SITUATION IN SLOVENIAN RURAL AREAS
AND MAIN FACTORS OF THEIR ECONOMIC AND DEVELOPMENT PERFORMANCE

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Abstract

Differences between urban and rural areas, as well as between rural areas, in Slovenia are still pretty large. Slovenian rural areas in general are highly heterogeneous, distinguished by various natural conditions and obstacles and diversified demographic, economic, and social structures. Some rural areas are more successful and more developed as others as a result of different factors. In this paper, we tried to show the differences between urban and rural municipalities and to extract factors on the basis of selected 40 indicators (demographic, economic, social, environmental) using multivariate statistical methods. The results of principal component analysis (PCA) shows that most variability between Slovenian municipalities can be explained with the factors as: productivity, entrepreneurship and investment dynamics, the structure of economic activities, economic power of the population as well as demographic factors such as population growth, educational structure, unemployment, age structure, population density etc. Influenced factors are also remoteness and state of the environment. Using cluster analysis, according to their characteristics, municipalities can be divided into four groups (so-called "typology of economic and development performance of Slovenian municipalities"). Typology can be helpful for the designing and directing of policies and measures for regional and rural development.
Keywords: rural areas, factors, multivariate statistical methods, municipalities, Slovenia

Introduction

In recent decades Slovenian Rural Areas have been exposed to many changes and challenges. Despite the existence of different development policies and programmes development differences between urban and rural areas, as well as between rural areas, in Slovenia are still pretty large. Different studies (OECD, 2006; Terluin, 2001, Bryden et al., 2004; Reimer, 2003; Perpar, 2002; Poto nik Slavi , 2008; Klemen i et al, 2008) show that some rural areas are more successful and more developed as others. Frequently asked questions of the researchers are: Why are some rural areas more successful? Is it a result of the structure of economic activities? Are these differences mainly a result of different factors like available natural resources, demographic situation, entrepreneurship tradition, infrastructure development or even a result of "less tangible" factors like partnerships, development networks, skills of local community management etc. In order to provide answers to these questions it is necessary to identify the key factors influencing the development of rural areas. To do this, first analysis of the situation in rural areas based on selected explaining indicators have to be done. Authors in their studies mainly focused on a few selected areas or regions, and on a few individual factors, while Fuller and Nichol (1999) studied the dynamics of rural economies of leading and lagging regions in Canada on the basis of a larger set of indicators that were related to economic development and the dynamics, labour force participation on the labour market, age structure, unemployment, daily movement patterns, population

structure of employment etc. They found that each region can be leading by some individual factors and lagging by the other. They noted that the assessment of economic and development performance had to include at the same time all these differing dimensions. Use of combined indicators or factors is therefore crucial, since focusing on a single indicator or factor may appear unrealistic and distorts picture of the area's situation.

Methodology

Our analysis, based on a set of 40 selected indicators (explaining demographic situation, the economic performance and the labour market characteristics, quality of life and standard of living, the environment situation, the remoteness and infrastructure facilities), were carried out on administrative level of 210 Slovenian municipalities (local administrative level). For the selection of indicators it was important that the indicator helps to clarify the situation and differences in development between the municipalities (shows statistically significant differences and explains variability), and explain important factors which determines the state of economic and development performance of the area. Potential factors have been identified from the literature review and from the expert insights. The situation of Slovenian municipalities has been studied by selected indicators, as well as the differences between urban and rural communities. On the basis of different typological breakdowns we tried to determine which factors cause the observed differences, heterogeneity and variability. For the data analysis we used (beside descriptive statistics), multivariate statistical methods (principal component analysis and cluster analysis) (Johnson and Wichern, 2002).

Results and discussion

The comparison of the situation between urban and rural municipalities bases on the OECD urban-rural typology for local level. The OECD methodology classifies municipalities with a population density below 150 inhabitants per km² as rural. Based on SORS[41] data on the population of Slovenian municipalities in 2008 and OECD criterion we identified 39 urban (18.6 % of all) and 171 rural (81.4 % of all) municipalities (Figure 1).
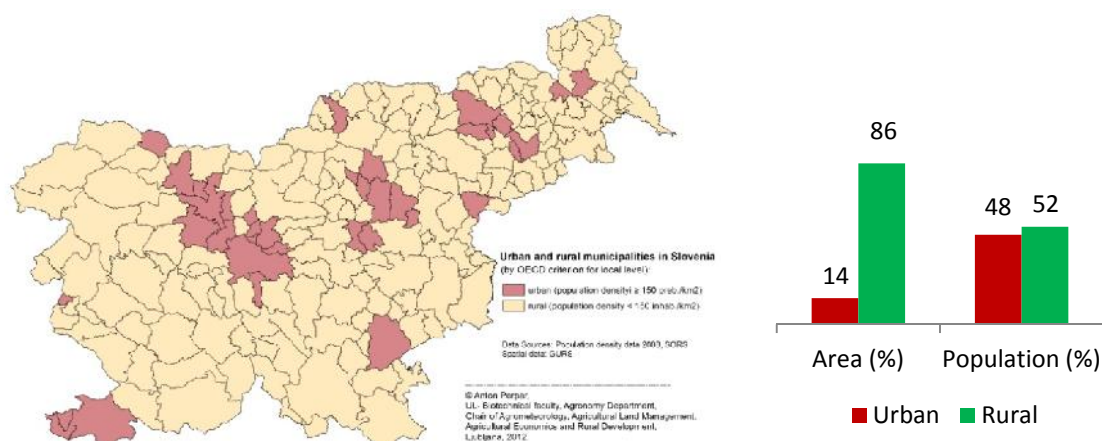

Figure 1: Urban and rural municipalities in Slovenia by OECD criterion.

[41] Statistical Office of the Republic of Slovenia (www.stat.si).

Differences between both types of the municipalities were analysed by each individual selected indicator. Results show a high heterogeneity and variability among municipalities in general (see some examples in Figure 2).
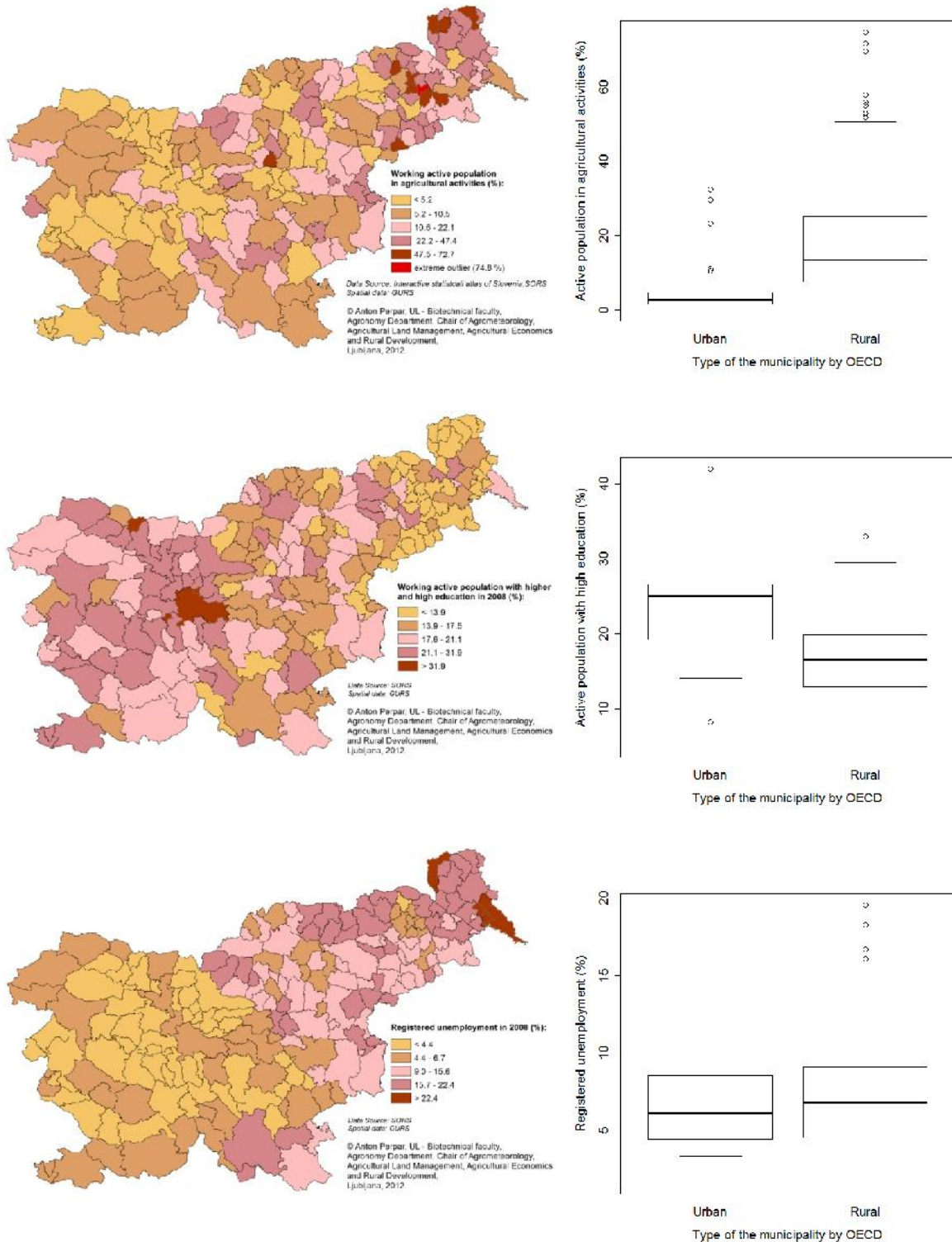

Figure 2: An example of the heterogeneity for the indicators "the share of active population in agricultural activities" (above), "the share of active population with higher education" (centre)

and "registered unemployment" (below) and the differences between urban and rural municipalities (box-plot on the right of the map for each mentioned indicator).

Differences between urban and rural municipalities are the most statistically significant by population density, the share of active population in agricultural activities and the share of active population in services, the share of active population with high education, the number of registered patents and investment dynamics, value added per capita and per employee, gross taxable income, the average monthly gross salary, the number of new start-up companies etc. As expected, rural areas are in the disadvantage situation by all mentioned indicators but in more favourable situation from the environmental perspective.

Obvious differences are also between western and eastern part of Slovenia, eastern part is lagging behind, especially municipalities in the north-eastern part of Slovenia. Analysis shows that municipalities in eastern part of Slovenia have higher share of population employed in agricultural activities and opposite lower share of employments in services. Also educational structure is worst as shown by the share of active population with high education. In general, municipalities with higher share of agricultural employments have worse educational structure of population and are less developed (strong correlations - see Figure 3).
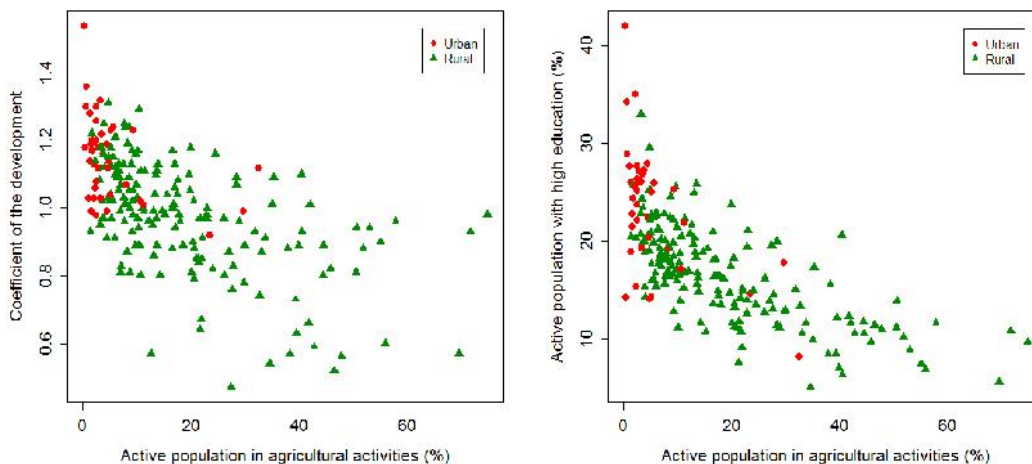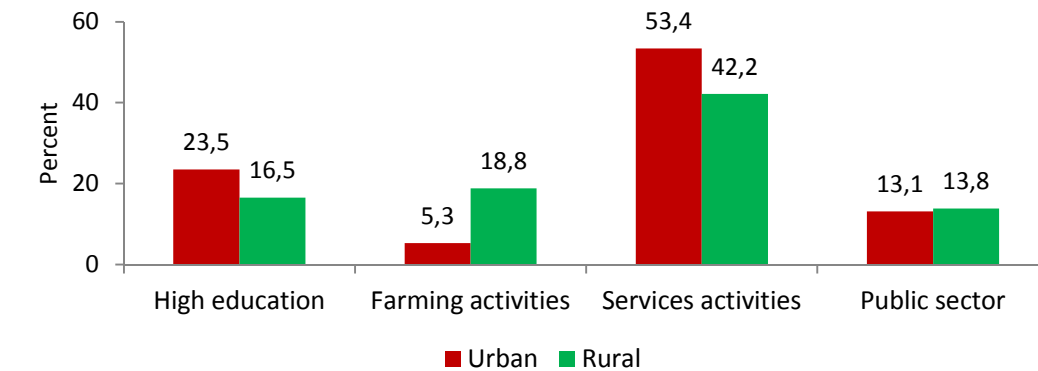
Figure 3: Some differences in employment characteristics of urban and rural municipalities (above) and scaterplots showing correlations betwen the "share of agricultural employment" and "development coefficient" (letf) and "the share of agricultural employment" and "the share of active population with higher education" (right).

Rural areas show worst efficiency by all economic indicators (examples in Figure 4). Differences are significant particularly for value added per capita, gross investments in the period 2000-2008 and entrepreneurship dynamics but also for innovations, business income per employee, average monthly gross salary etc.
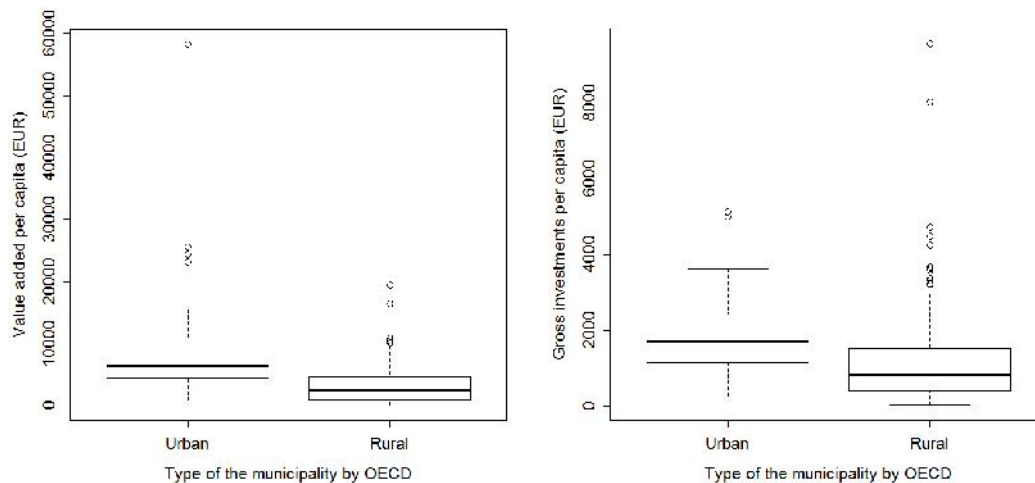

Figure 4: Differences between urban and rural municipalities by "value added per capita" (left) and "gross investments between 2000 and 2008" (right).

From the demographic point of view population growth is still higher in urban municipalities while in rural areas we have on the one hand municipalities close to urban centres where population increase and on the other hand more remote municipalities that continue to lose population (Perpar and Udov , 2012). Negative demographic and economic trends are therefore particularly pronounced in remote rural areas (north-eastern Slovenia) and consequently cause also many problems on social field. This is faced with structural and developmental problems, which are mainly reflected in the lack of jobs outside of agriculture, higher unemployment rate, less developed infrastructure etc.

The results of principal components analysis confirmed the assumption of a large variability in the state of Slovenian municipalities. To explain a significant portion of the variability we still need several principal components. The first five principal components explain around 57 %, while eleven of them 76.5 % of the variability. Table 1 shows the indicators that importantly determinate individual principal component. Key factors, that cause variability among the municipalities, are mostly economic. The first principal component (23.2% explained variance), includes factors such as productivity, entrepreneurship, investment dynamics, the structure of economic activity, as well as demographic factors such as changes in the number of population, educational structure and socio-economic status of the population. Important factors are also the remoteness (from Ljubljana and from regional centres) and the state of the environment. The second main principal component (explains

further 11.3 % of the variability) as important factors show unemployment, age structure, population density and economic size of farms. The first two principal components together are explaining 34.5% of the variability. Even in the subsequent principal components the above-mentioned factors are repeated, so we can conclude that they are a key factors of economic and development performance.

Table 1: Important indicators in principal components and factors that they are explaining.

PC	Important indicators in PC	Factor explained by indicator
PC 1	Gross taxable income	Socio-economic situation of population
	The share of active population with high education	Educational structure
	Value added per employed	Productivity
	Share of active population in agricultural activities	Structure of economic activities
	Distance from Ljubljana	Remoteness of the area
	The amount of municipal waste collected per capita	Environmental situation
	No. of new established companies	Entrepreneurship
	Gross investments per capita	Investment dynamics
	Total population growth	Population growth
PC 2	Registered unemployment rate	Unemployment
	Economic size of agricultural holdings	Economic power of farms
	Coefficient of ageing dependence	Age structure of population
	Number of population per square kilometre	Population density
PC 3	Aging index	Age structure of population
	No. of registered associations per 1000 inhabitants	Engagement of civil society
PC 4	Share of active population in services	Structure of economic activities
	Average monthly gross salary	Economic power of population
PC5	Value added per employed	Productivity
	Business income per employed	Productivity
	Number of inhabitants per square kilometre	Population density

Based on their characteristics Slovenian municipalities were, using a cluster analysis, classified into four groups (so-called "typology of economic and development performance of Slovenian municipalities"). Typology can be helpful for the designing and directing of policies and measures for regional and rural development.

Conclusions

Situation in the Slovenian municipalities is still heterogeneous. Key factors that cause diversity are economic, as proved also by the results of the method of principal components (PCA). For economic and development performance the structure of economic activities and their productivity is very important. Areas with a higher proportion of the active population employed in agriculture are economically weaker as also areas where employments in big industrial plants are predominant (nowadays mostly in troubles). Investments and innovations are very important as well. A key problem, not only in rural areas, is also unemployment, especially of young educated people, while areas with bad economic and development performance have often poor educational structure of inhabitants (due to outflow of educated people because of the lack of suitable jobs), less entrepreneurial initiative (as a result of lower attractiveness, distance to important economic centres and underdeveloped infrastructure), unfavourable demographic situation (unfavourable age structure and/or negative overall population increase). Worse economic situation of the area is reflected in social problems and the quality of life and standard of living as well. Complex mix and interactions between

different factors make appropriate measures and policies difficult to design. Focus should be on improvement of regional competitiveness and activation of endogenous development potential (use of local sources, working places, improvement of infrastructure, knowledge etc.). Special attention needs to focus on improving of the business environment, and strengthening of social and human capital. In our analysis we focused on quantitative ("tangible") indicators. In practice, as well as in some other studies (as Ceccato and Persson, 2003), we can see that there are still unexplained differences in performance between areas which can be explained by "less tangible" factors such as the existence of partnerships, development networks, social capital of local communities, local leadership ability etc. They will be still a subject of future research. Endogenous development potential and entrepreneurship of rural areas are often still in latent stage, so some specific measures are needed to encourage them, as well as some technical assistance from outside.

References

Bryden J/ Courtney P/ Atterton K/ Timm A (2004). Scootland-North and South. In: Bryden, J., Hart, K. (Eds.), Why Local Economies Differ: the Dynamic of Rural Areas in Europe. Edwin-Mellen Press.

Ceccato V/ Persson L O (2003). Differential Economic Performance in the periphery: Evidence from Swedish rural areas. European Journal of Spatial Development, 2003/7. 28 p. http://www.nordregio.se/Global/EJSD/Refereed%20articles/refereed7.pdf (Accessed on 16/06/2013).

Cloke P/ Marsden T/ Mooney P H (2006). Handbook of Rural Studies. SAGE publications, London. 517 p.

Fuller T/ Nichol P (1999). Dynamics of the new rural economy: an exploration of community-sponsored research from Huron County. Chapter 2, University of Guelph, Guelph.

Johnson R A/ Wichern D W (2002). Applied Multivariate Statistical Analysis. Prentise Hall, New Jersey. 767 p.

Klemen i M M/ Lampi B/ Poto nik Slavi I (2008). Življenjska (ne)mo obrobnih podeželskih obmo ij v Sloveniji. GeograFF 3. Univerza v Ljubljani, Filozofska fakulteta, Ljubljana. 149 p.

OECD (2006). The new rural paradigm: Policies and governance. Organisation for economic co-operation and development (OECD), Paris. 164 p.

Perpar A (2002). Razvojne zna ilnosti slovenskega podeželja. Magistrsko delo. Biotehniška fakulteta, Oddelek za agronomijo, Ljubljana. 205 p.

Perpar A/ Udov A (2012). Development Potentials of Rural Areas - The Case of Slovenia, Rural Development - Contemporary Issues and Practices. Dr. Rashid Solagberu Adisa (Ed.). InTech, Rijeka. p. 283-310.

Poto nik Slavi I (2008). Endogeni razvojni potenciali podeželja. Doktorska disertacija. Oddelek za geografijo Filozofske fakultete Univerze v Ljubljani, Ljubljana. 361 p.

Reimer B (2003). The new rural economy project: what have we learned? In: Paper Prepared for Presentation to the Rural Sociological Society, Montreal.

Terluin I J (2001). Rural Regions in the EU: Exploring Differences in Economic Development. Ph.D. Thesis. Faculteit der Ruimtelijke Wetenschappen Rijksuniversiteit, Groningen. 265 p.