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ECONOMIC DEVELOPMENT OF MUNICIPALITIES IN SLOVENIA

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ABSTRACT

Economic development of municipalities in Slovenia

The paper is a contribution to understanding the spatial structure of recent economic development in Slovenia, measured by five indicators. The result is the distribution of municipalities in Slovenia in terms of their economic strength and economic potential in 5 categories. At least favourable economic development has 63 municipalities in Slovenia (27,7%), while 11 municipalities (5,2%) are defined as the most developed ones. The results of the categorization differ to a certain extent from the current studies of the development situation and development trends in Slovenian municipalities. The results of the analysis can be the basis for further discussion within the process of spatial and regional policy renovation in Slovenia.

KEY WORDS

economic geography, economic development, economic strength, economic potential, indicators, municipalities, Slovenia

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1. Introduction

Economic development can be defined as a quantitative or qualitative change in the economy, which leads to the improvement of material wealth or to an increase in the social standard. Understanding the economic development is closely interlinked to the purpose of analysis, theoretical-philosophical view of the world, the issues we are addressing when dealing with economic development, the factors that influence economic development, understanding what is development and in what relation is development with growth and, in particular, how to measure economic development. Economic development can be measured by simple criteria that emphasize the quantitative dimension of the development (e.g. measuring GDP or unemployment rate), with composite criteria (e.g., Human development index) (Cypher 2014) or with a system of indicators (Černe and Kušar 2006). When defining the methodology for measuring economic development, it is also important, whether absolute or relative economic development is measured.

These and other dilemmas in addressing economic development have led to the creation of different approaches at the global level (ranking countries, e.g. Global Competitiveness Index; internet 1), the regional level (systems of indicators for measuring regional development; e.g. Černe and Kušar 2006) and the city level (e.g. ISO 37120; internet 2). The analysis of the economic development of Slovenian municipalities is mostly addressed in the broader context of regional development in Slovenia (Nared 2002; Kušar and Nared 2004; Perpar 2014), prosperity and quality of life (internet 3) or in the analysis arising from the specific needs of a particular sector(e.g. Perpar et al. 2013). More often than the economic development of municipalities in Slovenia, the economic development of statistical regions in Slovenia are discussed (e.g. Kušar and Černe 2014; Kušar 2016; Vintar Mally 2018).

The article aims to analyze the recent economic development of municipalities in Slovenia. Municipalities are the basic self-governing local communities in Slovenia (internet 4). There are 212 municipalities in Slovenia, which have a number of tasks in the area of local development, especially in spatial development. In the case of analyzes of economic and general regional development in Slovenia, municipalities are usually the basic spatial unit of study, since their homogeneity is assumed from the point of view of developmental characteristics. The basic methodological approach used in the paper refers to the definition and analysis of indicators that have been combined into two groups or two criteria: the criterion of economic strength and the criterion of economic development. In our opinion, the combination of the two criteria give us a proper insight into the current situation in the field of economic development in Slovenia.

With the measurement of economic strength, we wanted to highlight the municipalities that already have a positive dynamics of economic development, which is why they are attractive to the labor force from neighboring areas, which reflects in the daily working mobility and the surplus of jobs over the working population in the area. These areas are often competitive in the international context and therefore have a specific economic structure that generates further economic development. The aim of the analysis is also to find the municipalities that have the potential to remain / become an important player in the economic space in terms of their innovation and spatial potential for economic development. Knowledge on economic strength and development potential has great applicative value, as this is one of the key information for planning future development policies and spatial development at national, regional and local level. The selection of indicators and methodology are summarized according to the project Opredelitev in določitev prednostnih območij za stanovanjsko oskrbo (Definition and designation of housing priority areas) - PROSO (Pogačar et al. 2016). For the purposes of this paper additional spatial analyzes and interpretations were conducted.

2. Methodology

2.1. Selection of indicators

The important methodological challenge in measuring economic development is limited availability of statistics at lower spatial levels. This strongly define possibilities for choosing possible and relevant indicators, with which we can define the state of the art and the development trends in the area of economic development (economic strength), but what is even more delicate, to define the prospects for future economic development (economic potential).

Based on experience with the analysis of economic development and economic strength (of municipalities) in Slovenia (e.g. Nared 2002; Černe and Kušar 2006; Kušar and Černe 2014; Perpar 2014) and the possibilities offered by existing statistical databases we have defined two criteria: the criterion of economic strength and the criterion of economic potentials. The combination of both criteria shows which municipalities in Slovenia are economically most developed.

The purpose of the criterion "Economic Strength" is to find those municipalities that experience high economic power, that is, a high degree of economic development. The economic strength is measured by three indicators: the labor migration index, the headquarters of the largest companies and the growth of the number of jobs.

- 1. The labor migration index is a mathematical relationship between the number of persons in employment (excluding farmers) by a territorial unit of workplace and the number of persons in employment (excluding farmers) by a territorial unit of residence, multiplied by 100. The index does not take into account all the internal labor migration in the observed territorial unit (internet 5), and therefore offers only a partial insight into the economic structure, in particular the concentration of workplaces. Municipalities with theoretically higher number of workplaces than the labor force living in them show their high economic strength. Due to a surplus of jobs, labor migrations from other municipalities are attracted to these municipalities and are therefore a gravitational center of the neighboring municipalities and a wider area. According to the principle of cumulative causality and the theory of growth poles (Pike et al. 2006), this situation generates future economic development of this region, thus its economic strength (number of workplaces) is increasing. Territorial units are divided into the following categories according to the labor migration index (Labor migration, Slovenia 2016):
- very labor-oriented: labor migration index 116,0 or more,
- moderately labor-oriented: labor migration index 96.0 115.9,
- weakly residential: labor migration index 76,0-95,9,
- moderately residential: labor migration index 56.0 75.9,
- predominantly residential: labor migration index 36.0 55.9,
- very residential: labor migration index 35,9 or less.

Very labor-oriented municipalities (weight 3), moderately labor-oriented (weight 2) and weakly residential municipalities (weight 1) or all municipalities with labor migration index of over 75,9were counted as economically important municipalities. They are characterized by a smaller job deficit in relation to the number of persons in employment in the municipality.

Table 1: Metadata for indicators included in the Economic Strength criterion

Indicator	Source	Measurement	Unit
Labor	SORS	Relation between the number of persons in	Index
migration		employment (excluding farmers) by a	
index		territorial unit of the workplace and the	
		number of persons in employment	
		(excluding farmers) by the territorial unit	
		of residence, multiplied by 100.	
Headquarters	Manager	Number of largest business groups and	Number
of the largest		companies in Slovenia in 2015 (TOP 101	
companies		list)	
Growth of the	SORS	Growth of the number of jobs between	Percentage
number of jobs		2011 in 2015	

- 2. The indicator Headquarters of the largest companies relates to the number of the largest business groups and enterprises located in aeach Slovenian municipality in 2015. The largest business groups and companies are economic development holders, but also important export oriented companies that show the (international) competitiveness of the economy. With this indicator we want to highlight the largest and most competitive centers(municipalities) in Slovenia, where the corporate headquarters are located corresponding to the location of capital and decision making, while the production or service can be carried out in other municipalities or even in other countries (business units, dislocated units, stores, etc. .).
- 3. With the indicator Growth of the number of jobs, we want to show which municipalities were gaining economic strength after the first recovery during the economic crisis in Slovenia between 2009 and 2013. The increase in the number of persons in employment between 2011 and 2015 according to the municipality of work shows the growth of the number of jobs or employees and consequently shows their economic strength. The analysis did not take into account the municipalities that gained less than 50 posts in the analysed period, regardless of the relative change in the number of jobs. 50 employees are the minimum number of employees in order to be classified as medium-sized enterprises.

Criterion "Economic Potential" means a look into the future. It is important for the planning of future spatial development, in particular the development of the settlement system and infrastructure. The purpose of the criterion is therefore to find those areas that show high potential for future economic development. High potential for economic development are expected in municipalities that are already economically important today or municipalities that do not play any prominent role in the economic system but have a developmental-innovative or spatial potential. Two indicators measure the economic potential: the level of innovation and the assessment of the spatial potential for the development of economic activities.

- 1. The allocation of researchers shows on employment at universities or research organizations and partly to research and development oriented companies.
- 2. We also highlight spatial development possibilities, which are the basis for the development of various economic activities, either through endogenous development (needs of the domestic economy) or by attracting (foreign) direct investments. As a spatial potential we understand a stock of land intended for future economic development. All land taken into account in the analysis is not necessarily suitable for further economic development or is not available due to proprietary relationships. The disadvantageous factors for availability are, in particular, the lack of interest of owners, lack of demand and lack of infrastructural equipment (Regionales ... 2016).

Indicator	Source	Measurement	Unit
Level of	SICRIS;	Number of researchers according to the	Number
innovation	Nared et al.	total number of FTE	
	2016.		
Spatial	MOP,	Area of areas with appropriate land-use	Area
potential	GURS	suitable for the development of economic	(ha)
		activities (industrial and non-industrial	
		activities) not yet developed	

Table 2: Metadata for indicators included in the Economic Potential criterion

2.1. Categorization of indicators

Evaluation of indicators and criteria was carried out with a combination of weighting and coding:

- 1. The values of each indicator are categorized into 4 classes based on the frequency distribution analysis.
- 2. Adding the weights to the indicators for each criterion. Each class is assigned a weight (0-3), whereby weight 3 is assigned to the class with the most favorable values of the indicator (the highest grade).
- 3. Summing weights of indicators and recoding into 3new categories. Three indicators are included in the Economic Strength criterion; therefore, the sum of 9-6 (category 3) shows the municipalities with high economic strength, the sum 3-5 (category 2) represents the municipalities with moderate economic strength, the municipalities with low economic strength are in the category 1.

Two indicators are included in the Economic Potential criterion; therefore, municipalities with the greatest economic potential have a sum of 4-6 (category 3), municipalities with moderate economic potential have a sum of 2-3 (category 2), while all other municipalities are in category 1.

- 4. The final evaluation of economic development: a combination of the Economic Strength and Economic Potential criterion, which avoids reassembling the weights and coding. The results are presented in 5 categories:
- economically most developed municipalities (combinations of categories 3-3, 2-3, 3-2),
- municipalities with favorable economic development (combinations of categories 2-2, 2-1, 1-2),
- municipalities with high economic strength and modest potentials (a combination of categories 3-1),
- municipalities with modest economic power and high potentials (a combination of categories 1-3)
- and municipalities with weak economic development (a combination of categories 1-1).

above 100 ha

40 up to 100

ha

The results of all three categorizations are presented cartographically.

Criteria	Indicator	Weight 1	Weight 2	Weight 3
Economic	Labor migration	Weakly	Moderately	Very labor-
Strength	index	residential	labor-oriented	oriented
	Headquarters of	1-3 companies	4-6 companies	35 companies
	the largest			
	companies			
	Growth of the	decrease 5 %	Growth 5 % up	Growth 20 %
	number of jobs	to growth up	to 20 %	and more
		to 5 %		
Economic	Level of	20-95	96-300	More than 300
Potential	innovation	researchers	researchers	researchers

1 to less than

40 ha

Table 3: Categorization of indicators

3. Results

3.1. Economic strength of municipalities in Slovenia

Spatial potential

From the point of view of the labor migration index, the highest economic strength (labormigration index of 116 or more) have 18 very-labor oriented municipalities in Slovenia of which,the highest value of the labor migration index have Trzin, Šempeter-Vrtojba, Kidričevo, Ljubljana, Nazarje, MurskaSobota, Zreče, GornjaRadgona and Novo mesto.

The highest economic strength measured by the labor migration index have all three centers of international significance in Slovenia (Ljubljana, Maribor, Koper), most centers of national significance (Celje, Nova Gorica, Koper, Novo mesto, Ptuj, Velenje, MurskaSobota), as well as some centers of regional significance (Idrija, GornjaRadgona, Lenart). A special group is suburban municipalities with larger economic zones (Trzin, Šempeter-Vrtojba) and municipalities with a large number of workplaces (Kidričevo, Nazarje, Zreče, Odranci), mostly because of the development of industry after the Second World War

The exception is the municipality of Odranci, which gained economic strength after 2000 because of a successful foreign direct investment and associated favorable economic conditions. The moderate economic strength has 12 municipalities, which are important economic centers in their area: Mežica, RavnenaKoroškem, Štore, SlovenjGradec, Sežana, Naklo, RogaškaSlatina, CerkljenaGorenjskem, Žiri, Kranj, Ljubno, Ljutomer.

The largest economic strength in terms of the headquarters of the largest business groups and companies in Slovenia has municipality of Ljubljana, in which more than one-third of the largest business groups and companies in Slovenia are located. According to the number of companies, Ljubljana is followed by Kranj, Koper, ŠkofjaLoka, Novo mesto, Celje and Maribor. 1-3 headquarters of the largest business groups and companies can be found in 32 municipalities, which are mostly centers of national or regional significance. Economic strength is not limited just to the most important centers of the polycentric urban system, defined by the Spatial Development Strategy of Slovenia (2004), since they are located also in municipalities which are not significant center (Šempeter- Vrtojba, Kanal, Železniki, Trzin, DolpriLjubljani, Lukovica, IvančnaGorica, Mežica, Kidričevo).

According to the increase in the number of jobs between 2011 and 2015, 8 municipalities were ranked in the highest category: Semič, Odranci, Komenda, Cirkulane, DolpriLjubljani, Mirna Peč, Sodražica and Markovci. The number of jobs almost doubled in the municipality of Semič, while the number of employees in the Odranci municipality increased by half. In most of these municipalities, new industrial zones have been developed in recent years. Relatively high growth in the number of persons in employment was also recorded in some municipalities located in predominantly less developed and / or border areas such as Haloze. We estimate that these large changes occurred due to the low initial values.

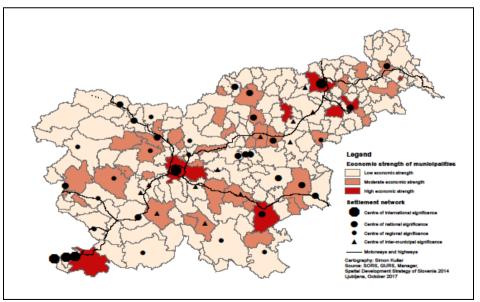


Figure 1: Economic strength of municipalities in Slovenia: results of categorization.

According to the indicators and the methodological approachused in the research, 8 municipalities have high economic strength, while 37 municipalities have moderate economic strength.

Table 4: Municipalities in Slovenia with high and moderate economic strength

Category	Municipalities
High economic	Ljubljana, Maribor, Novo mesto, Ptuj, Koper, Kidričevo,
strength	Zreče, Odranci
Moderate economic	Mežica, ŠkofjaLoka, Nazarje, GornjaRadgona, Idrija, Nova
strength	Gorica, Kranj, Šempeter-Vrtojba, Celje, Semič, Komenda,
	DolpriLjubljani, CerkljenaGorenjskem, Ljubno, Trebnje,
	RogaškaSlatina, Velenje, MurskaSobota, Cirkulane, Mirna
	Peč, Sodražica, Markovci, Lukovica, IvančnaGorica,
	KostanjevicanaKrki, Horjul, Cerknica, Prebold, Žiri,
	Železniki, Ribnica, Žalec, Krško, SlovenjGradec, Ljutomer,
	Trzin, Lenart

Municipalities with high economic strength are limited to the location of centers of national significance (Koper, Ljubljana, Novo mesto, Maribor, Ptuj) and to three strong industrial centers (Zreče, Kidričevo, Odranci). Municipalities with moderate economic strength are scattered throughout Slovenia. They are the remaining centers of national significance (Celje, Velenje, SlovenjGradec, Krško, MurskaSobota, Kranj, NovaGorica) or the centers of regional significance (GornjaRadgona, Ljutomer, RogaškaSlatina, Idrija, ŠkofjaLoka). Their spatial distribution follows the motorway cross and the course of the planned 3rd development axis on the section from the A2 motorway towards the Carinthian conurbation. Moderate economic strength have also municipalities in peripheral areas, with stronger industrialcenter (Železniki, Cerknica, Ribnica, Semič, Nazarje).

3.2. Economic potential of municipalities in Slovenia

In Slovene research organizations, the equivalent of just under 9000 researchers was employed for full, additional or part-time work (Nared et al. 2016). By far the largest number of researchers was counted in the municipality of Ljubljana, almost 6000, following by Maribor with over 1000 researchers. Both municipalities have the seat of the largest universities in Slovenia. The notable number of researchers is found in municipalities with the headquarters of smaller universities or larger higher education centers: Koper, Novo mesto, Celje, Domžale, Kranj, Nova Gorica and Piran. Additionally, more than 20 researchers are found in 7 municipalities in which there are development-innovative companies (Ajdovščina) or major health institutions (Izola). According to the methodology used, there are 16 municipalities in the highest category with more than 100 hectares of planned area for the development of economy: Ljubljana, Celje, MurskaSobota, Sežana, Krško, Maribor, Novo

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mesto, Kidričevo, Kranj, Žalec, Domžale, Koper, Ilirska Bistrica, Jesenice, Trebnje and Brežice. From 40 to 100 ha of available land for economic development (category 2) are found in 40 municipalities. Areas with available land for further economic development are distributed throughout the country. The least available land (up to 1 ha) can be found in municipalities in mountain and border regions and in some places in north-eastern Slovenia (Pomurje).

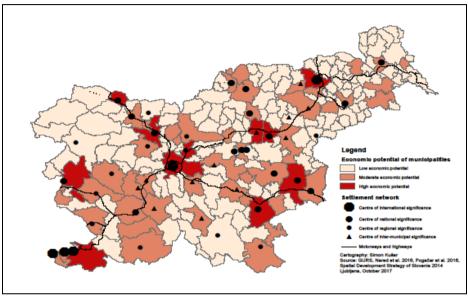


Figure 2: Economic potential of municipalities in Slovenia: results of categorization

Table 5: Municipalities in Slovenia with high and moderate economic potential

Category	Municipalities
High economic potential	Krško, Žalec, Jesenice, Nova Gorica, Celje, Novo mesto, Kranj, Domžale, Koper, Ljubljana, Maribor
Moderate economic potential	Pivka, Logatec, Ormož, Ptuj, Postojna, Črnomelj, Dobrovnik, Mirna Peč, Ribnica, Komenda, Ljutomer, Trbovlje, Cerklje na Gorenjskem, Metlika, Slovenska Bistrica, Sevnica, Dravograd, Gornja Radgona, Ravne na Koroškem, Šentrupert, Vrhnika, Slovenj Gradec, Šentjur, Idrija, Radovljica, Cerknica, Šentjernej, Naklo, Grosuplje, Šempeter-Vrtojba, Škofja Loka, Litija, Miren-Kostanjevica, Ruše, Kamnik, Vransko, Izola, Murska Sobota, Sežana, Kidričevo, Ilirska Bistrica, Trebnje, Brežice, Velenje, Hoče-Slivnica, Ajdovščina, Piran

The greatest economic potential was measured in 11 municipalities, while 47 municipalities showed moderate potential for economic development. Municipalities withhigheconomic potential correspond again to municipalities with the presence of centers of national importance (Koper, Nova Gorica, Jesenice, Kranj, Ljubljana, Novo mesto, Krško, Celje, Maribor). Municipalities with moderate economic potential are distributed throughout Slovenia, but largely they are the centers of administrative units or former communes.

3.3. Economic development of municipalities in Slovenia

The result of the final classification based on a combination of economic strength and economic potential are 5 categories of municipalities. In the first category, there are economically most developed municipalities, which have high economic strength and high economic potential. There are 11 municipalities in this category (5,2 %). Apart from all three centers of international significance (Ljubljana, Maribor, Koper), they are centers of national significance (Celje, Koper, Kranj, Krško, Nova Gorica, Novo mesto, Ptuj), but including also two municipalities that do not play important role in the polycentric urban system of Slovenia (Kidričevo, Žalec).

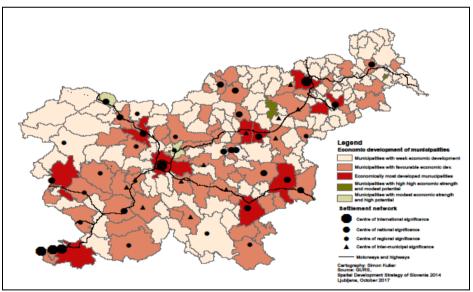


Figure 3: Economic development of municipalities in Slovenia: results of the final categorization

There are as many as 63 municipalities in the category of municipalities with favorable economic development (29,7 % of all municipalities in Slovenia). In terms of economic and geographical characteristics, these are the municipalities

where the centers of regional or inter-municipal significance are located (e.g. Ajdovščina, Črnomelj, Kamnik, Idrija), as well as municipalities that do not have a significant position in the system of settlement in Slovenia, but in recent years they got favorable location factors resulting in rapid economic development (e.g. CerkljenaGorenjskem, IvančnaGorica, Logatec, Ribnica). In this category, there are also municipalities from peripheral and traditionally less developed parts of Slovenia (e.g. Cirkulane, Dobrovnik, Ljubno, Markovci, Sodražica). To understand their recent economic development a more detailed regional analysis is needed.

Table 6: Economic development of municipalities in Slovenia: results of final categorization

Category	Municipalities
Economically most developed municipalities Municipalities with	Celje, Kidričevo, Koper, Kranj, Krško, Ljubljana, Maribor, Nova Gorica, Novo mesto, Ptuj, Žalec Ajdovščina, Brežice, CerkljenaGorenjskem, Cerknica,
favourable economic development	Cirkulane, Črnomelj, Dobrovnik, DolpriLjubljani, Dravograd, GornjaRadgona, Grosuplje, Hoče-Slivnica, Horjul, Idrija, Ilirska Bistrica, IvančnaGorica, Izola, Kamnik, Komenda, KostanjevicanaKrki, Lenart, Litija, Ljubno, Ljutomer, Logatec, Lukovica, Markovci, Metlika, Mežica, Miren-Kostanjevica, Mirna Peč, MurskaSobota, Naklo, Nazarje, Ormož, Piran, Pivka, Postojna, Prebold, Radovljica, RavnenaKoroškem, Ribnica, RogaškaSlatina, Ruše, Semič, Sevnica, Sežana, Slovenj Gradec, Slovenska Bistrica, Sodražica, Šempeter-Vrtojba, Šentjernej, Šentjur, Šentrupert, Škofja Loka, Trbovlje, Trebnje, Trzin, Velenje, Vransko, Vrhnika, Železniki, Žiri
Municipalities with high economic strength and modest economic potentials	Odranci, Zreče
Municipalities with modest economic strengthand high economic potentials	Domžale, Jesenice
Municipalities with weak economic development	Other municipalities

As a special category, we have eliminated the combination of high economic strength and modest potential and modest economic strength and high potential for economic development. Odranci and Zreče municipalities, which are extremely industrial, were classified into the first category. In the second category municipalities of Domžale and Jesenicewere placed, which in the period after the independence of Slovenia were faced with intensive deindustrialization processes.

In contrast to Domžale, Jesenice is a center of national significance, while the municipality of Domžale is located in the suburban hinterland of Ljubljana, but has important innovation capabilities.

4. Discussion and conclusion

When analyzing the economic development of Slovenian municipalities, we were interested in how economic strength is distributed in space and which areas show the greatest potential for economic development. By using the above explainedmethodological approach, which is only one of the various possible approaches to explain the spatial dimension of economic development, we analyzed the economic strength of Slovenian municipalities through analyzinglabor migration index, the location of headquarters of the largest companies and changes in the number of jobs. We evaluated economic potential through the analysis of the level of innovation and the assessment of spatial potential for the development of economic activities.

In the economic space of Slovenia, 78 out of 212 municipalities play an important role (36,8%), which means that less than two thirds of municipalities in Slovenia have any significant economic role. Nevertheless, this should not be equated with the concept of poor development, since some of them are located in the suburban areas of larger centers in Slovenia, which are characterized by the high socio-economic status of the population. Their primary role is residential. The municipalities of Koper, Nova Gorica, Ljubljana, Kranj, Novo mesto, Krško, Žalec-Celje, Maribor and Kidričevo-Ptuj are the main promoters of economic development in Slovenia. These municipalities could serve as the development poles in Slovenia, as it would be easier for them to achieve competitiveness goals in these (wider urban) areas.

Compared with other similar analyses of the developmental situation in Slovenia (e.g. Nared 2002), we found only a moderate concentration of economic development along the motorway cross of Slovenia. Municipalities with relatively favourable economic conditions were also discovered in traditionally less developed and peripheral areas (Bela krajina, Notranjska, SpodnjePodravje). The largest areas with the predominance of economically less developed municipalities are in the regions of Soča Valley (northwestern Slovenia), Kočevsko, Upper Savinjska Valley, in the area between Maribor agglomeration and the Carinthian conurbation, in Haloze, Slovenske Gorice and Pomurje. As similar in the analysis of the needs for housing priority areas (Pogačar et al. 2016), the need for the northern part of the 3rd development axis is clearly demonstrated, linking the economically developed municipalities in Carinthia with the Celje agglomeration or the motorway between Ljubljana and Maribor.

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Economic centers in Slovenia do not necessarily follow the hierarchy of central settlements. This situation is the result of the past political and economic period, which also encouraged industrialization in smaller settlements (mezzo and micro-regional centers), and partly due to the spontaneous development of propulsive economic activities, especially in export-oriented industries (Ribnica, Odranci).

There is still a challenge how to formulate a methodological framework that would allow measurement, analysis, evaluation and comparison of the qualitative dimension of economic development at different spatial levels. Nevertheless, the approach presented in this article can serve as the basis for further discussion, both in spatial and regional planning process in Slovenia.

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