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Rural Typology of the EU Enlargement Process: Serbia in Focus

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Abstract: European integration encourages rural diversification and innovation, supporting the creation of non-agricultural jobs and strengthening local economies. This scientific paper explores the typology of rural areas in Serbia and compares them to rural areas in the European Union. Methodologically, the research leverages multivariate statistical analysis, precisely factor and cluster analysis. The primary objective is to understand these regions' diversity and commonalities comprehensively. The core focus of this study revolves around the significance of these findings within the context of Serbia's European integration process. The analysis includes 12 variables that create a model of rurality, i.e., the four dimensions of rurality: level of economic development, structural characteristics of agriculture, demographic structure, and spatial characteristics. Based on the model of rurality, a rural typology is created at the regional level, which records nine statistically significant groups of rural regions in the EU, including Serbia. Cluster 2 includes most of the analyzed territory of Serbia (about 70%), and this group is the most rural, given the negative characteristics of this type of rural area. These results are devastating, and the creators of Serbia's rural policy must consider the multidimensional nature of rural areas when defining future strategies.

Keywords: rural; typology; European integration; EU; Serbia

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1. Introduction

Serbia has a relatively high level of rurality, with rural areas often suffering from backwardness in terms of income levels, low population density, insufficient infrastructure, still strong dependence on agriculture, high unemployment, and migration of young, qualified people. With the first intergovernmental conference (IGCs) between the European Union (EU) and Serbia in January 2014, the process of negotiation for membership began. The introduction of Serbia as a candidate country for EU membership marked an essential step in European integration in the Western Balkans (WB). The accession of WB countries/territories to the EU has gained increasing political attention in recent years [1], and it is necessary to implement extensive reforms, align with European standards and rules, and build institutional capacities to achieve the required level of convergence with the EU. During the preparations for EU membership and the adoption of EU structural policies, Serbia's rural problems gained increasing political interest.

Within the framework of the European integration process, the creation of a typology of rural areas in Serbia (relative to the EU) becomes a key element of understanding and addressing the specific challenges and needs of rural communities. A comparative analysis of rural areas in the EU itself enables a deeper insight into the differences and similarities between Serbia and already existing EU members in the context of rural development. Rural typology can be used to study the panorama of heterogeneity and changes in rural areas [2], taking into account that socio-economic developments in rural areas are characterized by diversity rather than evolving along 'parallel linear paths' [3,4]. Through the rural typology of Serbia and the EU, researchers and decision makers can better identify different patterns and characteristics of rural areas in Serbia, as well as see how they differ or overlap with

EU areas. This paper aims to identify the significant heterogeneity of socio-economic rural development in the EU and Serbia, elaborating the main problem related to the scale and character of rural variety. The research focuses on answering the following questions: What socio-economic types of rural areas are found in the EU and Serbia and how are they spatially distributed? Which rural areas of the EU are benchmarks for further developing rural areas of Serbia? What are the specific factors that contribute to the heterogeneity of rural types?

The construction of rural typologies involves a synthesis of the rural context and recognition of its key features. Rural typologies consist of relatively homogenous units created for the specific research (e.g., data comparisons, scenario building, and analysis of trends and patterns) and policy objectives (e.g., distribution of rural development and cohesion funds) [5]. The point is to divide rural areas into several sets that are very similar internally, whereas the differences between the sets are substantial [6]. Typologies created in this way are suitable for understanding the current situation and determining the future guidelines for rural development, whereby the results of the analysis can be used as a basis for defining instruments of rural policy, i.e., increasing their effectiveness in practice [7]. Rural typologies, which are defined following an inductive approach, are widely accepted as appropriate [8]. In this research, a rural typology is created by using multivariate statistical analysis techniques on core indicators, which are determined based on the typology literature and available data.

In past decades, the creation of rural typologies, based on different indicators that respect a multidimensional approach, gained importance due to the turn of rural policy. In the period of the 1950s and 1960s, due to the still crucial role of agriculture, the concept of rurality and the identification and classification of rural areas were mainly based on sectoral variables (agriculture) [9]. In the 1990s, a new concept of rurality emerged, within which the territorial dimension became relevant. Moving from a sectoral to a territorial approach, rural areas are presented as multidimensional and complex. Diversity within rural regions is now an integral part of policy making, with a new focus on 'territory, not sectors' [10]. The new paradigm of rural development is focused on neo-endogenous development [11], that is, it respects the complex nature of rural areas, as well as a multi-sectoral approach to the analysis of these areas. The multidimensional approach is based on the use of different indicators that describe rural areas, e.g., population, economy, land use, accessibility to services, etc. [7].

Unlike international typologies, which include simple criteria (population density, number of inhabitants) [12,13], in scientific research there is a trend of creating rural typologies based on socio-economic variables to capture different aspects of rurality. Their identification criteria differ according to their geographical (territorial, regional, national, continental/supranational) scope, their spatial aspect (from NUTS 1 to local administrative units (LAU), according to the Nomenclature of Statistical Territorial Units [12]), the number of spatial units in the study, the origin of the variables, the complexity of the indicators used, the period covered by the analysis, and the methodological structure [6]. Also, rural typologies are created for different purposes, such as supporting both rural and regional policies, more detailed spatial planning and differentiating areas according to different degrees of rurality [14]. For instance, Zasada et al. [15] developed a typology of the EU27 regions using factor and cluster analysis that featured similar rural development policy (RDP) support. The approach considered six funding categories and emphasized the differentiation between policy measures for investment in territorial capital and measures for investment in capacity-building to enhance the region's ability to effectively use these assets [16]. One of the most prominent attempts to define a rural typology at the local level is Cloke's index of rurality in England and Wales. Cloke [17], based on similar characteristics, identified four categories of rural areas (extreme rural, intermediate rural, intermediate non-rural, extreme non-rural area), which represented a shift in the creation of rural typologies. In his research, Cloke stated the importance of creating an index of rurality, i.e., defining the degree of rurality of observation units, primarily because

identifying specific types with similar problems enables the standardization of solutions for a given type.

Local rural typologies, which rely on the LAU level or lower, are often limited for research within one country [6–8,18–22] due to the unavailability of data for comparative analysis of several countries. Accordingly, typologies at the regional level (NUTS 2/NUTS 3) enable a more detailed analysis of the heterogeneity of rural areas between different countries. Pinto-Correia et al. [23] created a typology of European regions using the Nomenclature Territorial Unit NUTS 2, where the authors believed that, although it is questionable whether classifications at this European level can detect changes in rural areas across the EU, such a typology has the ability to raise policy makers' awareness of new dimensions of rural areas and the importance of the territorial approach in creating strategies and making decisions. Camaioni et al. [9] created a typology of EU rural regions at the NUTS 3 level, considering that the NUTS 3 level allows a detailed representation of the EU rural space. Given that the Nomenclature of Statistical Territorial Units has also been defined for EU candidate countries (Serbia, North Macedonia, Albania, Montenegro, and Turkey) [24], the rural typology in this research includes the NUTS 3 regions of Serbia and the EU. This level was determined primarily due to the availability of data when comparing candidate countries for membership and EU members.

This paper is divided into several segments. After the introduction, the theoretical overview enables a more detailed analysis of Serbia's rural policy during the EU integration process. A methodological segment follows this, and then the results and discussion. Finally, we present concluding considerations and recommendations for future development strategies.

2. Policy Review: Support for the Rural Development of Serbia in the Process of European Integration

Serbia is in the phase of fulfilling the conditions necessary for joining the EU, where they apply to all spheres of the economy and society, including agriculture. Issues in the segment of agriculture, rural development, and related sectors (fisheries, food safety) represent about 40% of the total legal framework that must be harmonized with the EU [25], which indicates that meeting the conditions in the field of agriculture and rural development is one of the most complex and demanding segments of negotiations for EU membership. On the day of accession, an acceding country must be able to implement the Common Agricultural Policy (CAP); candidate countries need to be able to implement the CAP policy cycle, which consists of planning, disbursement of support payments, monitoring, evaluation, and contribution to the formulation of the CAP support system [1].

In earlier periods, rural areas and their development in Serbia's strategic plans were often marginalized as part of other policies, most often regional policies. For decades, regional development disparities have become pronounced, including the fact that funds directed to villages have been modest. Support measures defined for rural areas, following the example of the CAP, have gained greater importance in recent national strategic documents. The strengthening of the second pillar of support emerged as an important issue within the CAP reforms, with the redistribution of funds from the first to the second pillar being the focus of this European policy [25]. Support for rural development in Serbia as a separate pillar of support was only defined by the Law on Incentives in Agriculture and Rural Areas in 2013. Achieving more excellent compatibility with the EU model implies a more correct distribution of the agricultural budget of Serbia, primarily by strengthening support for the second pillar, namely rural development. Namely, within the Strategy of Agriculture and Rural Development of the Republic of Serbia, certain periods were defined (from 2014–2016, 2017–2020, after 2020 and after EU accession), within which projections of the distribution of Serbia's agricultural budget were made (Figure 1) [26].

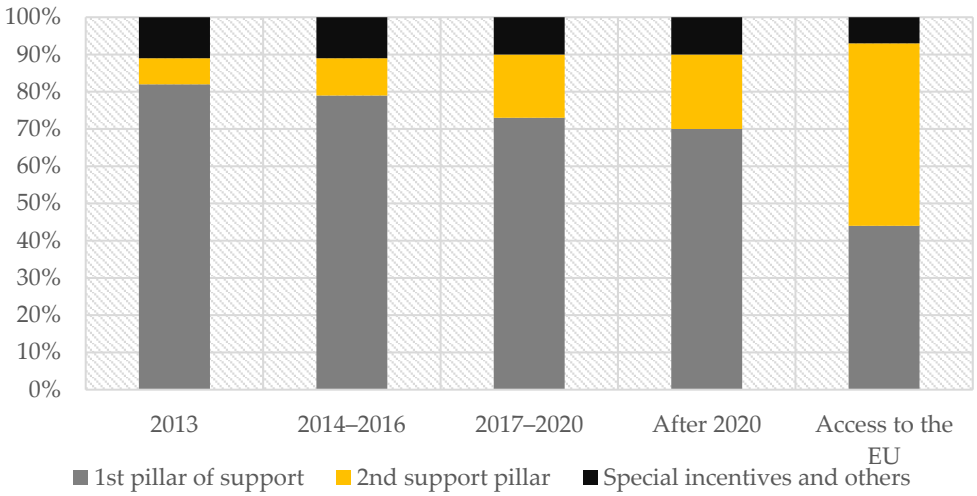

Figure 1. Projection of the structure of the agricultural budget of Serbia for the period from 2013 until EU accession. Source: The Strategy of Agriculture and Rural Development of the Republic of Serbia 2014–2024.

The goal of the agricultural policy of Serbia in the future should be to increase the share of funds for rural development, which should have a dominant share of the agricultural budget after EU accession. These funds should provide non-competitive, small agricultural holdings with some support through diversification of activities to survive. Budgetary incentives for rural development (according to the scope, structure, and implementation) are one of the main challenges for agricultural policy makers in meeting EU integrations [25]. According to the latest Annual Report of the European Commission for Serbia, for Chapter 11—Agriculture and Rural Development, it is defined that Serbia has reached a certain level of preparedness in the field of agriculture and rural development, especially through the adoption of amendments to the Law on Agriculture in November 2021, the improved efficiency of processing the Instrument for Pre-accession Assistance for Rural Development (IPARD) applications, as well as timely delivery of the IPARD III program for the period 2021–2027 [27]. One of the most important fields of agricultural policy in the process of EU accession is the implementation of the IPARD, with the aim of preparing candidate countries for the effective implementation of programs within the European Agricultural Fund for Rural Development (EAFRD) after EU accession. The IPARD is the forerunner of the Special Accession Program for Agriculture and Rural Development (SAPARD), which was used by CEE countries as a mechanism for adapting the agricultural sector and rural development to the then EU members [28]. Given that budget expenditures in Serbia for the second pillar of support, i.e., for rural development, are still at a low level, the use of IPARD funds is extremely important for solving the key problems of agriculture and rural development. However, in its reports, the European Commission most often states that the most common reasons for underutilization of IPARD funds are the lack of preparation of local governments, both in terms of infrastructure and human resources (primarily advisory services) [27].

Official strategic and spatial planning documents treat rural areas of Serbia as unique, not considering their heterogeneity, which leads to negative consequences in underdeveloped rural areas [29]. National rural development strategies cannot cover the pronounced differences between rural areas, so it is necessary to look at the regional as well as local heterogeneities of these areas. Rural typologies, defined at the regional or local level, significantly contribute to a better understanding of the socio-economic situation in rural areas. Also, identifying benchmarks for developing rural areas of Serbia is extremely important to create future rural strategies better. Comprehensive research in this paper gains importance considering that it is necessary to adopt a new Strategy for Agriculture and Rural Development of the Republic of Serbia, given that the current Strategy is dated until 2024 [25]. Also,

for Serbia, which is currently a candidate for EU membership, the experiences of the New Member States (NMS), i.e., Central and Eastern Europe (CEE), in pre-accession negotiations with the EU are a valuable benchmark for future integration processes [24]. The reason for this is that the historical legacy of the centrally planned economy is the same for the CEE countries and Serbia. The significance of this research is reflected in the analysis of rural areas of Serbia in comparison with EU countries, which will be carried out at the regional level, which represents an improvement of previous knowledge about the achieved level of development of rural areas of Serbia and their readiness to respond to future challenges due to the current process of European integration. Empirical research was formulated in accordance with existing methods confirmed in the international literature, which allows for achieving a higher level of understanding of the heterogeneity of rural areas of Serbia and the prominent trends that are present in these areas. National policies are increasingly oriented toward reducing growing rural disparities, whereby areas affected by specific development problems, remote and poorly developed areas, have a significant position. The research results will represent the empirical basis necessary for developing competent development strategies at the local, regional, and national levels.

3. Materials and Methods

This research created a rural typology using multivariate statistical techniques, i.e., a combination of factor analysis and cluster analysis. These methods of creating a rural typology are the most prevalent in academic circles because they allow the management of a more significant number of variables while identifying the most relevant factors for the existing spatial patterns [14]. Briefly, the methodological steps include the following steps: the application of factor analysis to define the factors, that is, the model of rurality; derivation of the factor score for each factor for each unit of observation; starting a cluster analysis based on the results of the factor analysis; defining different types of rural areas. Standardization of the feature values is necessary before applying multivariate techniques and enables comparison of feature variations from other numerical series, which are expressed in different units of measurement. We used data standardization via Z-transformation. After the R type of factor analysis was chosen, Kaiser–Meyer–Olkin (KMO) and Bartlett's tests were performed, representing the prerequisites for applying factor analysis. Principal component analysis was chosen as the factor extraction method, while Kaiser's criterion was used to determine the number of factors [30]. Also, to maximize the factor load variances, VARIMAX factor rotation with Kaiser normalization was used. Factor loadings represent the correlation between the source variables and factors, and they are the key to understanding the nature of a particular factor, with factor loadings in the range of ± 0.50 being considered significant [31]. The results of the factor analysis, i.e., the factor scores, were calculated for all units of observation and for all factors.

Factor analysis provides the basis for creating a new set of variables that include the character and nature of the original variable in the form of factor scores. In this study, the results of the factor analysis are the input data for the cluster analysis. The aim of cluster analysis is to reveal patterns of behavior of observation units, and a non-hierarchical cluster algorithm or K-means is used. Also, the distance measure used in cluster analysis, which is commonly used in the K-means algorithm, is the Euclidean distance. To check the validity of the results, one-way ANOVA with a post hoc test was run, according to Hair et al. [31], i.e., the independent variable is the membership in the cluster and the dependent variables are the variables on the basis of which the cluster analysis was performed. The cluster analysis results are shown on a map to follow the spatial arrangement of the clusters. The Statistical Package for the Social Sciences—SPSS Statistics 20.0 was used for the research.

Before applying multivariate techniques, it is necessary to define the indicators relevant for describing rural areas and determine the territorial level of observation. The selection of indicators and territorial level rests primarily on relevant literature sources, which analyze rural typologies at the regional level, but also on available international databases, which include regional data for EU countries (considering the period of the study, the United Kingdom is included) as well as for a country that is a candidate for membership, i.e., in this case, Serbia. Following the Nomenclature of Statistical Territorial Units, the selected territorial level is NUTS 3 for EU countries (the exception is Germany, for which the NUTS 2 level was used) and Serbia. Grouping territories by type at the regional level (NUTS 2 or 3) significantly contributes to understanding common patterns of regional development. Also, the rural typology created within this research is based on the defined TERCET regulation of the EU at the regional level, i.e., the urban–rural typology, given that the current typology includes all the candidate countries for EU membership [32]. That is, in this research, the units of observation are predominantly rural and intermediate regions ('non-urban' regions [33]) according to the TERCET regulation. The total number of units included in the analysis is 691, of which 667 are at the NUTS 3 level and 24 at the NUTS 2 level. Certain NUTS 3 areas were excluded from the analysis due to the unavailability of data or the inadequate geographical location of Europe, which is irrelevant to the analysis in this research. According to the TERCET, the analysis includes 24 regions of Serbia, defined as predominantly rural or intermediate. Table A1 shows demographic and socio-economic data by region of Serbia for a more detailed introduction to the rural regions of Serbia. The period of the analysis represents the period from 2012, when Serbia became a candidate for EU membership, to 2018. The database used in the research is Eurostat, which publishes data at the national, regional, or lower level for all the EU countries, the European Free Trade Association—EFTA and candidates for EU membership. Data from the Census of Agriculture in the countries of the European Union and Serbia were used for the variables related to the structure of agriculture, that is, agricultural holdings and land use.

Twelve variables are included in the analysis, which fall into four basic groups of indicators (demography, economy, agricultural sector, and environment), to describe the state of the rural area.

Demographics:

- Aging coefficient (%)
- Coefficient of total dependence (%)
- Rate of natural increase (‰)
- Population density (inhabitants/km^2)

Economy:

- Share of employees in the primary sector (%)
- GDP per capita (PPS per capita)
- Share of the primary sector in gross value added—GVA (%)
- Total labor productivity (EUR per employee)
- Labor productivity in the primary sector (EUR per employee)

Agriculture:

- Average size of agricultural farms (hectare per farm)
- Resource structure of agriculture (hectares per annual work unit—AWU)

Environment:

- Share of forests in the total area (%)

In this research, the focus is on the results of the cluster analysis. The model of rurality within the factor analysis was presented in the research by Jurjević et al. [34]. The factor scores of that model represent the input variables of the cluster analysis, and additional statistical tests were conducted to verify the obtained results of the rural typology.

4. Results

4.1. Results of the Cluster Analysis—Rural Typology at the Regional Level

The regional aspect is gaining more and more importance in the EU, primarily through the EU Cohesion Policy, i.e., strengthening the economic, social, and territorial cohesion of the regions of the EU. In addition to this policy, other policies significantly impact the development of regions of the EU, namely the EU Rural Development Policy, which indicates the practical importance of creating a rural typology at the regional level. Now, there is no rural typology in the literature that includes Serbia and the EU countries at a lower level than the national one, and when creating the typology, several different characteristics of rural areas are analyzed. Considering the current processes of European integration, the rural typology at the regional level could indicate specific spatial patterns of development of rural areas of Serbia, that is, a candidate country for EU membership, concerning EU member states.

Given that factor analysis is a research technique, it is necessary to reduce the number of variables to those that enable the stable structure of the rurality model, that is, to remove those variables that are not correlated with other variables at an adequate degree of connection as well as those variables that are associated with an excessive number of different variables and cannot belong to one factor entirely. A fair factor structure is confirmed using statistical tests, whereby the variables that make up the factors must correspond to the theoretical assumptions of the created rural typology; that is, they must indicate the essential segments of rurality to identify the critical factors for rural development.

The results of the KMO test as a measure of sample adequacy (0.703) are moderately good according to Kaiser's classification, basically acceptable considering that the minimum requirement is that the values be above 0.5. Also, Bartlett's test of sphericity is statistically significant. The results of these two tests indicate the adequacy of factor analysis in this research. Four components with eigenvalues greater than 1 describe 76.170% of the total variation, which is adequate. The unrotated results of the factor analysis are challenging to interpret, so the next step involves rotating the factors to identify the model of rurality. Factor loadings within the rurality model indicate a certain variable's attachment to a given factor. Factor loadings greater than ±0.50 are accepted, and the rotation method used is VARIMAX with Kaiser normalization (Table 1).

Table 1. Defined rurality model at the NUTS 3 level: Serbia and EU.

Variable	Factor 1	Factor 2	Factor 3	Factor 4
Share of employees in the primary sector	**−0.819**	−0.228	0.002	−0.022
GDP per capita	**0.872**	0.128	0.040	0.133
Share of primary sector in GVA	**−0.788**	−0.101	0.210	−0.008
Total labor productivity	**0.861**	0.285	0.223	0.069
Labor productivity in the primary sector	**0.692**	0.278	0.403	−0.107
Average farm size	0.224	**0.867**	0.053	−0.145
Resource structure of agriculture	0.287	**0.892**	0.110	0.038
Aging coefficient	0.001	0.065	**0.820**	0.076
Coefficient of total dependence	0.123	0.141	**0.680**	−0.043
Natural increase rate	0.464	0.250	**−0.623**	−0.068
Population density	0.397	−0.385	−0.160	**−0.576**
Share of forests in the total area	0.138	−0.132	0.005	**0.934**

Factor extraction method: Principal component analysis. Factor rotation method: VARIMAX with Kaiser normalization. Rotation achieved after 5 iterations. Source: The authors' calculations, model published in research by Jurjević et al. [34], with a focus only on the second factor.

The first factor represents the level of economic development, that is, the economic factor of the development of rural areas. The positive signs in front of the variables gross domestic product per capita, total labor productivity of all sectors, and labor productivity in the primary sector are indicators of the region's overall economic development. The calculated factor scores for the first factor will indicate the level of economic development,

that is, well-being, throughout the EU region and Serbia, whereby the best-rated observation units will show the best performance from the economics aspect. The second factor is defined by two variables: the farm's average size and agriculture's resource structure. This factor describes the structural characteristics of agriculture of a specific observation unit. Both variables have a positive sign; a larger average farm size is associated with a more favorable resource structure of agriculture. The third factor includes three variables, that is, it describes the demographic structure of the region's population, that is, the demographic aging of the population and natural movement. The last factor includes two variables: population density and the share of forests in the total land area. Considering the variables, this factor is defined as forest cover and population, and it best describes the spatial characteristics of the region.

The previous analysis's factor scores represent the cluster analysis's input variables. A non-hierarchical method, K-means, is used, whereby observation units move from one group to another until cluster homogeneity is achieved. Cluster homogeneity, with a defined number of 9 groups, is achieved after 16 iterations. The next step in creating a rural typology involves checking the F statistic within the analysis of variance to indicate the influence of factors in the differentiation of clusters. All four factors contribute to the cluster formation ($p \leq 0.05$), with the first factor having the most significant influence on the F statistic (Table 2).

Table 2. Analysis of Variance.

Factor Scores	Cluster		Error		F	Sig. (*p*)
	Mean Square	df	Mean Square	df		
Factor 1	62.788	8	0.276	683	227.272	0.000
Factor 2	61.736	8	0.289	683	213.915	0.000
Factor 3	53.223	8	0.388	683	137.060	0.000
Factor 4	61.993	8	0.286	683	217.067	0.000

Source: The authors' calculations.

The distribution of observation units i.e., 'non-urban' NUTS 3 areas in the EU and Serbia, includes the following number of units:

- Cluster 1—63 (9.1% of the total number)
- Cluster 2—114 (16.5% of the total number)
- Cluster 3—75 (10.8% of the total number)
- Cluster 4—24 (3.5% of the total number)
- Cluster 5—101 (14.6% of the total number)
- Cluster 6—109 (9.1% of the total number)
- Cluster 7—43 (6.2% of the total number)
- Cluster 8—87 (12.6% of the total number)
- Cluster 9—75 (10.8% of the total number)

The distribution of NUTS 3 areas in the EU and Serbia is somewhat balanced between the nine groups. The exception is Cluster 4, which includes 3.5% of the total number of observation units, that is, it includes a specific group of rural areas of only 24 units. The largest number of units belongs to Cluster 2, i.e., 16.5% of the total number of units. Given that the number of clusters is determined by different characteristics that define each group, this division is acceptable for the rural typology.

Figure 2 shows each cluster's average factor scores for each defined factor within the rurality model (Table 1). Also, Figure 2 compares the clusters concerning the defined factors of rurality: the level of economic development, the structural characteristics of agriculture, the demographic structure, and the spatial characteristics of the region. When interpreting, it is necessary to pay attention to the nature of the factors that describe the proposed groups. Looking at the first factor, that is, the level of economic development, out of nine clusters, six clusters have positive values for this factor, that is, positive economic

development, while three clusters are characterized by unfavorable economic performance. From the aspect of the second factor, three clusters have positive values, that is, an adequate structure of farms and resource structure of agriculture, while the observation units in six clusters show less favorable structural performance of agriculture. Looking at the third factor, the clusters are divided into those with a favorable demographic (five clusters) and unfavorable demographic structure (four clusters). Considering the last factor, i.e., the spatial characteristics of the region, three clusters have positive values, i.e., they are characterized by a higher proportion of forests in the land structure and lower population density. In comparison, six clusters have negative values for this factor and are characterized by a high population and less wooded areas. A detailed description of the cluster is given in the next part.

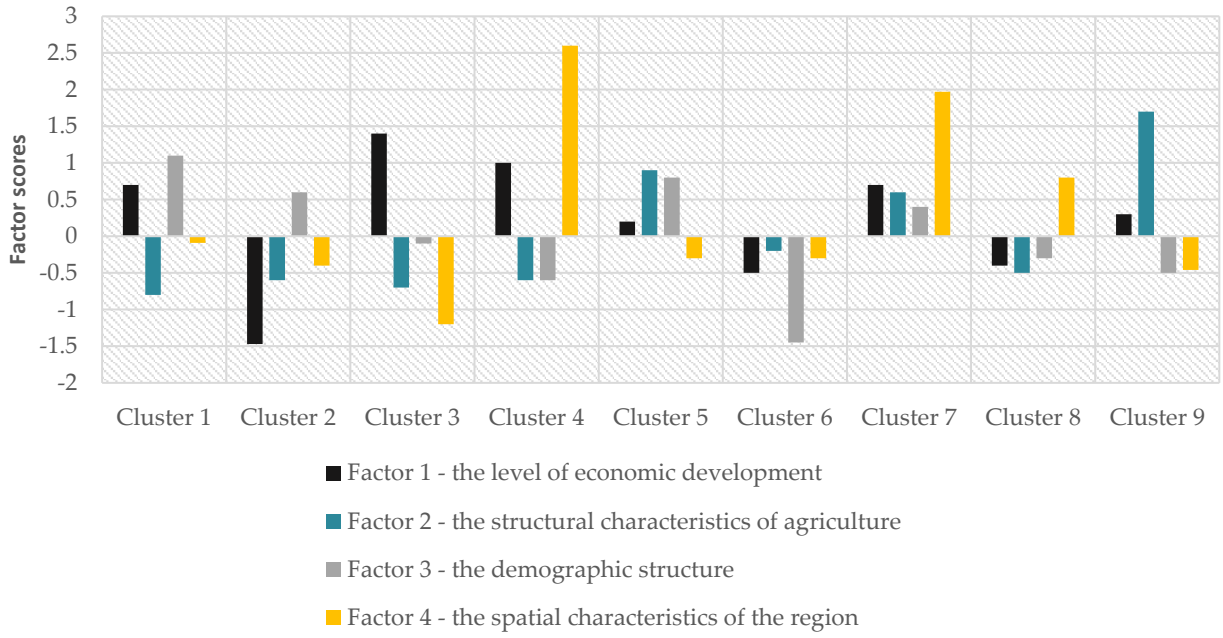

Figure 2. Cluster characteristics in relation to the defined factors.

The characteristics of each group are specific to the same, whereby the layout of the cluster is visualized on the map (Figure 3) to follow the territorial aspect. However, to confirm this cluster structure, it is necessary to approach additional analysis with the application of one-way ANOVA with a post hoc test. The procedure proposed by Yockey [35] was used, and the Welch procedure was followed (Table 3).

Table 3. Welch procedure.

Factor Scores	Test Statistics	df1	df2	Sig. (*p*)
Factor 1 Welch	215.299	8	219.678	0.000
Factor 2 Welch	157.010	8	206.827	0.000
Factor 3 Welch	168.174	8	213.359	0.000
Factor 4 Welch	133.395	8	208.869	0.000

Source: The authors' calculations.

The results of the Welch procedure are statistically significant (Table 3), whereby the Games–Howell post hoc test was chosen, which is used to compare all the possible combinations of group differences. The results of the Games–Howell test confirm the statistical significance between the different clusters in relation to the four factors.

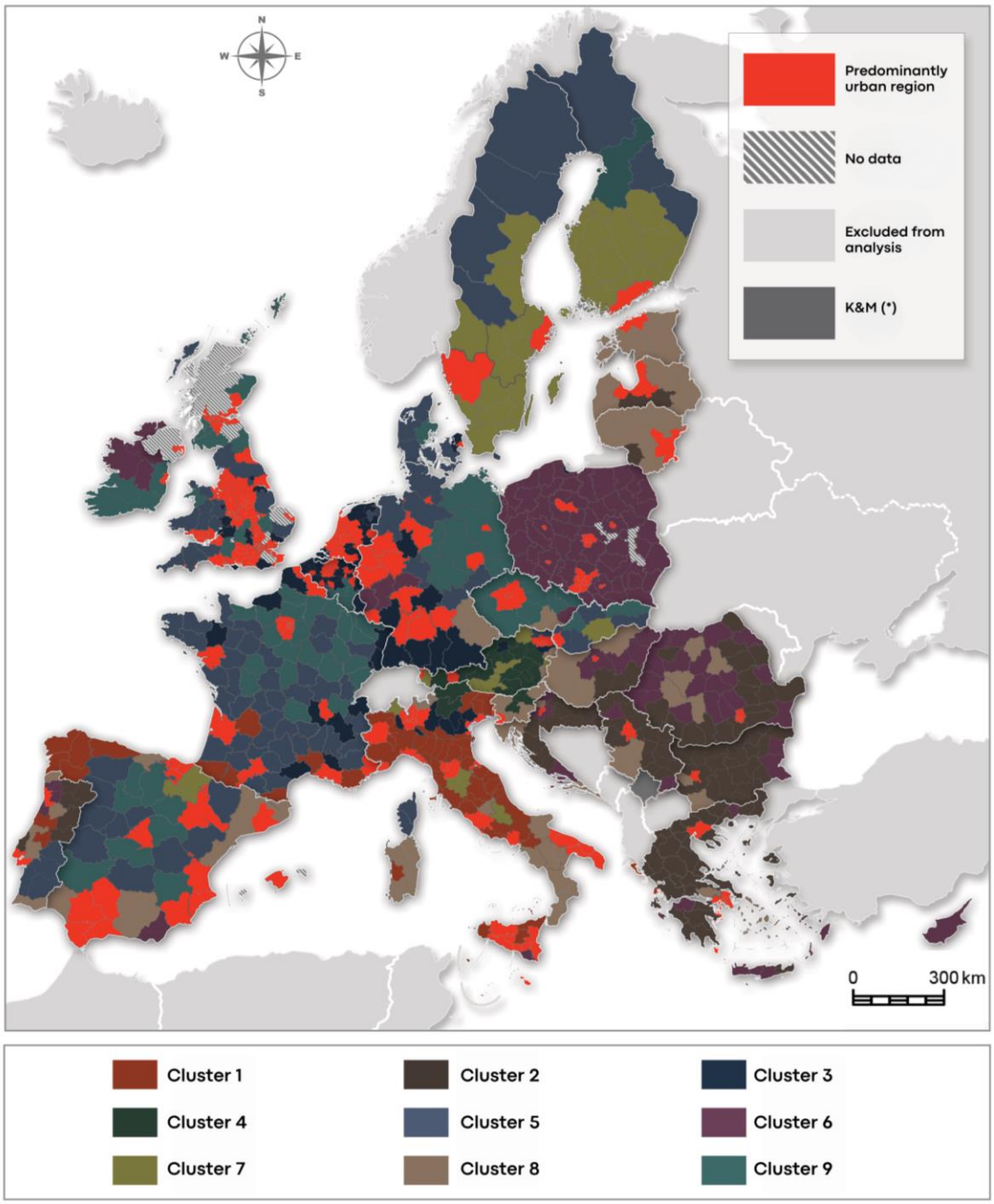

Figure 3. Territorial representation of the rural typology throughout the EU, including Serbia, at the NUTS 3 level. Note: * The specific status of Kosovo and Metohija (K&M) excludes it from the analysis.

4.2. Characteristics of Rural Regions

Following the characteristics and geographical location of each cluster, adequate cluster names were defined. The focus of the research is primarily on the position of Serbia concerning the EU countries, where a significant role is played by identifying similar NUTS 3 units within the EU member states. For easier monitoring of the spatial arrangement of clusters, Figure A2 is provided in the Appendix A.

1. Italian–Mediterranean type: Economically developed rural areas, with an 'old' population and a southern model of agriculture.

This cluster includes 9.1% of the NUTS 3 regions from the total number of regions included in the analysis. It covers the territory of five countries, all in the Mediterranean area. The dominant representative is Italy, with 59.1% of the total territory of Cluster 1. What is characteristic of this cluster and sets it apart from the other eight is that it has the most unfavorable demographic structure, i.e., the trend of population aging and negative natural growth is expressed in this group. The share of older people in the total population is 25.8% on average, while the coefficient of total dependency is 58.1% on average. The average rate of natural increase is −5.08‰. On the other hand, this is a cluster with a positively rated economic performance. The average GDP per capita is 24,513 PSS/inhabitant, while the share of employees in the primary sector is 5.28% on average, and the same contributes 3.55% to the total gross added value, which indicates the importance of the secondary and tertiary sectors to the overall economy. The characteristics of Cluster 1 in terms of the structure of agricultural holdings and the resource structure indicate that this is a predominantly southern model of agriculture. According to Jurjević et al. [34], EU agricultural policy makers officially recognized two models of European agriculture—one southern, one northern—and the main feature of the southern model is small farms. Namely, the average size of agricultural holdings in Cluster 1 is 8.3 hectares per holding, with 9.1 hectares per annual unit of work in agriculture. Economically strong regions, which rely on the secondary and tertiary sectors, with average small agricultural holdings, are regions that base agricultural development on connecting with the non-agricultural sector through diversification of activities or through employment in the non-agricultural sector in addition to farming. In Italy, about 25% of farmers are employed in the non-agricultural sector in addition to farming on the farm, whereby the income from the non-agricultural sector contributes about EUR 18 billion to Italian agriculture, i.e., the income from the non-agricultural sector is invested in the agricultural economy [36]. Cluster 1 is the group that stands out as a representative of the southern model of agriculture, considering the factor scores for the second factor (Figure 2).

2. Balkan type: Dominantly agricultural type, economically underdeveloped rural areas, with unfavorable demographic trends.

This cluster includes 16.5% of the NUTS 3 regions from the total number of regions included in the analysis. It covers the territory of nine countries, with most of the regions concentrated on the Balkan Peninsula. Dominant representatives are Greece, Bulgaria, Croatia, and Serbia, which have more than 50% of the total territory under this type (a detailed territorial representation of Serbia is given in Appendix A—Figure A1). The characteristics of the second cluster are the unfavorable economic situation, that is, the low level of economic development, which implies a high dependence on the primary sector and lower levels of gross domestic product per capita, as well as a lower level of productivity of the economy and the primary sector. From the aspect of demography, Cluster 2 is characterized by an unfavorable demographic structure, with a larger share of the elderly in the total population and a negative natural increase. Looking at the structural characteristics of agriculture, these areas are characterized by small farms and an unfavorable resource structure. According to the first three factors, this group of rural areas is a group for which all the development characteristics are negatively evaluated. Looking at Serbia, 19 regions belong to this type of rural area, which is a devastating result, given that the units of this group lag behind other regions in terms of development. The most unfavorable economic structure is the specific characteristic that sets this cluster apart from the other eight. The average GDP per capita is 11,505 PSS/inhabitant, while the minimum value of the GDP per capita is recorded in the *Podunavski* region of Serbia. The share of the primary sector in employment is 27.08% on average, while it contributes 11.23% to the total gross added value, which indicates a high dependence on the primary sector; that is, it means dominant agricultural regions.

3. Urbanized type: Economically developed rural areas, with little importance of the primary sector in the overall economy.

This cluster includes 10.9% of the NUTS 3 regions from the total number of regions included in the analysis. It covers the territory of 10 countries, with the dominant representatives of this type of country being the Benelux (Luxembourg as one region belongs to this cluster, Belgium with 44.3% of the total territory, and the Netherlands with 35.7% of the entire territory). In addition to the Benelux countries, this cluster also extends to northern Italy, France, Austria, Germany, Denmark, and Great Britain, i.e., it corresponds to areas of Europe that are highly urbanized and industrially developed, the so-called *Blue Banana*, the metropolitan core of Europe [37]. According to the defined characteristics of this cluster, it is notable that this group has the best-rated economic performance and the highest population density (average of 310 inhabitants per km^2). This is the group of regions with the smallest share of the primary sector in employment (average 2.5%) and gross added value (1.9%). The GDP per capita, labor productivity of the economy and the primary sector are at the highest level of all the analyzed units of observation. As for demographics, they are characterized by a favorable demographic structure and demographic trends.

4. Alpine type: Rural areas with favorable socio-economic performance, multifunctional and organic agriculture.

Cluster 4 represents a specific group of 24 observation units, which are concentrated on the territory of three countries: Austria, Slovenia, and Italy. Over 60% of the analyzed territory of Austria belongs to this type of rural area, with this country being the dominant representative of this group. This group has many forests in the overall soil structure, given that these are mountainous regions. However, regardless of the geographical position, this group of regions has positive economic performance and a favorable demographic structure, which is much more challenging to achieve for hilly and mountainous regions. The positive effects of economic development, i.e., the dominant share of the secondary and tertiary sectors in the overall economy, spill over to the mountainous areas, where the primary sector is the most represented. The high levels of GDP per capita, labor productivity of the economy and the primary sector indicate the well-rated economic performance of these areas. In highly developed countries, mountain regions are an important tourist destination. In Europe, primarily in the area of the Alps, with over 540 million overnight stays per year, mountain agricultural farms have a significant inflow of funds from tourism [38]. The agricultural structure in this group is characterized by small and medium agricultural holdings, with an average size of 16.4 hectares per holding. Hovorka [39] points to a turnaround in Austrian agricultural policy after EU accession, with 81% of Austria's areas classified as less favored areas (LFA). Namely, the agricultural policy turned toward measures of direct support to mountain areas to strengthen the competitiveness of these areas through models of multifunctionality, forest conservation, sustainable management of alpine pastures and organic production. In this way, these areas, in addition to their primary role, contribute significantly to society with multifunctional activities.

5. Danish type: Economically developed type of rural area, with an unfavorable demographic structure and a northern model of agriculture.

This cluster includes 14.6% of the NUTS 3 regions from the total number of regions included in the analysis. It covers the territory of 12 countries, most of which are 'old' EU members. According to the criterion of length of membership of the EU, the only country that deviates is Slovakia, which became a member of the EU in 2004. The dominant representative is Denmark, with 80% of the total territory falling under this cluster. Concerning economic factors, this is a group of positively rated regions, that is, a group of economically developed areas. The share of employees in the primary sector is, on average, 6.8%, while it contributes to the creation of GVA with 4.48%. From the aspect of the structural characteristics of agriculture, this group belongs to the northern European model, with an average farm size of 51.5 hectares and 39.2 hectares per AWU in agriculture. As a dominant representative of this type, Denmark is distinguished by its specificities, primarily from agriculture. The Danish agriculture system is one of the most modern in the

EU, with investment in innovation being an overarching goal of Danish agriculture. The Danish rural development program, which was adopted by the European Commission for the period 2014 to 2020, indicates the importance of innovations in agriculture, whereby special priority is given to investments that contribute to the goals of environmental protection, intending to increase the competitiveness of the agricultural and food sectors and to balanced territorial development [40].

6. Polish type: Dominantly agricultural type, economically undeveloped rural areas, with a positive natural population movement.

This cluster includes 15.8% of the NUTS 3 regions from the total number of regions included in the analysis. It covers the territory of 14 countries, with Poland being the dominant representative, with most of the territory belonging to this type (91.6%). What characterizes this group compared to other clusters is the most favorable demographic structure, i.e., this is the group with the smallest share of older people, on average 15.4%, a dependency ratio of 44.5% and a positive natural increase of 0.66‰. At the same time, in certain regions, this rate goes up to 8‰ (regions of Ireland). When looking at the cluster structure, it is noticeable that the characteristics of this cluster and Cluster 2 are similar in relation to the first, second and fourth factors, that is, if the influence of natural demographic trends was excluded, these two clusters would represent one.

7. Forest type: Rural areas with a favorable economic situation but unfavorable natural demographic trends and low population density.

This cluster includes 6.2% of the NUTS 3 regions from the total number of regions included in the analysis. It covers the territory of six countries, i.e., predominantly hilly and mountainous territories rich in natural resources such as forests. The dominant representatives are the Scandinavian countries: Sweden and Finland. Unlike Cluster 4, which is also a mountainous type of rural area, this type is characterized by unfavorable demographic trends. This group is represented by predominantly wooded areas, with a low population density and a favorable economic situation. From the aspect of economic factors, this group is positively evaluated, with the minor importance of the primary sector in the overall economy, with a share of the primary sector in the employment of an average of 5.7% and 3.5% in the creation of GVA. Although these are a group of forested regions, the representation of the secondary and tertiary sectors enables the diversification of activities in rural areas.

8. Baltic type: Forested areas, with a unfavorable economic situation but favorable natural demographic trends.

This cluster includes 12.6% of the NUTS 3 regions from the total number of regions included in the analysis. It extends over the territory of 16 countries, i.e., in territories that are rich in natural resources such as forests, with the fact that these are areas that, unlike Clusters 4 and 7, are characterized by an unfavorable economic situation, i.e., areas in which the primary sector has a significant role. The dominant representatives are the Baltic countries, Estonia, Lithuania, and Latvia, whose entire analyzed territory is within this cluster. The characteristic of this group is a lower level of economic development, i.e., greater dependence on the primary sector and the unfavorable structural characteristics of agriculture. The demographic structure is positively assessed. Cluster 8 is similar in its characteristics to Cluster 6, except in the segment of spatial characteristics. Namely, this group is characterized by a large proportion of forests in the total land and a low population density. Four regions of Serbia belong to this cluster: *Šumadijski* region, *Moravski* region, *Zlatiborski* region and *Raški* region. This is the third cluster out of nine that has been negatively evaluated in relation to the economic factor. The share of employees in the primary sector is 11.7% and in GVA, 5.6%. The average GDP per capita is EUR 17,456, with lower levels of labor productivity in the overall economy and primary sector.

9. Central European type: Economically developed type of rural area, dominant representatives of the northern model of agriculture.

This cluster includes 10.8% of the NUTS 3 regions from the total number of regions included in the analysis. It covers the territory of 10 countries and is characterized by the dominant northern model of agriculture in the EU. This group of regions represents the best-rated group regarding the structural characteristics of agriculture (Figure 2), i.e., the largest average farm size and the most favorable resource structure sets this cluster apart from the others. From the aspect of the economic factor, this group has a favorable economic situation as well as a well-balanceddemographic structure. The representatives of this group are the regions of France, Germany, Belgium, Great Britain, and the Czech Republic, where they are concentrated around large urban centers, that is, capital cities (Paris, Berlin, London, Prague, etc.). The average size of the agricultural holding is about 90 hectares, while the resource structure is 52 hectares per employee. Different factors in different countries determine this type of agricultural structure. For example, agriculture in Great Britain is based on a diverse farming system, namely large estates dating back to the 18th century. In the central part of Spain, large, modernized farms dominate, which is the opposite of the regions of the Iberian Peninsula, where small, mostly family farms are present [41]. Also, the area of the former East Germany and more than 60% of the territory of the Czech Republic belong to this cluster. Large agricultural farms were created on the territory of these countries during the period of the centrally planned economy. For example, in the Czech Republic, pre-1989 almost 95% of the land was in the utilization of large cooperative or state farms, which were subject to nationalization [42].

5. Discussion

Looking at the first factor within the model of rurality, i.e., the level of economic development, Cluster 2 has the most unfavorable economic structures. This cluster includes as much as 69% of the territory of Serbia, and 64% of the population lives in these intermediate and rural regions. This devastating result indicates these areas' extremely unfavorable economic structure. In addition to Serbia, this cluster includes the dominant territory of Greece, Bulgaria, Romania, and Croatia, as well as smaller segments of Hungary, Latvia, Lithuania, and Portugal. Namely, these areas are the biggest challenge to the EU rural development policy and the Cohesion policy, given their economic devastation and the enormous gap compared to most EU territories. Given that the development of rural areas in the EU, especially highly developed countries, is increasingly based on the concept of diversification of activities, the development of new businesses in these areas, i.e., the development of the rural non-agricultural economy, it is necessary to provide the areas of Cluster 2 with adequate financial resources in the direction of the revitalization of these areas. From the European Agricultural Fund for Rural Development, for example, for the border, marginalized areas of Romania, huge funds are directed to the diversification of activities, i.e., the development of new businesses [43]. The creators of Serbia's rural policy should analyze how the EU approaches the problem of economically devastated areas. Of course, the financial capabilities of Serbia and the EU are not comparable, although good examples from practice can point to adequate projects that produce certain results.

Another driving force behind the development of rural areas is the modernization of agriculture itself, which is the dominant activity in rural areas. The problem around Cluster 2, in addition to the great importance of the primary sector to the overall economy, is the low productivity of this sector. Low labor productivity indicates high employment in agriculture ('hidden unemployment'), which is dominant in areas belonging to Clusters 2 and 6 (certain areas of Poland, as the chief representative of Cluster 6, Serbia, Bulgaria, Romania, Croatia, Greece, and Hungary). Increasing the primary sector's competitiveness in these areas is also one of the critical challenges. For example, after a detailed analysis, the European Commission created a report for Poland on an adequate model of rural development, which includes diversification of economic activities; ensuring the competitiveness of enterprises in rural areas by investing in infrastructure, as well as in general rural infrastructure; preservation of existing natural assets and resources; providing opportunities for education and professional training to improve the competitiveness of human capital; increasing the

quality of rural life in order to prevent youth migration; promoting the rural brand through strengthening the rural, cultural identity (rural tourism, rural products); and coordination of policies and funding sources to achieve sustainable rural development [44]. This rural development model, with adequate measures and projects, also applies to other parts of Clusters 2 and 6. Rural areas rest on natural wealth (land, forests, mineral resources); accordingly, it is necessary to highlight the importance of the mining sector in these areas. As Mármola and Vaccarob [45] state in their research, the European Union has begun to promote metal mining in rural areas in relation to the previous emphasis on promoting tourism, which indicates the significant pressure of mining in rural areas in their transformation.

In rural and intermediate areas where development occurs, the decisive factors, according to Torre and Wallet [46], are the expansion of surrounding cities as well as an increase in the urban population's demand for rural goods, such as rural tourism, landscapes, and the cultural and historical landmarks of rural areas. These factors in the development of rural areas have important implications for the policy concerning rural development, where the development of these areas depends less and less on traditional rural resources (agricultural land, forests) and more and more on other contents that rural areas can offer. Also, the digitalization of rural areas significantly affects the regional development and attractiveness of rural areas, i.e., to compensate for all the shortcomings in relation to rural areas (e-commerce, work from home, digitalization in education and administration, etc.) [47]. This development factor is gaining more and more importance in the modern world.

Rural development policies were first aimed at equating the rural with the agricultural economy to increase agriculture productivity through modernizing agricultural farms. Then, the turn of the policy was in the direction of connecting agriculture with other sectors, such as processing, crafts, or tourism. Meanwhile, in highly developed countries, increasing attention is paid to the living conditions and needs of the rural population. The change in the approach of rural policy from sectoral to territorial was already emphasized in the previous part. Bonfiglio et al. [48] analyze the distribution of the CAP in EU countries, by pillars, at the level of NUTS 3. Namely, in their analysis of the distribution of funds for the second pillar, several peculiarities are observed on the three primary axes of rural development (competitiveness, environment, and diversification and quality of life). Polish, Hungarian, Czech, Slovak, and Baltic regions are highly supported under Axis 1 (competitiveness). Conversely, support within Axis 1 is less intensive in most regions of Germany, Great Britain, France, and Italy. Analysis of support for Axis 2 (environment) indicates that the areas with a higher intensity of support for this axis are mountainous regions across the Alps, Greece, Ireland, and Scandinavia. Also, support for Axis 3 (diversification and quality of life) is of lower intensity in parts of Western Europe (highly developed countries in which rural areas have a highly diversified economic structure, as well as a higher degree of urbanization); medium intensity in certain eastern regions of Germany, Great Britain, and Scandinavian countries; while the intensity is increased in the CEE countries. This indicates that various factors (economic, natural, demographic, historical, infrastructural, and similar) that create the specificities of a particular region influence the strategies and measures that are necessary to be directed to those areas, i.e., that these factors influence the possibility of achieving the defined goals of rural policy. In Serbia, rural policy rests to the greatest extent on investment in agriculture; that is, it is still determined sectorally, not territorially. Support measures for agri-environmental programs (Axis 2) and diversification of the rural economy (Axis 3) have a negligible share of funding. In addition, funds intended for rural development (the second pillar of the agricultural budget), in contrast to direct support (the first pillar), still have an insignificant share of the total budget. The successful integration into the CAP is not possible without an increase in the budgetary support for agriculture and rural development, where it is noted that in the previous period this support was reduced [49]. Also, directing funds to areas with special development problems is an established practice within the European Union regulations. Within the framework of the CAP, support schemes for less favorable areas,

i.e., for areas with natural limitations (ANCs), are still the most significant mechanism for implementing support for rural development. In the rural policy of Serbia, these measures are not supported, and considering a large part of the territory of Serbia, which is not suitable for intensive agriculture due to its natural predispositions, this measure would be significant.

Serbia has a long tradition of dealing with the problems of regional development, although the policies related to the rural areas and irregularities of territorial development have not been sufficiently coherent [50]. The division of non-urban areas in the EU, including Serbia, that is, the created rural typology, enables the identification of specific processes that influence the development of rural areas. Defining benchmarks for developing rural areas of Serbia is extremely important to create future rural strategies better so we can find some policy recommendations. Confirmation of the heterogeneity of rural areas indicates that the development strategies for these areas must be based on the available resources and development opportunities, considering various factors that influence the development of rural areas. The created rural typology makes it possible to understand and identify the gap that exists today between rural areas, which have reached a certain level of development through adequate development models, concerning the rural areas of the EU and Serbia that have remained on the margins (both concerning 'old' and 'new' member states, as well as differences within the borders of one state), which further indicates the impossibility of creating a single strategy for the development of rural areas. Also, with the rural typology, it is possible to identify the main drivers of the development of European rural areas. Within the EU rural development policy, great attention is paid to the diversification of economic activities in rural areas by creating new businesses, that is, the initiation of the rural non-agricultural economy. On the other hand, one of the main drivers of development in rural areas is directly related to agricultural activity; that is, it represents the modernization of agriculture (that is, the primary sector that is more dominant in rural areas). Also, the European Union pays great attention to the EU Green Deal, which is defined for the Western Balkans countries that it adapts to EU climate targets. However, implementation is often lacking due to the financial, economic, and social costs of the transformation process. Policy makers in Serbia must ensure a transition by ensuring that the social impact of the Green Agenda is considered while strengthening regional cooperation as well as local government capacity to improve the ability of local governments in the Western Balkans to conduct appropriate environmental impact assessments and decentralized implementation of the Green Agenda [51]. Observing the created rural typology, large differences in rural areas all over the EU, including Serbia, are noticeable. The economic structure differs significantly between different groups, where the dominant share of the primary sector is related to less developed areas and contributes to the greater degree of rurality of those areas.

6. Conclusions

Considering the particular focus on the areas of Serbia as a candidate country for EU membership, it is essential to point out the EU areas in a similar situation. Agricultural policy makers should direct future strategies in the direction of the CAP strategies toward EU areas with identical development problems. The significance of the created rural typology for the future strategies for rural development in Serbia is reflected in the following:

- Recognizing the territorial dimension. The rural typology indicates the importance of analyzing different territories, whereby spatial analysis is gaining more and more importance when creating strategies for the development of rural areas. The change of this policy from sectoral to territorial indicates the importance of identifying the different territorial conditions of a certain area. The heterogeneity of rural areas affects the creation of rural development policies, where the shift from a sectoral approach to a territorial one is significant for the development processes of these areas. For example, the importance of the primary sector in the overall economy, viewed through employment and the share of the primary sector in gross added value, varies significantly between regions, which indicates the inadequacy of the sectoral approach

when creating rural policy. In Serbia, the territorial dimension in the creation of rural policy is not clearly indicated in official documents, which is necessary for the future development strategies for these areas.

- Overcoming the trichotomous classification of the EU. The urban–rural typology of the EU, according to which the areas of the EU (with candidate countries for membership) are divided into predominantly urban, intermediate, and predominantly rural, is a one-dimensional typology that observes population density and the number of inhabitants. According to this methodology, 19 NUTS 3 were defined as intermediate in Serbia and 5 as predominantly rural. However, a more detailed analysis indicates that areas of Serbia are in a worse position compared to most EU areas, which are also classified as intermediate and predominantly rural by the urban–rural typology. Considering the need to create a new strategy for Serbia (highlighted in the Policy Review), this indicates that trichotomous classifications are inadequate when we talk about the creation of strategies for the development of rural areas.
- Grouping of the territory of Serbia in relation to EU countries. The significance of this typology is particularly reflected in the analysis of the situation in Serbia, as a candidate country for EU membership, in relation to all the member states. Serbia, whose goals are aimed at the acceptance and implementation of the European model of development for rural areas, which is based on competitiveness, multifunctionality and sustainability, must harmonize strategies and policies with the EU. This typology presents a detailed report on the position of rural and intermediate areas of Serbia in relation to the EU and points to the key problems of these areas. In the literature, there is a trend of creating rural typologies all over the EU; however, this typology expands the area of research to one candidate country for membership. The future strategy for the development of rural areas of Serbia should include an analysis of the different characteristics of the rural regions of Serbia in relation to the EU.
- A multidimensional approach to heterogeneity. Factor analysis identified four dimensions of rurality: level of economic development, structural characteristics of agriculture, demographic structure, as well as spatial characteristics of the area, whereby a more detailed analysis of regions across the EU and Serbia is enabled. In this way, it is possible to identify the strengths and weaknesses of each region, as well as a certain degree of rurality. Also, the multidimensional approach enables the identification of different types of areas that characterize the European Union (and Serbia). This grouping allows rural policy makers in Serbia to target areas across the EU that have similar characteristics to areas of Serbia and identify examples of good practices in the development of rural areas.
- Identifying different types of rural areas. The rural typology in this research represents an important contribution to the identification of strengths and weaknesses in rural areas throughout Europe. Cluster analysis indicates nine different types that characterize the EU, as well as the belonging of the territory of Serbia to those types. Cluster analysis identifies successful intermediate and rural areas of the EU, located especially in the EU-15 countries, as well as certain areas of the EU-13 that manage to achieve a certain level of development compared to most of the EU-13 regions. Also, in addition to better knowledge of rural areas of the EU, the rural typology enables detailed analysis at the level of one country, that is, identification of regional differences within the borders of one country.
- Defining measures and strategies in relation to the specificities of different types. The multidimensional nature of rural areas implies that they are extremely heterogeneous in terms of their characteristics, especially across the large territorial expanse of the EU, which indicates that all the important characteristics must be an integral part of development strategies as well as the creation of rural policies. This is significant for Serbia, given that the distribution of funds to support rural development does not rely on regional differences within the country.

- In accordance with the outstanding scientific and practical contributions of the rural typology, future research can be directed toward a more detailed analysis of the heterogeneity of rural areas of Serbia in relation to EU areas, the alignment of new agricultural policy reforms with the CAP, as well as trends affecting these areas. Also, the availability of new data (e.g., the new Census of Population and Agriculture in Serbia) makes it possible to compare the results with newly created typologies, which represents an analysis of the dynamics of changes in rural areas of Serbia. The main limitations relate precisely to the limitation of data at lower territorial levels for countries that are candidates for EU membership, which makes it difficult to compare with EU countries. The unavailability of data makes it impossible to increase the number of variables in the model of rurality, and therefore, to look more closely at the factors that affect rural areas. An important aspect of this scientific research is to point out the need for typologies of rural areas of Serbia in relation to EU countries at lower territorial levels, which is not adequately represented in scientific research in Serbia.

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Appendix A

Table A1. Demographic and socio-economic characteristics of regions of Serbia, average for 2012–2018.

Regions in Serbia	Rate of Natural Increase (‰)	Population Density (Inhabitants/km^2)	GDP per Capita (PPS per Capita)	Share of the Primary Sector in Gross Value Added—GVA (%)
Zapadnobačka oblast	−8.1	77.4	8560	25.2
Južnobanatska oblast	−5.4	70.1	9570	17.3
Južnobačka oblast	−2.1	151.4	14,515	8.1
Severnobanatska oblast	−8	64.9	8945	22.1
Severnobačka oblast	−6.4	106.3	10,035	15.9
Srednjobanatska oblast	−7.4	58.6	10,210	20.4
Sremska oblast	−5.1	91.9	9625	16.6
Zlatiborska oblast	−3.1	47.5	8435	11.7
Moravička oblast	−5.3	70.8	9300	10.4
Raška oblast	1.8	76.9	5675	8.3
Šumadijska oblast	−4.5	121.9	9930	7.5

Table A1. *Cont.*

Regions in Serbia	Rate of Natural Increase (‰)	Population Density (Inhabitants/km^2)	GDP per Capita (PPS per Capita)	Share of the Primary Sector in Gross Value Added—GVA (%)
Borska oblast	−8.6	36.8	9395	7.3
Zaječarska oblast	−11.3	33.7	6620	16.2
Jablanička oblast	−5.7	80.1	5430	12.1
Nišavska oblast	−5.1	137.1	7890	5.6
Pirotska oblast	−10.1	34.2	9460	7.1
Podunavska oblast	−5.2	160.5	4875	14.5
Pčinjska oblast	0.6	61.5	4985	8.7
Toplička oblast	−6.4	41.8	6250	16.3
Kolubarska oblast	−6.7	71.8	8385	15.7
Mačvanska oblast	−5.4	93.3	6900	17.6
Pomoravska oblast	−8	82.2	7185	12.7
Rasinska oblast	−6.9	91.1	6560	17.6
Braničevska oblast	−8.6	48.2	8970	13.7

Source: Eurostat.

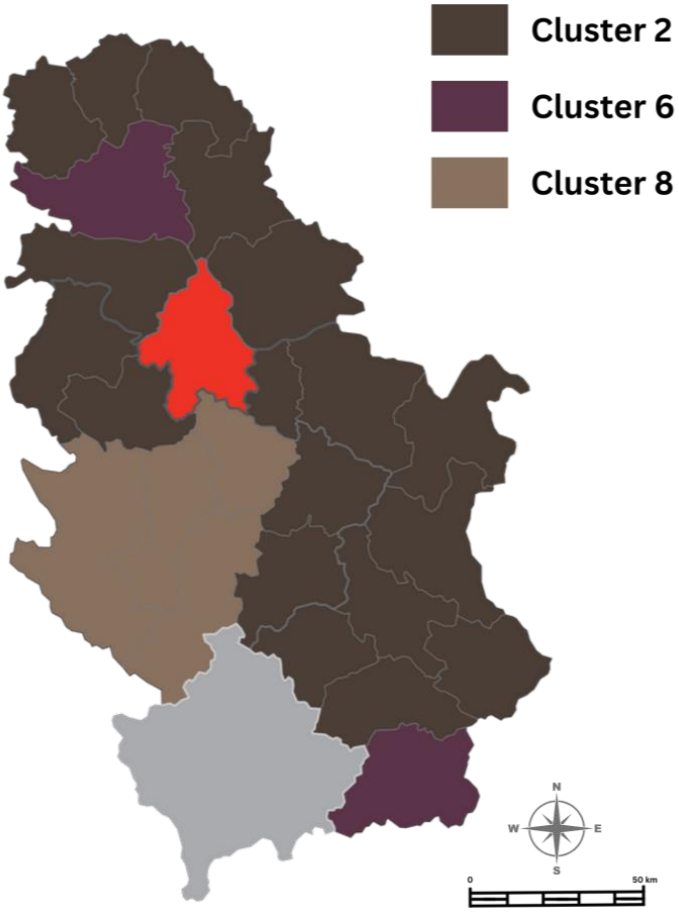

Figure A1. Territorial representation of the different types of rural regions of Serbia. Note: Predominantly urban region is represented in red, in accordance with Figure 3.

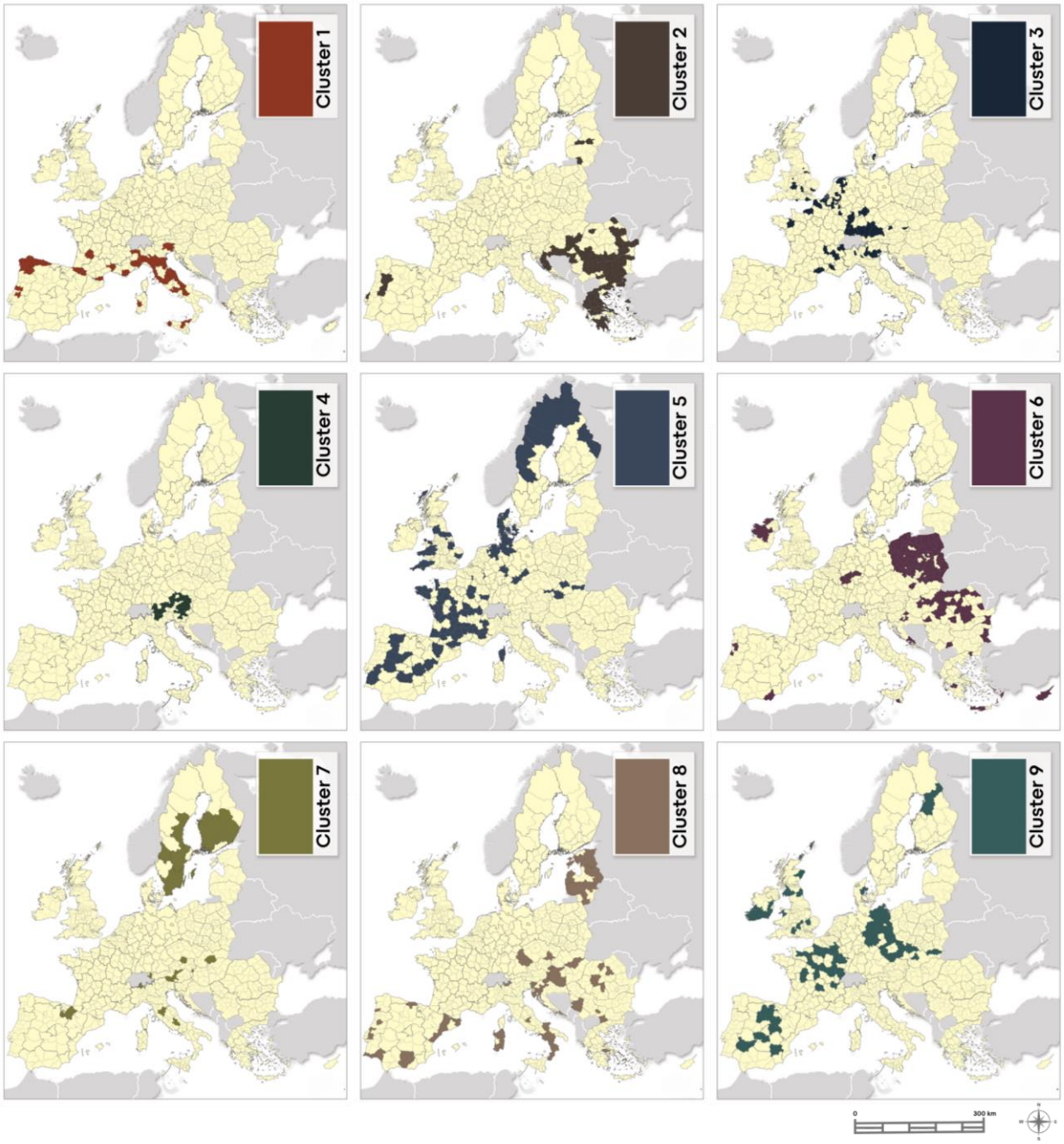

Figure A2. Territorial representation of the different types of rural regions of the EU and Serbia.

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