social justice, food security, animal welfare, fair labor and trade, local farming, organic food production, and the concept of "natural," just to mention the most important

ones [11, 26]. The new CAP [11] has emerged among the many challenges brought by the post-pandemic realities that have created a series of economic difficulties both for the European farmers and for the whole EU agricultural sector [5]. Despite those challenges the new CAP has established high ambitions regarding the sustainable rural development and the contribution of the

European agricultural sector in order to create a more green and clean EU economy [2]. The new architecture of CAP is centered on the green policies and new ten objectives on sustainability related objectives (Figure 1) who are seeking to increase the competitiveness of EU's agricultural sector, while sustaining food security and high climate and environmental ambitions [6].

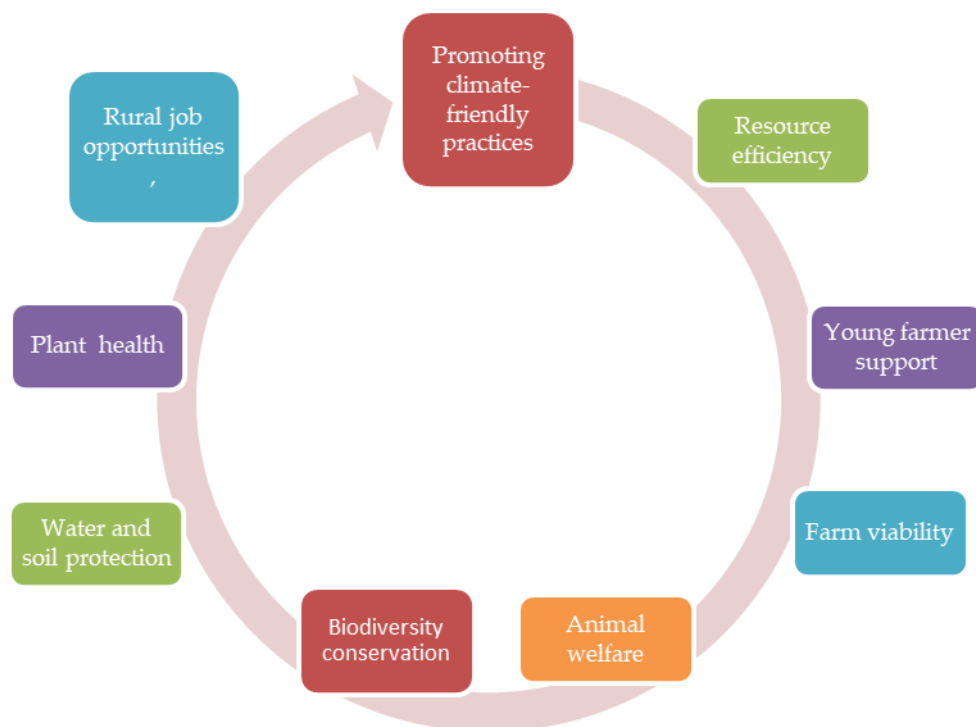


Fig. 1. Key objectives of the new CAP
Source: Own interpretation after (CAP) common-agricultural-policy [11].

Food security refers to the quantity of food necessary to meet the needs of a population. Over the past four decades, significant advancements have been made globally, including in Romania, in terms of food production and ensuring food security. However, progress in food security has been relatively slow and is heavily influenced by social and political conditions at various junctures. The rapid transformations occurring in global economic governance, the structures of agriculture and food industries at both local and global levels, as well as the processes of globalization and trade liberalization, contribute to swift changes in consumer preferences and heightened expectations regarding the quality, safety, nutritional value, legislation, and control of food [19]. The development of new technologies and the

acquisition of fresh knowledge about food aim to meet these diverse requirements to a certain extent [21].

Sustainability is characterized by the convergence of different dimensions that can be informed by indicators of economic profitability, environmental efficiency and social and societal well-being [22].

Romanian agriculture, which ensures the security and sustainability of food, is characterized by its highly polarized structure and a large number of small farms. Approximately 89% of Romanian farms (3.1 million) are less than 5 hectares, constituting 45% of the total Utilized Agricultural Area (UAA). This includes farms engaged in subsistence agriculture as well as those used for semi-commercial purposes. These farmers are generally older, use traditional farming

methods, and often work part-time (i.e., in combination with other sources of income). Although the number of smallholder farmers is steadily declining, most continue to exist as stable rural households with diversified production and high consumption of home-grown food [4], all of which contributes to a significant degree of socio-economic resilience. In Europe, family farming is an umbrella concept that incorporates farms of many different types and sizes, with both full- and part-time farmers and farmers with and without other gainful activities, i.e., all activities other than those relating to farm work, carried out for remuneration. Some are specialized commercial operations, while others produce mainly to satisfy their own household food needs, the so-called semi-subsistence farms (SSFs).

Table 2. Number of small farms (size <5 ha) in the European Union (2020)

EU member	Total number of farms	Total number of small farms (farm size <5 ha UAA)	% of small farms (farm size <5 ha UAA)
State groups			
EU-27	10,487,780	6,648,580	64%
EU-15	4,217,650	2,096,350	50%
New Member States (NMS)	5,885,350	4,488,450	76%
Romania	2,890,350	2,254,473	78%

Source: Own calculation based on Eurostat's statistical data from 2020 [13].

In the Table 2 presents data of the sustainable performance of Romanian agriculture compared to the EU-28 and the individual countries analyzed. The value of total agricultural output is an indicator often used in international comparisons to express the performance of agriculture. This study aims to contribute to the current debate on improving diets with locally produced nutritious legumes and promoting greater food security and income generation among smallholder farmers [4]. In 2020, there were 2.89 million agricultural exploitations in Romania, down by 25.2% compared to 2010, reveals the latest agriculture census carried out by the National

Statistics Institute (NIS) [20]. These trends have been supported by the EU funded programs for local farmers, which come with certain requirements in terms of farm size and economic viability. In the framework of the 2014-2020 financial programming, the main change to the CAP was the greening, which comprised the reservation of 30% of direct aid for a green payment, the allocation of which is subject to compliance with three conditions: the maintenance of permanent grasslands, crop diversification and the reservation of at least 5% of arable land for areas of ecological interest such as hedges or ponds [5].

Another factor that has contributed to the overall decline in the number of farms was the massive population migration in the last ten years. Many Romanians from the countryside have given up subsistence farming and left the country looking for higher income by working abroad.

Having farms of optimal size capable of using production factors efficiently is a global goal for agriculture on which the food security of populations depends [9]. This process involves the consolidation of the territory, but only up to a certain size, beyond which the overall marginal return decreases and negative economic, social and environmental effects begin to appear. Economic factors can lead small farmers to give up land exploitation, especially low market competitiveness. Furthermore, young people often prefer urban civilization to rural culture and government policies, including CAP subsidies, which favor large farms [11]. However, the farmer's attachment to his land is usually secure, but often coercion, deception or orchestrated publicity is used to create confusion, to take control of their land. Using land consolidation to obtain adequate agricultural structures is not a simple process; began in the second half of the last century and his practice continued to expand.

The agricultural holdings in Romania differ significantly from the EU ones, particularly manifested in the limited extent of utilized agricultural area, attributed to the fragmentation of land exploitation. Utilized agricultural area, abbreviated as UAA, is the total area taken up by arable land, permanent

grassland, permanent crops and kitchen gardens used by the holding, regardless of the type of tenure or of whether it is used as a part of common land. Furthermore, diminished levels of technical equipment and resource

consumption contribute to a markedly inferior economic performance. A summary of indicators, referring to the inputs and outputs of Romanian farms compared to the EU farms is presented in Table 3.

Table 3. Economic, social and environmental capital of agricultural holdings, Romania and EU

	Romania average on farm		EU average on farm		Indicators/UAA 2022		
	2018	2022	2018	2022	Romania	EU	RO/EU %
Utilised agricultural area, ha	9.3	12.06	30.77	38.53	-	-	-
Machinery, euro	5,146	7,165	29,496	46,017	524.53	2,907.4	18
Total livestock units, LU	6.99	8.03	25.5	30.7	0.69	2.61	26.5
Consumption of energy, euro	859	1,105	4,205	6,306	94.39	430.65	21.9
Consumption of fertilizers, euro	859	1,105	4,205	6,306	72.15	349.96	20.6
Crop protection, euro	527	845	3,418	4,883	40.08	219.7	20.6
Total labour input, AWU	305	469	2,145	2,915	0,13	0,18	74,3
Environmental subsidies, euro	2	2	2	2	6.25	96.2	6.5
Total output, euro	7	73	939	1,320	1,307.7	6,028.3	21.7
Farm net value added, euro	11,809	15,312	58,870	84,073	726.94	2,575.9	28.2

Source: Own calculation based on the FADN database [12].

Within the commercial-type agricultural holdings in Romania, there has been an economic growth during the period (2018-2022), both in Romania and the EU, for each analyzed indicator. The phenomenon of expanding agricultural activities (increasing productive area and technical basis) has also modified the structure of production factors. During this period (2018-2022), it is noteworthy that farms in Romania have lower technical equipment than EU farms (18% machinery) and lower consumption of energy (21.9%), fertilizers (20.6%), and crop protection products (20.6%) [20]. The lower consumption of energy, fertilizers, and crop protection products, as well as the lower livestock density in Romanian farms compared to the EU, indicate a lower environmental impact of the applied agricultural practices [7]. Romanian agriculture has different results in terms of territorial performance. Romanian agriculture is characterized by a multitude of small-sized agricultural holdings with an excessively fragmented agricultural area [17]. The average area of a commercial-type agricultural holding in Romania had approximately 10 hectares, which is over three times smaller, and there

are significant organizational, agro technical differences compared to the EU average and environmental subsidies represent only 6.5% compared to the EU average. In these conditions, the economic performance achieved by the farms in Romania is lower than the EU average (total output euro/ha: 21,7%; farm net value added euro/ha: 28,2% Romania has favorable conditions for agricultural crop and livestock production. However, yields and labor productivity in agriculture are low. Clearly, the technical equipment, consumptions, and results are much lower [8]. We can gain insight into sustainable performance by analyzing comparatively the inputs and outputs per utilized agricultural area. This is an advantage for agricultural holdings in Romania in terms of land conversion to organic agriculture [3, 14].

Furthermore, the overall labor productivity in agriculture is less than a third of the European average, underscoring the need for strategic interventions to enhance efficiency and output in the sector. Addressing these productivity gaps will be crucial for maximizing the full potential of Romania's agricultural resources and improving its overall competitiveness in

the European market [26]. Social capital, encompassing aspects like human re-sources, community engagement, and education, plays a crucial role in shaping food security. A skilled and educated workforce within the agricultural sector contributes to increased productivity and innovation. Furthermore, strong social cohesion within farming communities fosters collaborative efforts, knowledge sharing, and resilience in the face of challenges. Social capital also influences the equitable distribution of re-sources, ensuring that the benefits of agricultural activities reach diverse segments of the population.

In the Romanian context, there is an upward trend in preferences for imported foods, even though Romania enjoys its own agricultural wealth. This phenomenon has caught the attention of Western food producers, who are encouraged to expand their market in the country. It is important to mention that, although Romania is a country with a strong agricultural tradition, the consumption of imported food products from the West has increased significantly.

Romania demonstrates a growing interest in Western-origin food products, with significant imports that underline this trend. According to data from the National Institute of Statistics (NIS) [22], Romania imported food and live animals worth over 8 billion euros in 2021, an increase of over 12% compared to the previous year. This increase in imports can put pressure on local producers, who must adapt to changing consumer preferences and international competition.

However, there is also good news for the local agricultural sector. Food exports recorded an increase of 46.3% in 2021 compared to 2020, reaching a cumulative value of 6.3 billion euros. This suggests that, despite the increase in imports, Romanian food products remain competitive in foreign markets [24].

In total, in 2021, exports amounted to 74.7 billion euros, an increase of 20.1% compared to 2020, while imports recorded an increase of 22.1% to a value of 98.3 billion euros. Thus, INS announces a trade deficit of 23.6 billion euros for 2021, 5.3 billion euros above the level recorded in 2020. This expansion of the

imported food market in Romania indicates an openness of Romanian consumers to international culinary diversity, thus surpassing local food traditions and religious preferences for moderate consumption [27].

The data provided offers a comprehensive view of the average total monthly income and expenditure per household in Romania, with a specific focus on food and beverages, across different macro-regions and development regions from 2016 to 2021. Here are some observations:

- Total Income: There has been a general increase in the total average monthly income at the national level, with a growth of 110.88% in 2021 compared to 2016. The Northeast region also shows an increase, although slightly lower at 109.02%.

- Total Costs: The total average monthly costs have similarly risen over the years, with the national average reaching 111.75% in 2021 relative to 2016. The Northeast region's increase is somewhat less at 107.03%.

- Expenditure on Food and Beverages: The percentage of total expenditures on food and beverages has remained relatively stable, with a slight increase from 19.94% in 2016 to 20.40% in 2021 at the national level. The Northeast region shows a slight decrease in the same category, from 19.87% to 18.94%.

- Regional Differences: The difference in regional spending compared to the national average has varied, with the Northeast region showing a significant difference of 2000.38% in the expenditure on food and beverages category, which could be due to a data entry error or require further context for clarification [25].

Overall, these figures indicate a steady growth in both income and expenditure, with food and beverages taking up a consistent share of the household budget. The data suggests that Romanian households have experienced an increase in their financial capacity, but also an increase in living costs over the years. The stability in the percentage of expenditure on food and beverages reflects a possible cultural consistency in spending habits, despite economic changes. It's also noteworthy that the increase in income and expenditure percentages exceeds the inflation rate,

suggesting real growth in economic terms. However, the significant regional differences highlighted in the data may point to disparities in economic conditions across different parts of the country. All this translates into the need

to direct investment in agricultural research and development, in order to keep high the other components of food sustainability (Table 4).

Table 4. Average total monthly income and expenditure per household and expenditure on food and beverages, by macro-regions and development regions (2016-2021)

	Macro-regions and development regions	Years						
		2016	2017	2018	2019	2020	2021	2021 vs. h 2016 %
		Unit of measurement: Euro						
Total income	TOTAL ROMANIA	474.00	513.35	505.63	498.61	523.70	525.55	110.88
	Northeast region	457.94	499.04	519.87	482.17	515.21	499.24	109.02
	Difference from Total Macro-region %	16.05	14.32	-14.24	16.44	8.48	26.31	163.87
		9.61	9.21	102.82	96.7	98.38	95	988.55
Total Costs	TOTAL ROMANIA	425.86	453.80	452.68	450.44	474.93	475.91	111.75
	Northeast region	420.14	446.33	465.21	431.24	467.41	449.67	107.03
	Difference from Total Macro-region %	5.71	7.47	-12.53	19.20	7.51	26.25	459.28
		98.66	98.35	102.77	95.74	98.42	94.49	95.77
Expenditure on food and beverages	TOTAL ROMANIA	94.52	100.99	100.13	98.31	106.31	107.22	113.43
	Northeast region	90.99	96.44	97.56	91.40	98.50	94.57	103.94
	% of Total Expenditures Romania	19.94	19.67	19.80	19.72	20.30	20.40	102.31
	% of total region expenditure	19.87	19.33	18.77	18.96	19.12	18.94	95.34
	<i>The difference in regional spending compared to Romania</i>	0.07	0.35	1.04	0.76	1.18	1.46	2,000.38

Source: Eurostat, 2021 [13].

The cultural and traditional significance of local products in Romania is profound and plays a vital role in promoting the country's cultural identity and diversity. Both consumers and producers value these aspects and consider them essential in preserving and promoting Romania's cultural heritage [18]. Price and accessibility are two important factors in the decision to purchase local products in Romania. These factors can significantly influence consumer preferences and the success of the local products market. Let's explore these aspects in detail:

(1)Price: Price is a key factor in the purchasing decisions of most consumers.

Local products may be perceived as more expensive than imported alternatives or mass-produced items. However, many consumers are willing to pay a higher price for local products because they associate them with quality, freshness, and support for the local community.

(2)Quality and Value: Price can be evaluated in the context of quality and value. Consumers may be willing to pay more for local products because they perceive them to offer superior quality, freshness, and nutritional value. Thus, price can be a strong motivator when correlated with quality [26].

(3)Cost Awareness and Budget: For some consumers, price remains a major factor in their purchasing decisions. They may be constrained by a tight budget and may choose local products only if the price is competitive compared to available alternatives.

(4)Promotions and Discounts: Promotions, discounts, and special offers can influence the purchase of local products.

(5)Distribution and Logistics: The accessibility of local products in various regions of Romania can significantly affect consumer choices. If local products are only available in certain geographic areas, this can limit access for consumers in other regions [23].

(6)Market Availability: Local products need to be widely available to meet consumer demands. Consistent market availability can build trust and loyalty towards local products.

(7)Efficient Transportation and Logistics: Transportation costs can impact the price of local products. To maintain competitive

prices, local producers may need efficient logistics solutions that minimize transportation costs.

(8)Consumer Awareness: Consumer education and awareness of the benefits of local products can influence their understanding of the quality-to-price ratio and stimulate demand for these products.

In conclusion, price and accessibility are important factors that can influence purchasing decisions for local products in Romania. A balanced approach that takes into account quality, value, and consumer needs is essential to ensure the success of the local products market and to satisfy the diverse requirements of consumers (Table 5).

The table you've provided outlines the intrinsic and extrinsic factors related to sustainability and food security in Romania, focusing on social qualities, benefits, and motivational factors. Here's a commentary on Table 5.

Table 5. Intrinsic and extrinsic factors

Social qualities and benefits	Intrinsic (quality, appearance, freshness, taste, healthy, safety and being associated with selfish motivations or self-interest)	Extrinsic (savings, preserving farmland, increasing food security with altruistic motivations, or contributing to the "greater good.")
Motivational factors	The desire to recreate nostalgic moments, full of shopping, fun and memories of the past, nostalgia for shopping,	Support for local farmers, producers and retailers
	health consciousness, quality of life and well-being values and emotional motivations	Environmental and social motivation
	Hedonic: culinary tourism, association and food novelty,	Environmental concerns
	Health consciousness egg nutritional value	Animal welfare, environmental sustainability, supporting rural communities, animal welfare
	The taste, freshness, association and novelty of food tourism products as purely hedonic consumption experiences, effective ways to create hedonistic and memorable experiences	Community-oriented motivations and motivations for participating in a community-supported agriculture scheme
	An experience that brings intrinsic reward or satisfaction without the need for external incentives.	Local heritage

Source: Own interpretation.

The factorial analysis yielded three distinct factors, which partially adhered to the Kaiser-Guttman

Rule for retaining factors with eigenvalues exceeding 1 (KMO=0.86), collectively explaining 75.6% of the model's total variance. The primary factor comprised three items, elucidating 52.9% of the model's variance individually (eigenvalue=4.23), and was denoted as "Health, Natural, and Nutrition."

The second factor, labeled "Fresh, Taste, Appearance," encompassed three items, each explaining 12.6% of the model's variance (eigenvalue=1.00). Meanwhile, the third factor, explaining 10.1% of the model's variance individually (eigenvalue=0.81), included two items.

However, the third factor exhibited cross-loading, with the item "Safer" demonstrating a factor loading of 0.51 for both factor one,

"Health, Natural, and Nutrition," and factor three. Due to the low eigenvalue and cross-loading, a second factor analysis focusing on Consumption was conducted, resulting in a 2-factor solution instead of the initial 3-factor solution. Nevertheless, this alternative analysis offered a lower explanation of the total variance and introduced conceptual and logical ambiguity regarding factor labels. Ultimately, in line with insights from [24], it was determined that "Safer" pertains more to

confidence in understanding food production methods, aligning with factor three's interpretation, rather than solely focusing on the health, natural, or nutritional aspects of local food, as suggested by factor one. Consequently, the third factor was relabelled as "Safety and Trust" to better capture its underlying concept [10].

Table 6 summarizes the three factor solutions for participant attitudes.

Table 6. Three factor solutions for participant attitudes

No.	Community - Variable	Safety and Trust	Fresh, Taste, and Look	Health, Natural, and Nutrition
1	More healthful	0.16	0.32	0.88
2	More natural	0.19	0.17	0.93
3	More nutritious	0.13	0.29	0.24
4	More fresh	0.24	0.82	0.20
5	Better tasting	0.13	0.94	0.29
6	Better looking	0.08	0.78	0.56
7	Safer	0.56	0.48	0.19
9	More trustful	0.93	0.17	0.88
10	Eigen value	4.240	1	0.81
	% var/cov exp.	52.9%	12.6	

Source: Questionnaire interpretation administered via the Google Forms.

Attitudes

The factorial analysis solution for the Community dimension comprised two factors adhering to the Kaiser-Guttman Rule, retaining factors with eigenvalues exceeding 1 (KMO=0.86). These factors collectively elucidated 75.2% of the model's total variance. The primary factor encompassed four items, individually accounting for 61.1% of the model's variance (eigenvalue=4.28), and was designated as "Community - Social Well-being." Meanwhile, the secondary factor, labeled "Community - Economic Well-being," comprised three items, each explaining 14.1% of the model's variance (Eigenvalue=0.99).

For the Environment/Sustainability dimension, the factorial analysis yielded a solitary factor aligning with the Kaiser-Guttman Rule (KMO=0.85), elucidating 65.3% of the total variance of the model. This factor, denoted as "Environment," encompassed six items and exhibited an eigenvalue of 3.92. These eigenvalues signify the extent of association between each variable and its corresponding factor, with higher values indicating stronger associations.

Additionally, the eigenvalue represents the proportion of total variance explained by each factor. Variables such as "More money stays in my community" and "A more economically viable community" are associated with economic wellbeing, as indicated by high factor loadings (0.92). Variables such as "More money stays in my community" and "A more economically viable community" are associated with economic wellbeing, as indicated by high factor loadings (0.92).

Variables like "Establishing relationships with farmers/producers who provide my food" and "Supporting socially sustainable farming practices" are strongly associated with social wellbeing, with factor loadings of 0.95 and 0.99 respectively.

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Table 7. Factor solutions for environment participant attitude

No.	Environment -Variable	Social Wellbeing	Economic Wellbeing
1	More money stays in my community	0.24	0.92
2	A more economically viable community	0.36	0.92
3	Stimulating rural employment	0.25	0.90
4	Providing a fair income for the farmer/producer	0.75	0.51
5	Establishing relationships with farmers/producers who provide my food	0.95	0.39
6	Supporting economically sustainable farming practice	0.93	0.35
7	Supporting socially sustainable farming practices	0.99	0.17
8	Eigen value	4.28	0.99
	% var/cov exp.	61.1%	14.1%
	KMO=0.85	Total % var exp.=65.3%	

Source: Questionnaire interpretation administered via the Google Forms.

Table 7 presents a factor analysis of various environmental variables in relation to social and economic wellbeing. Here's a breakdown of the table.

Table 8. Factor solutions for sustainable farming practices

No.	Sustainable farming practices -Variable	Environment
1	Promoting greater biodiversity	0.74
2	Production practices that are better for the environment	0.86
3	Food less likely to be treated with chemicals or contain residues from pesticides, herbicides, or fertilizers	0.72
4	Supporting environmentally sustainable farming practices	0.91
5	Support animal health and welfare	0.84
6	Improving soil and water quality	0.84
7	Eigen value	3.92
	% var/cov exp.	65.3%

Source: Questionnaire interpretation administered via the Google Forms.

Subjective Norms

The Influence EFA solution consisted of three factors that partially met the Kaiser-Guttman Rule to retain factors with Eigen values over 1 (KMO=0.73) accounting for 67.0% of the total model variance explained. The first factor of this solution consisted of four items and individually accounted for 35.8% of the variance in the model (Eigen value=2.51). This factor was labelled 'Others.' The second factor consisted of two items and individually accounted for 18.9% of the variance in the model (Eigen value=1.32). This factor was labelled 'Parent(s) and Kid(s).' The third factor solution consisted of one item and accounted for 12.3% of the variance in the model (Eigen value=0.86). Concern with an Eigen value under 1 prompted a second factor analysis of influence with a 2-factor solution rather than the current 3-factor solution. The 2-factor

solutions of influence had lower total model variance explained (54.7%) as well as a cross-loading on item 'My children.' A 3-factor solution was retained for this analysis. This factor was labelled 'Partner or Spouse.'

CONCLUSIONS

In conclusion, the cultural and traditional significance of local products in Romania holds a profound importance, serving as a key element in preserving and promoting the country's rich cultural heritage and diversity. Both consumers and producers recognize and value these aspects, contributing to the preservation of Romania's cultural identity. Price and accessibility emerge as critical factors shaping consumer preferences and the success of the local products market. Price considerations are complex, involving perceptions of quality, freshness, and support

for the local community. Many consumers are willing to pay a premium for local products due to their association with superior quality and a commitment to community support.

The interplay of quality, value, and consumer needs is vital in influencing purchasing decisions. While some consumers prioritize cost and budget constraints, others may be motivated by promotions, discounts, and special offers. Market availability, efficient logistics, and consumer awareness further impact the success of local products.

The adoption of the locavore movement in Romania has the potential to bolster the local economy by keeping profits within the community.

By choosing local products over mass-produced alternatives, consumers contribute to reinvesting profits locally, fostering economic growth, and creating more jobs.

In essence, a balanced and comprehensive approach that considers various factors such as price, accessibility, quality, and consumer awareness is crucial for ensuring the sustained success of the local products market in Romania. This approach not only supports local traditions but also contributes to economic development and community prosperity.

REFERENCES

- [1]BEUC, The European Union Consumer Organization, Consumer Debates: Do Consumers Really Benefit from the Dynamic Price Tariff, <http://www.beuc.eu/>, Accessed on 14.05.2023.
- [2]Birdwell, J., 2021, Fixing Food 2021: An opportunity for G20 countries to lead the way, Food sustainability index. Barilla Center for Food Nutrition, 8, 163–173
- [3]Blackman, A., Naranjo, M.A., 2010, Does Eco-Certification Have Environmental Benefits? Organic Coffee in Costa Rica; Discussion Paper; Resources for the Future: Washington, DC, USA, pp. 10–58. <https://core.ac.uk/download/pdf/9304506.pdf>, Accessed on 19 March 2023.
- [4]Bogdan, A.T., Ipate, I., Bara, V., Diaconescu, D., Purcarea, C., Strateanu, A.G., 2022, Ecoeconomic and bioeconomic impact of food security and security in perspective increased consumption of food and feed during 2030-2100. Annals of the University of Oradea, Fascicle: Ecotoxicology, Animal Husbandry. pp. 115-128.
- [5]Bourget, B., 2021, The Common Agricultural Policy 2023-2027. Change and Continuity, 20 Sept. 2021. Foundation Robert Schuman Policy Paper, 2021, 60.
- [6]Burja, C., Burja, V., 2016, The economic farm size and sustainable value. Disparities between Romania and the EU States Annals of the „Constantin Brâncuși” University of Târgu Jiu, Economy Series, Issue 1, 50-57.
- [7]Chiru, A., 2012 Policy of quality within the agri-food sector. Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development. Vol.12(3), 23-28.
- [8]Diaconescu, M, 2005, Agri-Food Marketing. University Publishing House, pp. 48-60.
- [9]Economist impact, Global Food Security Index 2022, Exploring challenges and developing solutions for food security across 113 countries, <https://impact.economist.com/sustainability/project/food-security-index/>, Accessed on 18 May 2023
- [10]Dobrotă, E.M, Săracu, A.-F., 2022. Public food procurement - a tool for a sustainable economy development in rural areas. Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development. Vol. 22(2), 301-308.
- [11]European Commission, The new Common Agricultural Policy 2023-2027, [https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/new-cap-2023-27_en#:~:text=The%20new%20common%20agricultural%20policy,\(CAP\)%20was%20formally%20adopted,15.05.2023](https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/new-cap-2023-27_en#:~:text=The%20new%20common%20agricultural%20policy,(CAP)%20was%20formally%20adopted,15.05.2023).
- [12]European Commission, FADN database, Standard results about the economic situation of EU farms by different groups, <https://agridata.ec.europa.eu/extensions/FarmEconomyFocus/FADNDatabase.html>, Accessed on 17.05.2023
- [13]Eurostat, 2022, Farms and farmland in the European Union-Statistics, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Farms_and_farmland_in_the_European_Union_-_statistics#:~:text=There%20were%209.1%20million%20agricultural,than%205%20ha%20in%20size., Accessed on 19.05.2023.
- [14]Fleseriu, C., Cosma, S.A., Bocăneț, V., 2020, Values and Planned Behaviour of the Romanian Organic Food Consumer. Sustainability 2020, 12, 1722.
- [15]FAO, www.fao.org accessed on 15.05.2023.
- [16]FAO.org, Codex Alimentarius, International Food Standards, <http://www.codexalimentarius.org/>, Accessed on 21.05.2023
- [17]Grigoras, M., 2016, Agro-alimentary products marketing at the confluence of modern consumer's requirements and sustainable development. "Economica" Scientific and didactic Journal, no. 4 (98), pp.7-21 ASEM Moldova.
- [18]Marcuta, A., Popescu, A., Tindeche, C., Panait, R., Marcuta, L., 2022, The importance of urban and peri-urban agriculture in sustainable development and increasing food security. Scientific Papers Series

Management, Economic Engineering in Agriculture and Rural Development. Vol. 22(3), 397-402.

[19]Morawicki, R.O., Díaz González, D.J., 2018, Food Sustainability in the Context of Human Behavior. *Yale Journal Of Biology And Medicine* 91(2),191-196.

[20]National Institute of Statistics (Institutul Național de Statistică),

<https://insse.ro/cms/en/content/european-statistics-day-2023>, Accessed on 17.05.2023.

[21]National Institute of Statistics, Press release No. 7, 24 January 10, 2023, Domain: Income and living conditions. www.insse.ro, Accessed on 17.05.2023.

[22]Puiu, F., Turek-Rahoveanu, A., 2024, Short food supply chains: key concepts, benefits, risks, European union support, models from Romania, strategies of development. *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development* Vol. 24(1), 819-827.

[23]Rodionov, A., Kozin, M., Pripoten, V., 2019, Innovative development of grain products subcomplex, as the driver of national food security provision. *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development*. Vol. 19(3), 493-498.

[24]Risku-Norja, H., Muukka, E., 2013, Food and sustainability: local and organic food in Finnish food policy and in institutional kitchens, *Acta Agriculturae Scandinavica, Section B., Soil and Plant Science*, Vol.63, Issue Sup.1, Local food - a step towards better and more environmentally friendly products, pp. 8-18.

[25]Sluser, B.M., Ioan, C.C., Robu, E., Macoveanu, M., 2009, European frame for sustainable agriculture in Romania: Policies and strategies. *Environmental Engineering and Management Journal*. Vol.8(5), 1171-1179.

[26]Steptoe, A., Pollard, T.M., Wardle, J., 1995, Development of a measure of the motives underlying the selection of food: The food choice questionnaire, *Appetite*, Vol.25(3), 267-284. doi: 10.1006/appe.1995.0061

[27]Stoica Gabriela-Dalila, Sterie Maria-Cristina, Giucă Andreea-Daniela, Ursu Ana, Petre Ionuț Laurențiu. 2022. Trends in organic farming in Romania. *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development* Vol. 22(3), 725-731.