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REGIONAL DISPARITY ANALYSIS OF BUSINESS CONDITIONS: THE CASE OF SERBIA

Analiza regionalnih razlika uslova poslovne klime: slučaj Srbije

Abstract

Important drivers of economic growth and job creation are entrepreneurship and creation of an appropriate business environment, both on a national and local economy level. Analyzing business conditions, different factors are usually identified within internal and external groups of factors. But, both of those groups could also be analyzed in the light of regional differences and specificities.

Bearing in mind the need to develop business climate in Serbia so that it could make economic and social recovery, as well as the need for its coherent and balanced regional development, the main idea of this paper was to research regional disparities in Serbia regarding the factors of external environment that create different conditions for business development, primarily for SMEs development. Different economic, demographic and social factors were taken into consideration by using a special methodology – Data Envelopment Analysis (DEA). The composite index, Regional Development Index (RDI), was created in order to identify main disparities within the existing economic counties in Serbia. The analysis showed the expected results in most of the analyzed counties (north – south development axis), but in some cases there were certain deviations (parts in the east of Vojvodina region and in Central Serbia).

Keywords: *business conditions, regional disparities, Data Envelopment Analysis (DEA), Regional Development Index (RDI)*

Sažetak

Jedni od najvažnijih pokretača ekonomskog rasta i otvaranja novih radnih mesta jesu preduzetništvo i stvaranje odgovarajuće poslovne klime, kako na nacionalnom, tako i na lokalnom nivou. Analizirajući uslove poslovanja, faktori koji na njih presudno utiču gotovo po pravilu se mogu svrstati u dve grupe – interne i eksterne faktore. Međutim, bez obzira na to o kojoj grupi faktora je reč, posebno je značajna analiza njihovih regionalnih razlika i specifičnosti.

Imajući na umu neophodnost oporavka i razvoja srpske ekonomije, kao i njenog koherentnog i balansiranog regionalnog razvoja, glavna ideja ovog rada bila je istraživanje regionalnih razlika u Srbiji kada je reč o eksternim faktorima koji utiču na poslovnu klimu, u prvom redu klimu pogodnu za razvoj malih i srednjih preduzeća (MSP). U razmatranje su uzeti različiti ekonomski, demografski i socijalni faktori na nivou okruga, koristeći posebnu metodologiju – DEA analizu. Na taj način proračunat je i indeks regionalnog razvoja (IRR), kao kompozitni pokazatelj regionalnih razlika na nivou okruga u Srbiji. Analiza je u najvećem delu pokazala očekivane rezultate, pre svega u pogledu odnosa razvijenijeg severa i slabije razvijenog juga, ali i određena odstupanja (istočni delovi regiona Vojvodine, kao i u pojedinim delovima Centralne Srbije).

Ključne reči: *uslovi poslovne klime, regionalne razlike, DEA analiza, regionalni razvojni indeks*

Introduction

Important drivers of economic growth and job creation are entrepreneurship and creation of an appropriate business environment, both on a national and local economy level. Analyzing business conditions, different factors are usually divided into two groups – internal and external. Internal factors characterize the business system itself (objectives, strategies, equipment, size of the organization, factors related to the labor force, marketing mix, product and production cycle, etc.), and the firms can have influence over them. However, external factors (competition, demand and supply conditions, market prices, etc.) are the product of external environment that has been shaped by different socio-economic policies The firm itself has little influence over these factors.

External environment is very important in the development and management of business performance. At the same time, it is a very complex system (it is very hard to determine the number, size and range of the factors of external environment). However, for the purpose of research, certain classes of common factors could be created:

- Economic factors include different economic regulators, creators of economic policies, responsible for the creation of economic climates which are supposed to be positive and appealing for the creation of new or expansion of the existing businesses (fiscal and monetary policy, economic growth, levels of interest rates, exchange rates and inflation rate, trade and government budget balances, saving rates, available sources of financing – such as the availability of credits or the level of financial market development, etc.);
- Political and legislative factors actually depict the influence of government on the economy. The government creates and implements the rules under which companies work. They include tax policy, labor, environment and other related laws, political stability, educational policies, simulative programs for business growth, infrastructure development policies, etc. The government should create the environment of political and legal stability to facilitate business development;
- Social factors are also products of a certain government policy (health consciousness and policies, education policy and development, population policy through regulations of population size, growth, density, migrations and structures, environment awareness). The size and the significance of one country largely depends not only of its economy, but also of its population size and demographic structure (population could give a strategic advantage to a country, but it could also be a very serious burden); and
- Technological factors include ecological and environmental issues (natural resources and conditions), research and development activities (R&D), and product and technology innovations. Today, knowledge application and diffusion is of utmost importance in achieving strategic advantage in market competition. The technological changes greatly affect production costs and quality, and thus, the competitiveness of a company or economy.

The complexity of external environment is reflected not only in the number of its factors, but also in their regional disparities and dynamism. The same factors produce different environments in different geographical areas and, at the same time, they are quite changeable over time (it is very hard to cope with such dynamism). It is quite difficult to include all these moderations in a model of external environment reality. Because of that, there are a lot of attempts to somehow generalize such dynamism and regionalism, with only one purpose: to help those who plan and manage the systems to create appropriate policies in order to create better society and fairer distribution of wealth on a local, regional, national or global level.

Bearing in mind the need to develop the business climate in Serbia so that it could make economic and social recovery, as well as the need for its coherent and balanced regional development, the main idea of the paper was to research regional disparities in Serbia regarding the factors of external environment that create or might create different conditions for business development, primarily for SMEs development. Different economic, demographic and social factors were taken into consideration by using special methodology – Data Envelopment Analysis (DEA). The

DEA method was used in order to investigate whether the regional distribution of SMEs (their significance, efficiency, productivity, number of employees, etc.) is the result of some specific local conditions and, if so, whether there are examples of good practice in local economy development or the prevailing factors are in the government and political sphere. Instead of using a great number of different individual indicators measuring counties' performance, it was more appropriate to use one composite indicator for depicting this complex issue. For that reason, a composite index, Regional Development Index (RDI) was created. However, significant limitation in its creation presented the availability of suitable data, primarily on a county level (some factors affecting the performance of the local economy, which could be considered important, are not included in the model because they were not available at a required level). Despite such imperfection, authors still think this methodology reveals an important aspect of the development of external environment business conditions – differences in local conditions that could be influenced by the local government in cooperation with the national government in order to tackle local specificities and needs.

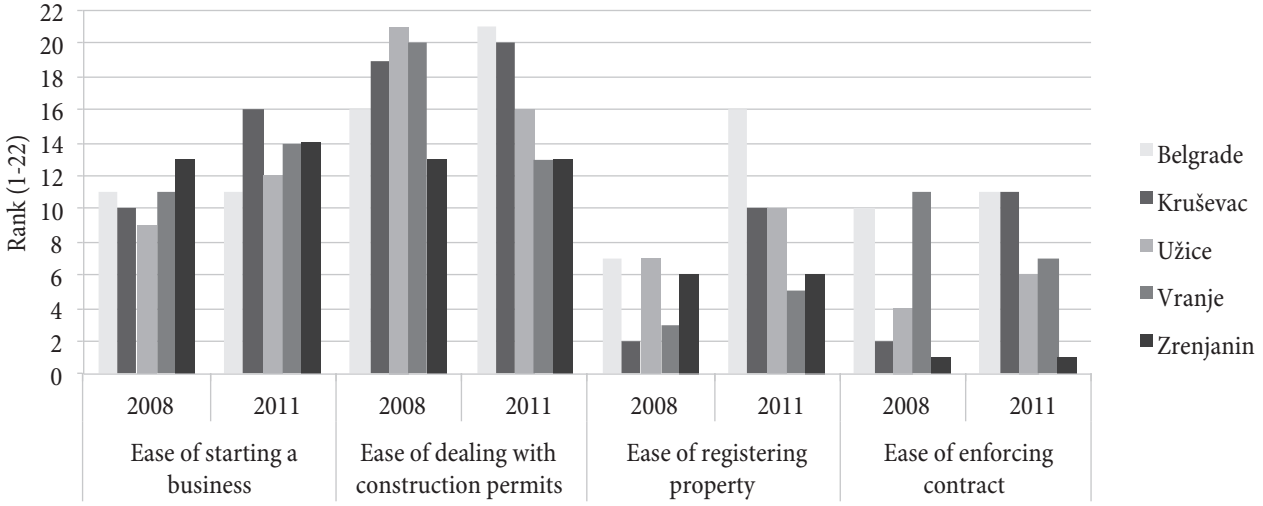
The development of business conditions in Serbia: the significance and development of SMEs sector

There has been a lot of research concerning the impact of various components of the external environment on business, competition and enterprise development in Serbia. Majority of them stress the crucial role of government in creating simulative environment for the business growth in Serbia. Janković and Mihajlović [20, pp. 34-35] discovered that the most influential factors are political and legal issues, in the negative sense, while Adžić stressed the necessity of government intervention for improving companies' performance in Serbia [1, p. 231], primarily in determining the role of the state in economic, social and cultural development in Serbia. The research of Cvjetković [8, p. 168] is also in accordance with that, where the author emphasizes the key role of government in improving the business environment in Serbia (promotion of export orientation of economy through different measures and legislations, attracting foreign direct investments and establishing strategic partnerships and national and cross-border regional clusters). Although the SDI is considered to be one of the key factors of economic growth and development for a country like Serbia, there are still major obstacles for its realization: unfinished privatization, macroeconomic instability and the ineffectiveness of government policies [23, p. 34]. Đuričin and Vuksanović suggest new comprehensive economic policies framework in Serbia, based on three pillars: industrial policy, monetary and fiscal policy and competitiveness and regional policy, suggesting the reindustrialization as a strategy to eliminate the output gap (which causes inflationary pressure, twin deficits (current account and budget) and high level of unemployment) [13, pp. 26-29], [14, pp. 292-297].

The World Bank's Doing Business research, which has been conducted continually for different countries based on several indicators (regulation for starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts and resolving insolvency), provides a certain image of business climate in Serbia. Countries are ranked according to the overall score, and in 2016, Serbia was ranked 54th out of 189 countries according to the ease of doing business [11, pp. 16-23]. In the region, the following countries were better ranked than Serbia: Macedonia (12th), Slovenia (29th), Romania (37th), Bulgaria (38th), Croatia (40th), Hungary (42nd) and Montenegro (46th). Serbia significantly improved its rank over the last 10 years (it was in the 91st place in 2007 and in the 93rd in 2013, while it is expected to be in the 47th in 2017). Most efforts have been devoted to easing the starting of a business, obtaining construction permits and registering property, but there is still a lot of room for improvement.

After analyzing the regulation that is subject to local jurisdiction and enforcement (starting a business, obtaining licenses, registering property and enforcing contracts), World Bank publishes sub-national reports, with indicators for chosen cities in a given country or region [10, pp. 21-28].

Figure 1: Ease of doing business in chosen Serbian cities, 2008 and 2011



Source: Doing Business in South East Europe 2008 and 2011, The International Bank for Reconstruction and Development, Accessed on 12 May 2017 from http://www.doingbusiness.org/Reports/Subnational-Reports/South-East-Europe

After comparing ranks for observed Serbian cities across the whole country, it was expected for Belgrade to be singled out as the best for performing business (the most developed in the country). But the analysis in 2011 showed some deviation in certain areas: in the ease of starting business Kruševac was the best, and Zrenjanin, Vranje and Užice performed better than Belgrade. In other segments, Belgrade was at the top, but it was evident that some of the observed cities did a lot at the local level of governance, so their performance was better in comparison to 2008 (Kruševac and Užice), while the others were stagnant (Zrenjanin).

The competitiveness of economies was also monitored via global competitiveness index (GCI) which encompassed three sub-indexes: basic requirements (key for factor-driven economies), efficiency enhancers (key for efficiency-driven economies) and innovation and sophistication factors (key for innovation-driven economies). According to this research, Serbia lags significantly behind its neighbors in creating supportive and competitive business environment: in 2015 it was ranked 90th out of 138 observed economies, which was lower than Bulgaria (50th), Slovenia (56th), Romania (62nd), Macedonia (68th), Hungary (69th), Croatia (74th), Albania (80th) and Montenegro (82nd) [27, pp. 76-91]. Serbia shows the lowest performance in the sector of institutions, innovation and business sophistication (markets are characterized by the insufficient level of efficiency in property rights and intellectual property protection, judicial independence, efficiency of government spending and regulation, efficiency of legal framework in settling disputes). At the same time, the most important competitive advantages of Serbia are a healthy, educated, skilled and cheap labor force, and capacities for research. However, these potentials are not exploited (out of 138 countries, Serbia is at the penultimate place in relation to two very important indicators – capacity to retain and attract talents!). It is interesting that in the ranking of the most problematic factors for doing business in Serbia (12-0), seen by business executives, fiscal politics and bureaucracy have been singled out as the biggest obstacles.

In the situation of facing with the problems of high unemployment, low level of economic activity, low GDP growth and productivity, lack of competition and investments, entrepreneurship and the development of small and medium enterprises (SME) could have an important role in various aspects of Serbian economy.

The development of SMEs in Serbia started after the introduction of changes in legislation at the beginning of 1990s (more than a half of over 20,000 established SMEs in Serbia in 1990 were located in Belgrade, and the whole sector employed around 110,000 people). In the next ten years, the number of SMEs and stores grew to around 357,000 and slightly fell during the period after the economic crisis in 2008 [26]. Although regional dispersion of the number of SMEs (and, consequently, of employees) improved, sectoral dispersion remained highly unfavorable

(more than 85% of total turnover was generated in only 4 sectors: trade and manufacturing (dominantly), and real estate renting and construction). That was the consequence of a very weak capital base, bad external environment and very low government support. Notwithstanding, the significance of SMEs for Serbian economy was enormous (in 2000, they employed around 1.35 million people and created around 40% of Serbian GDP) [26].

Today, SMEs present a very important segment of the Serbian economy, while they constitute 99.8% of total number of active firms in Serbia. Large part of the population works within the SME sector (65.7% of the total number of employees) and SMEs create 57.7% of gross value added in the whole economy (32% of Serbian GDP) [17, pp. 9-14], [28]. The share of SMEs in export is also significant (44.1%), as well as in import (56.5%) However, micro-entities dominate (the average number of employees per firm is 2.47), which is not a favorable base for the improvement of competition, cost-efficiency through the use of economy of scale and new markets penetration. This means that the SMEs sector in Serbia was not sufficiently strengthened in the previous period to be the driving force in the development of economy. SMEs could be the source of new jobs, by absorbing the surplus of workforce in processes of transformation of state-owned enterprises or in the process of restructuring of large enterprises and, thus, be a sort of economy drivers. But, more importantly, in the long term, the competitive advantage of Serbian economy is the sustainable and balanced socio-economic development. The SMEs sector would also perform better within such an environment and, at the same time, it would help the private entrepreneurial initiative, knowledge, new technology and innovation to develop within the whole country, providing drivers for the local entities which lag behind.

Methodology

The construction of composite indicators is "a useful tool in policy analysis and public communication" [22, pp. 12-14], [30, pp.635-652] for comparison of counties regarding the level of their development in different fields (social, demographic, micro and macroeconomic, business, ecological, educational, ICT, etc.). Instead of using a wide number of different individual indicators measuring counties' performance, it is more appropriate to use one composite indicator for depicting complex issues in county development. For that reason and for the purpose of identifying the main disparities within the existing economic counties in Serbia, a composite index, Regional Development Index (RDI), was developed using Data Envelopment Analysis (DEA).

Data Envelopment Analysis (DEA) is a sort of methodology which constructs an 'efficiency frontier' based on each county's individual data using mathematical linear programming. It determines the best practice by measuring the relative position of each of the counties in terms of the value of the set of observed indicators. Such presentation of existing county's development in different fields and recommendations for possible improvement are clearer to the general public and non-scientific audience.

The very process of composite index construction is not that complex. It consists of four main phases: (1) identifying and analyzing individual indicators using multivariate statistics, (2) filling in the missing data, (3) normalization and, (4) defining the weight of sub-indexes and aggregation model.

The most complex and sensitive step in the process of composite index construction is choosing the aggregation and weights calculation method. Namely, the calculation of the composite index includes the determination of its individual sub-index weights. According to the relevant literature addressing the weighting procedures, one of the simplest ways of determination thereof would be to give equal importance and weight to all sub-indexes [32, pp. 293-296]. In such a way, for example, individual indicators within the Socio-Demographic sub-index would have a weight of 0.20, whereas in the case of the Local Infrastructure Development sub-index it would be 0.33. This was decided on the basis of DEA methodology. However, in order to determine the weights for each county and each individual indicator, the "Benefit of the Doubt" approach is used [4, pp. 435-440], [28, pp. 19-45]. This approach assumes that weights are endogenously determined by the observed performances and benchmark between counties. It is based on the linear combination of the observed best

performances. This combination of weights, calculated through the process of linear programming, enables the overall relative performance index for each county to become as high as possible.

In order to apply the DEA methodology and determine the weight, the values of all the individual indicators must be normalized. This is very important because different indicators are not expressed in the same manner. The raw values are normalized in the interval between 0 and 1 (the indicators with higher values represent better performance of a given country and vice versa).

According to several different authors [31, pp. 305-311], [33, pp. 291-297], [6, pp. 239-251], [5, pp. 111-145], [7], [15, pp.620-630], the basic DEA model assumed that sub-indexes' *CI* (composite indexes) for each county *j* (*j=0,1,...,m)* are calculated as the weighted sum of *n* indicators where the weights are endogenously determined to maximize the value of the composite index for each county. Optimal weights should be determined by solving the next linear programming problem:

$$CI_j = max \sum_{i=0}^{n} y_{ij} w_{ik} \quad (1)$$

where

$$\sum_{i=0}^{n} y_{ij} w_{ik} \leq 1 \quad (2)$$

and

$$wij \geq 0 \quad (3)$$

for any *i=0,1,...,n,* any *j=0,1,...,m,* and any *k =0,1,...,m.*

Another challenge in this methodology is the size of the data set necessary to complete the DEA analysis. There are several different opinions in the literature on what the optimal size is. Our analysis uses the rule of thumb proposed in [16, pp. 237-250], that the number of analyzed counties should be at least twice the number of indicators considered.

After the calculation of weights for each sub-index using the classical "Benefit of the Doubt" approach, we used the DEA Cross-Efficiency model in order to calculate their final values. Although classical DEA is suitable for identifying the best practice frontiers for each county, its self-evaluation feature has been criticized. In this paper, we used the cross-efficiency matrix that was developed as a DEA extension to rank the countries. This tool for results interpreting consists of a table where the number of rows (*j*) and columns (*j*) equals the number of counties in the analysis. For each cell (*ij*), the efficiency of counties was computed with weights that are optimal to county *j* [9, pp. 567-578].

RDI composite index construction for Serbia – county level

For each sub-index, a certain number of indicators are introduced (Table 1). Raw data values are given in Appendix 1.

Table 1: Statistical indicators forming the RDI and sub-indexes

Main index	Sub-index	Indicator used
Regional Development Index (RDI)	Socio-Demographic Index (SDI)	SD1 –Physicians per 1,000 people
		SD2 –Ageing rate
		SD3 –Net migration
		SD4 –Unemployment rate (in relation to active population)
	SMEs Development Index (SMDI)	SM1 –SMEs per capita (#)
		SM2 – GVA per capita (000 RSD)
		SM3 –Average employment in SMEs (#)
		SM4 – Profit rate (%)
	Local Infrastructure Development Index (LIDI)	LI1–Length of roads with modern carriageway as % of total road length
		LI2–Incentives for regional development (000 RSD per capita)
		LI3–Water connection rate (%)
		LI4–Computer-literate persons (%)
		LI5–Average net salary (RSD)

Source: Authors.

Table 2: Normalized values of individual indicators

County	SDI				SMED				LID				
	SD1	SD2	SD3	SD4	SM1	SM2	SM3	SM4	LI1	LI2	LI3	LI4	LI5
Belgrade	0.10	0.65	1.00	0.74	1.00	1.00	0.45	0.95	0.29	0.20	0.91	1.00	1.00
West Bačka	0.74	0.48	0.07	0.26	0.22	0.19	0.42	0.86	0.91	0.08	1.00	0.28	0.20
South Banat	0.53	0.65	0.08	0.44	0.44	0.19	0.05	0.70	0.88	0.09	0.95	0.77	0.57
South Bačka	0.25	0.79	0.30	0.51	0.77	0.58	0.46	0.96	1.00	0.12	1.00	0.38	0.64
North Banat	0.60	0.58	0.15	0.68	0.09	0.25	1.00	0.91	0.95	0.22	0.91	0.29	0.25
North Bačka	0.75	0.65	0.15	0.55	0.40	0.43	0.97	0.90	0.68	0.12	0.79	0.52	0.27
Middle Banat	0.73	0.61	0.08	0.43	0.14	0.25	0.72	0.97	0.95	0.06	0.82	0.35	0.27
Srem	1.00	0.63	0.10	0.52	0.42	0.40	0.65	0.93	0.84	0.08	0.87	0.31	0.27
Zlatibor	0.52	0.60	0.00	0.61	0.43	0.25	0.48	0.84	0.31	0.21	0.46	0.22	0.21
Kolubara	0.58	0.49	0.11	1.00	0.58	0.22	0.00	0.83	0.66	0.65	0.56	0.11	0.28
Mačva	0.74	0.63	0.04	0.55	0.29	0.20	0.40	0.92	0.25	0.05	0.43	0.04	0.14
Moravički	0.69	0.48	0.08	0.68	0.66	0.43	0.43	1.00	0.70	0.07	0.66	0.32	0.22
Pomoravski	0.31	0.42	0.09	0.35	0.34	0.16	0.38	0.87	0.74	0.47	0.39	0.14	0.08
Rasina	0.76	0.43	0.06	0.42	0.35	0.11	0.19	0.75	0.44	0.16	0.62	0.18	0.10
Raška	0.56	0.99	0.07	0.18	0.35	0.12	0.30	0.72	0.18	0.03	0.57	0.22	0.09
Šumadija	0.21	0.56	0.14	0.34	0.32	0.29	0.52	0.91	0.78	0.16	0.75	0.40	0.27
Bor	0.18	0.31	0.09	0.67	0.08	0.00	0.51	0.00	0.50	0.25	0.44	0.16	0.56
Braničevo	0.54	0.39	0.10	0.77	0.23	0.02	0.06	0.67	0.72	0.79	0.38	0.00	0.48
Zaječar	0.17	0.00	0.10	0.57	0.03	0.02	0.57	0.57	0.71	0.00	0.78	0.05	0.16
Jablanica	0.44	0.61	0.07	0.03	0.14	0.05	0.44	0.76	0.35	0.04	0.43	0.02	0.02
Niš	0.00	0.49	0.17	0.02	0.27	0.14	0.57	0.72	0.87	0.05	0.00	0.44	0.22
Pirot	0.34	0.19	0.12	0.07	0.05	0.09	0.98	0.73	0.49	0.14	0.50	0.17	0.29
Podunavski	0.68	0.63	0.08	0.42	0.18	0.08	0.03	0.81	0.94	1.00	0.41	0.20	0.27
Pčinja	0.41	1.00	0.06	0.00	0.38	0.08	0.34	0.39	0.00	0.22	0.72	0.10	0.00
Toplica	0.43	0.55	0.10	0.05	0.00	0.04	0.64	0.79	0.28	0.03	0.24	0.01	0.02

Source: Authors' own calculations.

Table 3: Correlation between individual indicators

Correlations	SD1	SD2	SD3	SD4	SM1	SM2	SM3	SM4	LI1	LI2	LI3	LI4	LI5
SD1	1.00	0.23	-0.42	0.19	-0.05	-0.05	-0.06	0.37	0.11	0.08	0.27	-0.17	-0.31
SD2	0.23	1.00	0.10	-0.22	0.41	0.30	-0.16	0.21	-0.27	-0.07	0.20	0.24	-0.03
SD3	-0.42	0.10	1.00	0.24	0.63	0.81	0.07	0.21	-0.07	-0.02	0.29	0.70	0.75
SD4	0.19	-0.22	0.24	1.00	0.40	0.38	-0.20	0.14	0.26	0.38	0.30	0.17	0.51
SM1	-0.05	0.41	0.63	0.40	1.00	0.84	-0.29	0.39	-0.04	0.02	0.38	0.62	0.56
SM2	-0.05	0.30	0.81	0.38	0.84	1.00	0.16	0.55	0.10	-0.16	0.52	0.76	0.66
SM3	-0.06	-0.16	0.07	-0.20	-0.29	0.16	1.00	0.14	0.07	-0.54	0.14	0.09	-0.09
SM4	0.37	0.21	0.21	0.14	0.39	0.55	0.14	1.00	0.33	-0.07	0.27	0.29	0.01
LI1	0.11	-0.27	-0.07	0.26	-0.04	0.10	0.07	0.33	1.00	0.21	0.30	0.24	0.24
LI2	0.08	-0.07	-0.02	0.38	0.02	-0.16	-0.54	-0.07	0.21	1.00	-0.25	-0.20	0.15
LI3	0.27	0.20	0.29	0.30	0.38	0.52	0.14	0.27	0.30	-0.25	1.00	0.49	0.38
LI4	-0.17	0.24	0.70	0.17	0.62	0.76	0.09	0.29	0.24	-0.20	0.49	1.00	0.71
LI5	-0.31	-0.03	0.75	0.51	0.56	0.66	-0.09	0.01	0.24	0.15	0.38	0.71	1.00

Source: Authors' own calculations.

The normalized values for the 13 indicators are calculated for 25 counties in Serbia: Belgrade, West Bačka, South Banat, South Bačka, North Banat, North Bačka, Middle Banat, Srem, Zlatibor, Kolubara, Mačva, Moravički, Pomoravski, Rasina, Raška, Šumadija, Bor, Braničevo, Zaječar, Jablanica, Niš, Pirot, Podunavski, Pčinja, Toplica. The raw data for the analysis were taken from the Statistical Office of the Republic of Serbia indicators database (Municipalities and Regions of the Republic of Serbia 2016). The normalized numerical values were calculated (Table 2).

Although it is expected that all correlation be positive, in several cases it can be noticed that there are trade-offs between several indicators – negative correlations (Table 3 presents Pearson correlation coefficients).

Within the Socio-Demographic Index, the negative correlation has been shown between SD1 (physicians per 1,000 people) and SD3 (net migration) indicators and between SD2 (ageing rate) and SD4 (unemployment rate) indicators. The first pair shows negative correlation because the larger number of physicians per 1,000 people is probably the relict of the previous period in former Yugoslav country where the sectors of health care and education were in much better position within the national economy than today. On the other hand, the age rate is very unfavorable as the consequence of negative population growth rate, and the correlation to the unemployment rate is negative, because it would be expected to have lower rate with such an old age structure of workforce.

Within the SMEs Development Index, this was the case between SM1 (SMEs per capita) and SM3 (average employment in SMEs) indicators. Precisely explaining negative correlation between SM1 and SM3 would require much more thorough analysis of data, not just at the county, but also at the municipality level. However, a logical explanation would be the fact that Serbia has areas (counties) where there are large factories and people predominantly work there. This means a smaller number of SMEs per capita. In such areas, SMEs are also associated with higher number of plants, as suppliers or manufacturers of certain components, and that is why we might expect them to be slightly 'larger'. In areas where there are no large companies – factories, there are more SMEs and the vast majority of them are micro-enterprises, so it turns out that SMEs on average have a smaller number of employees. Of course, for each individual county, it is necessary to conduct a detailed analysis of the relationship between small and large enterprises and numbers of employees, but authors wanted to see if there are some common circumstances, universal factors and regularities.

Finally, within the Local Infrastructure Development sub-index, the negative correlation has been shown between LI2 (Subsidies for regional development), LI3 (Water connection rate) and LI4 (Computer-literate persons) indicators. To explain such a situation, we need to know the precise criteria according to which counties received these incentives. It would be logical that less developed counties got higher level of incentives, which would explain negative correlation. However, we also cannot deny political reasons for certain decisions – either in the form of not having enough capacities at the local level to propose projects or in the form of direct political influence.

Data Envelopment Analysis (DEA) could be an interesting choice of methodology for the purpose of identifying regional disparities and providing useful material for the regionalization process. However, there are certain limitations of DEA analysis, of which the authors of this paper were aware. In the first place, its static nature. With DEA it is only possible to estimate current level of development and weak areas of each county. We cannot analyze the causes and consequences of different development policies, because it requires a dynamic component. We made conclusions about regional development in Serbia based on historical data in the given year. It resulted in the problem of negative correlation between several indicators – DEA analysis cannot give an answer to why these socio-economic variables have opposite directions. This limitation of our analysis brought us before a dilemma whether this methodology is appropriate for the purpose of our research at all. We decided that this is a good methodology for identifying regional disparities in Serbia at a certain moment. The final conclusions were produced on theoretical research and analytical experience, especially in order to give another glance to the economic regionalization of Serbia. This limitation was also one of the reasons why it was

decided to consider DEA methodology as a tool for helping analysts to better understand the economic space within the existing Serbian economic counties and not for economic regionalization itself. However, further research within the improvement of DEA methodology could even bring about a new principle of future economic regionalization.

Results and discussion

Using the DEA methodology, several different indicators classified within sub-indexes were incorporated within the composite Regional Development Index (RDI). This index is calculated as the weight sum of the corresponding individual indicators, where the weights are endogenously determined by mathematical linear programming so as to obtain the maximum possible value of the RDI index for each individual county. This way, the best possible combination of the individual indicators within a county's sub-index has been delivered (there is no other combination that will enable a county to achieve a greater RDI sub-index value). In other words, we consider the most favorable situation for each county.

Authors chose 12 indicators of the external environment and SMEs performance, grouped into 3 sub-indexes:

- Socio-Demographic Index (SDI) that shows the influence on demographic structure and the state of social implicates (population growth, age structure, migration flows and health care);
- SMEs Development Index (SMDI) calculated as the result of authors' effort to determine differences in SMEs performance across different counties in Serbia; and

Table 4: Calculated values of sub-indexes

County	Cross-efficiency DEA scores (average)				Cross-efficiency DEA ranks (average)			
	SDI	SMDI	LIDI	RDI	SDF	SMED	LID	RDI
Belgrade	1.00	0.95	0.97	0.97	2	4	5	2
West Bačka	0.69	0.85	0.96	0.83	17	13	4	8
South Banat	0.75	0.65	0.94	0.78	14	22	2	10
South Bačka	0.82	0.96	1.00	0.93	9	7	1	3
North Banat	0.82	0.96	0.93	0.90	6	2	3	1
North Bačka	0.87	0.95	0.79	0.87	4	1	10	5
Middle Banat	0.79	0.97	0.82	0.86	10	3	7	6
Srem	1.00	0.93	0.85	0.93	1	6	8	4
Zlatibor	0.71	0.84	0.46	0.67	12	11	20	14
Kolubara	1.00	0.77	0.66	0.81	3	17	11	9
Mačva	0.84	0.90	0.41	0.72	5	9	23	13
Moravički	0.81	1.00	0.66	0.82	8	5	14	7
Pomoravski	0.47	0.86	0.65	0.66	21	12	15	17
Rasina	0.73	0.72	0.61	0.69	16	19	16	18
Raška	1.00	0.71	0.55	0.75	7	18	21	16
Šumadija	0.56	0.91	0.78	0.75	18	8	9	12
Bor	0.60	0.04	0.50	0.38	19	25	17	25
Braničevo	0.78	0.61	0.73	0.71	13	23	12	15
Zaječar	0.32	0.57	0.72	0.53	23	21	13	22
Jablanica	0.61	0.76	0.41	0.59	20	16	22	21
Niš	0.39	0.72	0.05	0.39	24	15	24	24
Pirot	0.28	0.78	0.50	0.52	25	10	18	19
Podunavski	0.81	0.72	0.94	0.82	11	20	6	11
Pčinja	0.88	0.41	0.69	0.66	15	24	19	20
Toplica	0.57	0.79	0.24	0.53	22	14	25	23

Source: Authors' own calculations.

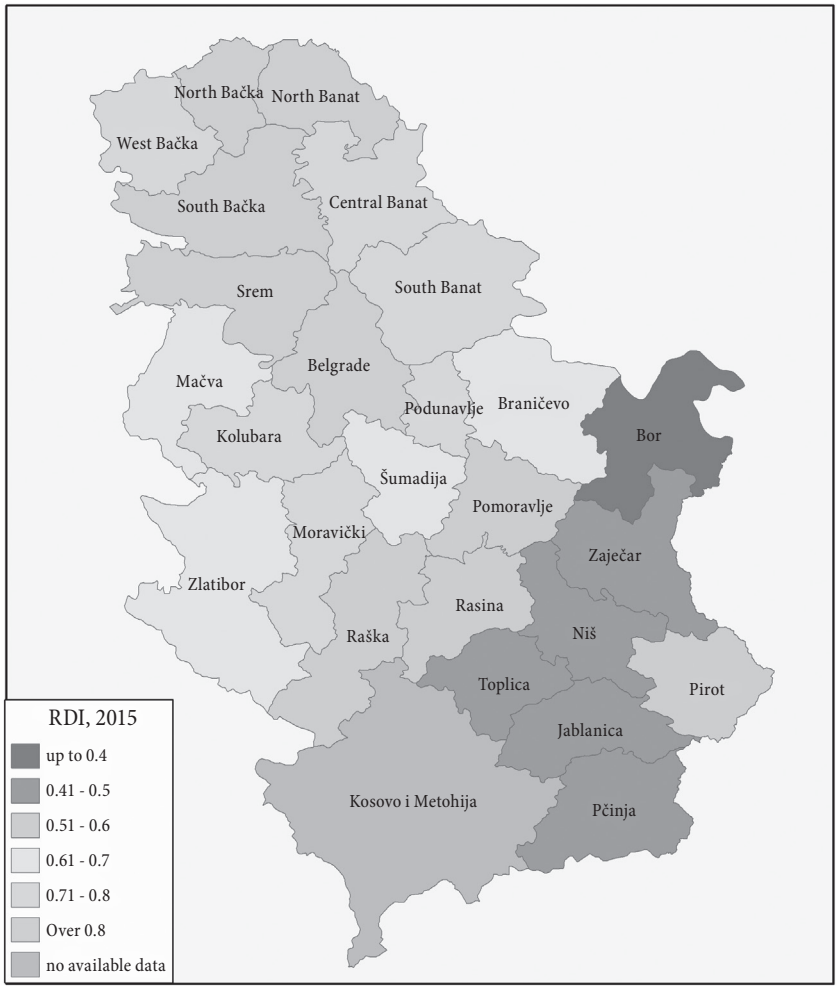
- Local Infrastructure Development Index (LIDI), the indicators are chosen to see if there were significant differences in infrastructure conditions that drove differences in SMEs development.

The resulting sub-indexes range between zero (the worst possible performance) and 1 (the best possible performance – benchmark) (Table 4). The optimal calculated set of weights provides the best position for the given county in relation to all other analyzed counties. Any other weighting profile would worsen the relative position of the given county. After creating a cross-efficiency matrix (explained above and presented in Appendix 2), the average values of weighted individual sub-indexes were calculated.

According to the rank level of RDI index, Serbian counties could be divided into three major groups which correspond to the expected general level of regional economic development (more developed north in relation to the southern and eastern part of the country):

- Developed counties – the counties with better conditions and higher potential for business development and SMEs performance. They include Belgrade, Vojvodina and two counties from Šumadija and Western Serbia region (Moravički and Kolubarski counties);
- Medium-developed counties – most counties in Šumadija and Western Serbia region, which have lower score, conditions and potential insufficiently favorable for business development, as well as three counties from Southern and Eastern Serbia region (Podunavski, Braničevski and Pirotski counties); and
- Underdeveloped counties – most of the Southern and Eastern Serbia counties with significantly unfavorable conditions and potentials for business and SMEs performance.

Figure 2: Regional Development Index (RDI) in the Republic of Serbia, county level, 2015



Source: Authors' own calculations.

However, such general regionalization does have some exceptions, and on a more detailed level of analysis of sub-indexes regional distribution, as well as on a lower, municipality level of analysis, it would reveal a more realistic situation considering business conditions at a local or regional level.

Within the SDI, as expected, the least socially developed counties are those in the southern and eastern parts of the country (Pčinja, Jablanica, Pirot and Zaječar counties). According to the number of physicians per 1,000 people, unexpectedly, the worst situation is in Niš County (250), followed by Zaječar (299) and Bor County (302). Niš is the biggest city in Southern Serbia, and such low performance of this indicator shows diminishing trend of health and social care within local government during the last three decades (period of industrial production decline in Serbia and, especially, Niš County which once was the biggest in the country).

Similar trend could be noticed with the unemployment rate – the lowest performance is seen in southern and eastern counties, over 30 (with the exception of Bor County which has the unemployment rate of 19, due to the unsolved situation with RTB Bor restructuring).

Unfortunately, a relatively low social level of development fades into the background when the demographic situation is in question. The ageing rate shows some of the biggest problems of Serbian society and, further on, its economy as well: depopulation process and very unfavorable age structure of population. This is the result of two simultaneous processes: negative natural increase and strong emigration flow. Only two counties in Serbia record the ageing rate lower than 100 (Raška County with 88, due to the positive natural increase rate in Sjenica, Novi Pazar and Tutin municipalities, and Pčinja County with 87, due to the similar trend of natural increase in Preševo and Bujanovac municipalities). Some counties have ageing rates close to or even over 200, such as Pirot County (194) and Zaječar County (220). This kind of age structure shows that Serbian population as a whole shows old demographic age, with extremes in southeastern and eastern parts of the country (age rate over 40 is the limit above which population is considered to be old).

Low economic and social performance throughout a long period of time caused the continuity of migration flow from rural to urban areas within the whole Serbia (this migration started almost immediately after the Second World War, intensifying with restructuring and industrialization of the country during the 1950s and 1960s) [25, p. 168]. However, although it was logical for this kind of migration to decline with rural population reservoir diminishing, this did not occur in Serbia. Rural population continues to flow toward regional centers, and very often, from local towns or regional centers towards Belgrade (the lowest net migration happens in Zlatibor County (-1,173) and Mačva County (-834)). The consequence of this process is the decline of rural population and its very unfavorable age structure with inability of natural recovery in the future. The rural areas in Serbia are literally dying. At the same time, the migration flows are quite intensive toward Belgrade region from all over the country (Belgrade has the highest net migration, 7,507), as well as toward some regional centers from surrounding areas (Kragujevac in Šumadijski County (80), Niš in Niš County (283) or Novi Sad in South Bačka County (1,473)). Such demographic and social structure, regionally quite unbalanced, leaves little or no room for calculation or maneuver within available instruments of regional and economic development.

As it is expected, the Belgrade region leads in all observed SME indicators and, by far, the worst situation is in Southern and Eastern Serbia (performances of SMEs from Vojvodina are significantly lower than the Belgrade ones, a slightly worse situation is in Šumadija and Western Serbia region). According to the regional distribution of the SMDI, the group of counties with the best SME results includes Belgrade and all Vojvodina counties (with the exception of the South Banat County). However, if we include trade balance as an indicator in the calculation of SMDI in the analysis, the results would be different: Belgrade region would show quite lower results. The reason is a very high trade deficit produced by Belgrade SMEs (out of 25 counties, besides Belgrade, 12 have trade deficits, but the total of those deficits is almost 5 times smaller than the Belgrade one). In 2015, all SMEs in Serbia produced trade deficit of around 450 billion dinars, of

which more than 90% were created by Belgrade SMEs [17, pp. 13-27]. When comparing the contribution of foreign trade balance, measured by the coverage of imports by exports ratio, again the worst performers are Belgrade SMEs, with the ratio rising from 20% in 2008 to 35% in 2015. This is the consequence of bad sectoral structure – two most attractive sectors for small businesses by far are trade (wholesale and retail) and repair of motor vehicles and motorcycles and manufacturing (their share in turnover is almost 65%, in GAV around 51% and they employ around 56% of the total number of employees in SMEs sector) [17, pp. 13-27].

Transportation has a very significant influence on the development of economy, attraction of new foreign investments and increase in living conditions of citizens. The achieved development level of transport corridors is also often an issue for integration into the regional and world economy [2, pp. 3-7]. It is said very frequently that Serbia has a very favorable natural geographical position as its significant competitive advantage, but unfortunately that position is not utilized. Because of undeveloped infrastructure, our socio-economic development is limited. Besides, a significant amount of traffic through our country is lost due to investment in traffic infrastructure in neighboring countries [12, pp. 4-7]. Regarding the Local Infrastructure Development Index LIDI, the best conditions exist in Belgrade and four Vojvodina counties (South and West Bačka and South and North Banat counties). As one goes toward south, the infrastructure conditions worsen, especially toward Southern and Eastern Serbia (exceptions are the counties around big regional centers such as Kragujevac, Niš, Čačak). In Pčinjski County, the share of modern roads is only 36%, while in Raški County it is 47%.

Within the LIDI, the authors have opted for the share of households connected to the city water supply in total number of households as one of the indicators of local infrastructure development. The differences in the use of water and sanitation could be assessed in terms of availability, quality, acceptability, accessibility and affordability. As expected, Belgrade and all Vojvodina counties have the highest percentage of households with access to city water supply (around and higher than 90%, while in Southern and Eastern Serbian counties, it is worse: in Niš County, slightly less than 50% of households are connected to the city water supply, while in Toplica County around 60%). However, regional distribution of this indicator shows the actual capacity and willingness of local governments (Zaječar and Pčinja counties have access to city water supply higher than 80%). The number of households that are connected to the city sewer is significantly lower, especially in rural areas.

Although the average salary is mostly considered to be an economic indicator, it was classified among LIDI because it reflects the differences in economic development of different areas. The level of this indicator has twofold meaning. On the one hand, a higher salary could mean higher purchasing power (the indicator should be corrected with some price index), and on the other hand, that is a component of cost price of given production. Since cheap labor is very often stressed as its competitive advantage, when calculating RDI, authors accepted the second approach (the counties with lower average salary could have higher potential in attracting investments). The employees earn the most in Belgrade (around 125% of the Serbian average) and two Vojvodina counties have higher salary than the Serbian average (South Bačka and South Banat). While the rest of Serbian counties are below the national average, the exception is only Bor County in the Southern and Eastern Serbia region, in which this indicator is unexpectedly high (the consequence of a relatively high salary in mining and metal sectors). Again, the lowest level of indicator is recorded in three Southern and Eastern counties: Toplica, Jablanica and Pčinja counties, with around 75% of Serbian average.

Regional development incentives, financing through concrete investment projects or directing investments for projects of special importance for regional development, show the capacity of local environment. There are different kinds of projects that have been implemented on local and regional levels: the construction or reconstruction of utility, economic, environmental, energy, social and other infrastructure, building and strengthening institutions, human resources, development of companies and entrepreneurship, stimulation of scientific and research work. Incentives in different forms and with various

characteristics are granted to all sectors and to individuals, legal entities and groups [3]. The highest amount of incentives for regional development per capita in 2015 was awarded to two counties from Southern and Eastern Serbia – Podunavski County, slightly above 54,000 dinars per capita and Braničevo County with almost 40,000 dinars per capita (thermal power plant). According to the size of subsidies, these counties were followed by the counties from Šumadija and Western Serbia regions (Kolubara and Pomoravski counties with 36,600 and 28,200 dinars per capita, respectively). All other counties received incentives lower than 17,000 dinars per capita. It is very interesting that almost all counties from Vojvodina had incentives for regional development lower than 10,000 dinars per capita and the lowest amount by far was granted to Zaječar, Toplica and Raška counties (4,700, 5,900 and 6,000 dinars per capita, respectively). There is, also, one more question considering the policy of incentives and project management, especially at the local level, related to the management instruments for incentives, which largely depends on social and demographic structure (educational structure with a spatial reference to the technological equipment and literacy).

Only Belgrade and South Banat County have more than 40% of computer-literate persons. Other Vojvodina counties record between 30 and 35%, while the lowest ratio is seen in the Southern and Eastern Serbian counties (Braničevo, Toplica and Jablanica counties, 23% and lower). Today's way of doing business largely depends on computer literacy and the adoption, use and speed of information and communication technologies. The counties that are not able to actively embrace the digital economy will have to accept the fact that one more barrier is being created between them and developed counties and the existing gap is increasing. The significance that the digital divide will have for further development of Serbian economy can be compared to the importance of the divide between the literate and illiterate. On the other hand, counties that have poorly developed information technology infrastructure can find themselves in a 'technology trap'. The digital economy cannot develop in counties that do not invest in the creation and continuous improvement of broadband and computer networks. It can be noticed that undeveloped counties are far behind developed counties when it comes to internet and communications infrastructure. In such counties, yields from information technology and its associated infrastructure are very small. In addition, undeveloped counties still suffer from traditional forms of poverty (lack of basic infrastructure, such as waste water treatment plants, solid waste treatment and adequate health and education services). This raises the question of whether these counties should divert already scarce resources to close the digital divide [21, pp. 102-111].

Conclusion

The Republic of Serbia is trying to find the best appropriate way to develop its economy in the process of EU accession. However, today its economy is still not sufficiently competitive compared to EU economic space. Serbia has not yet managed to create an adequate environment that would be supportive of business development, especially SMEs development. Contrary to popular opinion, analysis showed that a large part of Serbian territory does not have enough potential and adequate conditions for competitive development. There is a pronounced trend of economic and demographic decline south of Belgrade line. The growth model of Serbian economy established in 2000s was based on demand, financed with foreign capital in form of bank credits, privatization revenues and remittances. Current situation regarding the production for export (while domestic market is too shallow, and, thus, not sufficient for more intensive growth of the production and employment) is not encouraging. This inflow of funds was not used to create strong export capacities and to raise productivity, and only if investments raise competitiveness, productivity, production and export, can they help solving a high trade balance deficit problem.

Besides the expected obstacles during and after the transition process, Serbia is facing one more serious problem – uneven regional development [19]. As regards the demographic, social and economic indicators, Serbia is at the very top among European countries by its regional disparities. What is more, these differences do not diminish over time, but grow, leaving already underdeveloped areas far away from EU-28 average (if we analyze GDP per capita

in purchasing power terms, in comparison to EU-28, Belgrade region is around 60%, Vojvodina region 35%, Šumadija and Western Serbia region 23% and Southern and Eastern Serbia region 21% of EU-28 GDP per capita, ppp) [18, p. 14].

There is no doubt that Belgrade is the most developed region, followed by Vojvodina, with a trend of concentrating business activities in Belgrade City and South Bačka County (Belgrade GDP per capita is significantly above Serbian average, while in Vojvodina it is on national average). Going south, almost all indicators for years are showing diminishing trend, which indicates the need for more balanced management (the southern counties must primarily be helped to reverse the trend and create more favorable business conditions). The lagging counties in the South need serious help in different segments of economy and society.

Furthermore, the Central Serbia area is not homogenous in relation to socio-economic development. For example, Zaječar and Bor counties were usually classified in the group of counties with insufficient level of competitiveness, which RDI analysis strongly confirmed with unequivocally unfavorable conditions and potentials for business development. Zaječar County has some basic infrastructural conditions, but its score of socio-demographic factors is among the worst and it got least government support. Bor County, on the other hand, has a higher level of salaries and received high regional development incentives (development was based on mining and metallurgy), but it has low values of socio-demographic, local infrastructure indicators, and the lowest indicators of SMEs development (with monostructural economy and depending on one company, with bad transition, obsolete technology, drop in the copper price on the world market and lower quality of ore deposits, this county is facing a significant reduction in production, decline in living standards, rising unemployment and open question of RTB Bor restructuring). Another example are two counties in the western part of Central Serbia - Moravički and Kolubarski counties, usually classified as counties with insufficient and low level of competitiveness, respectively. But RDI analysis showed that these two counties have greater potential and better conditions for business development. Indicators of SMEs development for Moravički County are among the highest, its socio-demographic indicators are quite favorable, but it does not have such good performance in local infrastructure conditions. Kolubarski County has a bit lower RDI rank than Moravički, because of the lower value of SMEs development and performance indicators, but it has good development potential according to the socio-demographic indicators, and also local infrastructure indices.

In the era of technology and knowledge-based world economy, Serbia must find an adequate growth model and way to utilize its competitive advantages in order to find its place in sophisticated and demanding European market [24]. Investments in production, infrastructure, science and education are necessary. Further development of SMEs sector in Serbia requires comprehensive government support that would be designed to target specific needs and problems of this sector. Special attention should be devoted to the less developed areas, where a pronounced trend of demographic ageing and depopulation is going on. Facilitating the development of small business could help slow down this trend (employing local inhabitants and raising their standard of living). Targeting specific local needs and problems through the creation of adequate managerial instruments on a local level is the way to raise the level of competencies and capacities of local government. However, current type of regionalization – asymmetrical regionalization, left the Central Serbian counties without the middle level of government, and, thus, without regional mechanisms of financial assistance and coordination. Without questioning the current territorial organization of country, it is certain that it would be desirable to develop demographic, social and economic structure at the regional and local level in order to create sustainable mechanism for a more balanced regional development in Serbia.

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Appendix 1: Raw values data used to calculate RDI

	Socio-Demographic Index (SDI)				SMEs Development Index (SMDI)				Local Infrastructure Development Index (LIDI)				
	SD1	SD2	SD3	SD4	SM1	SM2	SM3	SM4	LI1	LI2	LI3	LI4	LI5
County	Physicians per 1,000 people	Ageing rate	Net migration	Unemployment rate (in relation to active population)	SMEs per capita (#)	GVA per capita (000 RSD)	Average employment in SMEs (#)	Profit rate (%)	Length of roads with modern carriageway as % of total road length	Incentives for regional development (000 RSD per capita)	Water connection rate (%)	Computer-literate persons (%)	Average net salary (RSD)
Belgrade	279.52	132.85	7,505.00	17.88	62.73	287.75	2.49	37.60	0.54	14.59	0.94	0.48	55,551
West Bačka	458.26	156.20	-548.00	27.04	34.98	102.67	2.44	34.40	0.92	8.81	0.99	0.30	37,593
South Banat	400.56	133.26	-467.00	23.68	42.67	101.17	1.96	28.10	0.90	9.14	0.96	0.42	45,928
South Bačka	319.38	114.49	1,473.00	22.34	54.64	191.13	2.49	38.30	0.97	10.59	0.98	0.32	47,445
North Banat	418.97	142.07	120.00	19.00	30.36	114.88	3.20	36.20	0.94	15.52	0.94	0.30	38,630
North Bačka	459.62	133.50	120.00	21.47	41.20	155.79	3.16	35.80	0.78	10.45	0.88	0.36	39,216
Middle Banat	455.35	138.71	-442.00	23.78	31.90	114.92	2.83	38.70	0.94	7.78	0.90	0.31	39,054
Srem	531.17	135.60	-262.00	22.04	41.92	151.00	2.75	37.00	0.87	8.60	0.92	0.30	39,195
Zlatibor	397.42	140.10	-1,173.00	20.44	42.41	116.33	2.53	33.50	0.55	14.86	0.72	0.28	37,875
Kolubara	412.48	154.90	-182.00	12.90	47.85	109.67	1.90	33.30	0.76	36.60	0.77	0.25	39,404
Mačva	457.92	135.20	-834.00	21.50	37.47	104.88	2.43	36.70	0.51	7.15	0.70	0.23	36,233
Moravički	443.17	155.50	-510.00	19.06	50.72	157.28	2.46	39.70	0.79	8.30	0.82	0.31	38,103
Pomoravski	338.51	163.94	-401.00	25.32	38.99	94.67	2.39	34.80	0.82	28.16	0.68	0.26	34,767
Rasina	462.82	162.97	-673.00	24.01	39.68	82.89	2.15	30.20	0.63	12.70	0.80	0.27	35,224
Raška	407.16	88.09	-524.00	28.60	39.47	85.52	2.30	29.00	0.47	6.04	0.78	0.28	35,103
Šumadija	309.45	145.30	80.00	25.55	38.53	125.68	2.58	36.20	0.84	12.38	0.86	0.33	39,026
Bor	302.00	178.79	-393.00	19.28	29.70	58.18	2.56	1.10	0.67	17.13	0.71	0.27	45,581
Braničevo	402.97	167.76	-262.00	17.31	35.07	63.75	1.98	27.10	0.80	43.70	0.68	0.23	43,761
Zaječar	299.29	219.58	-285.00	21.08	28.11	62.95	2.64	23.00	0.79	4.68	0.88	0.24	36,716
Jablanica	374.55	138.62	-590.00	31.44	32.12	68.87	2.47	30.30	0.58	6.55	0.70	0.23	33,502
Niš	250.40	153.93	283.00	31.67	36.56	90.99	2.65	28.80	0.90	7.25	0.49	0.34	37,993
Pirot	346.83	193.76	-135.00	30.70	28.93	77.97	3.18	29.10	0.66	11.39	0.74	0.27	39,548
Podunavski	440.49	135.54	-486.00	24.00	33.50	77.68	1.93	32.40	0.94	54.13	0.70	0.28	39,183
Pčinja	365.76	86.59	-691.00	32.10	40.71	76.90	2.34	16.20	0.36	15.66	0.85	0.25	33,054
Toplica	371.97	146.07	-310.00	31.16	27.00	67.94	2.73	31.60	0.53	5.95	0.61	0.23	33,569

Appendix 2: DEA - Cross efficiency matrices

Socio-Demographic Dimension (scores)	Belgrade	West Bačka	South Banat	South Bačka	North Banat	North Bačka	Middle Banat	Srem	Zlatibor	Kolubara	Mačva	Moravički	Pomoravski	Rasina	Raška	Šumadija	Bor	Braničevo	Zaječar	Jablanica	Niš	Pirot	Podunavski	Pčinja	Toplica
Belgrade	1.00	0.51	1.00	1.00	1.00	1.00	0.88	0.10	0.88	0.74	0.88	0.52	1.00	0.52	0.51	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.65	1.00
West Bačka	0.07	0.75	0.69	0.58	0.69	0.69	0.69	0.74	0.69	0.26	0.69	0.67	0.69	0.67	0.75	0.58	0.28	0.67	0.28	0.74	0.49	0.74	0.69	0.48	0.74
South Banat	0.08	0.75	0.85	0.83	0.85	0.85	0.85	0.53	0.85	0.44	0.85	0.63	0.85	0.63	0.75	0.83	0.45	0.64	0.45	0.76	0.67	0.56	0.85	0.65	0.76
South Bačka	0.30	0.69	0.95	1.00	0.95	0.95	0.92	0.25	0.92	0.51	0.92	0.48	0.95	0.48	0.69	1.00	0.58	0.60	0.58	0.82	0.88	0.50	0.92	0.79	0.82
North Banat	0.15	0.74	0.94	0.90	0.94	0.94	0.93	0.60	0.93	0.68	0.93	0.82	0.94	0.82	0.74	0.90	0.70	0.85	0.70	0.78	0.62	0.68	0.93	0.58	0.78
North Bačka	0.15	0.87	0.97	0.89	0.97	0.97	0.96	0.75	0.96	0.55	0.96	0.84	0.97	0.84	0.87	0.89	0.58	0.87	0.58	0.90	0.69	0.81	0.96	0.65	0.90
Middle Banat	0.08	0.83	0.87	0.79	0.87	0.87	0.87	0.73	0.87	0.43	0.87	0.76	0.87	0.76	0.83	0.79	0.44	0.76	0.44	0.83	0.63	0.74	0.87	0.61	0.83
Srem	0.10	1.00	1.00	0.86	1.00	1.00	1.00	1.00	1.00	0.52	1.00	1.00	1.00	1.00	1.00	0.86	0.54	1.00	0.54	1.00	0.66	1.00	1.00	0.63	1.00
Zlatibor	0.00	0.71	0.88	0.88	0.88	0.88	0.89	0.52	0.89	0.61	0.89	0.73	0.88	0.73	0.71	0.88	0.59	0.68	0.59	0.68	0.59	0.47	0.89	0.60	0.68
Kolubara	0.11	0.66	1.00	0.99	1.00	1.00	1.00	0.58	1.00	1.00	1.00	1.00	1.00	1.00	0.66	0.99	1.00	1.00	1.00	0.69	0.52	0.63	1.00	0.49	0.69
Mačva	0.04	0.86	0.94	0.88	0.94	0.94	0.95	0.74	0.95	0.55	0.95	0.84	0.94	0.84	0.86	0.88	0.54	0.81	0.54	0.83	0.64	0.70	0.95	0.63	0.83
Moravički	0.08	0.72	0.87	0.81	0.87	0.87	0.87	0.69	0.87	0.68	0.87	0.88	0.87	0.88	0.72	0.81	0.68	0.87	0.68	0.72	0.50	0.69	0.87	0.48	0.72
Pomoravski	0.09	0.47	0.58	0.57	0.58	0.58	0.57	0.31	0.57	0.35	0.57	0.43	0.58	0.43	0.47	0.57	0.37	0.45	0.37	0.49	0.44	0.36	0.57	0.42	0.49
Rasina	0.06	0.72	0.73	0.62	0.73	0.73	0.73	0.76	0.73	0.42	0.73	0.77	0.73	0.77	0.72	0.62	0.42	0.76	0.42	0.71	0.44	0.74	0.73	0.43	0.71
Raška	0.07	1.00	1.00	1.00	1.00	1.00	1.00	0.56	1.00	0.18	1.00	0.49	1.00	0.49	1.00	1.00	0.20	0.50	0.20	1.00	1.00	0.57	1.00	0.99	1.00
Šumadija	0.14	0.51	0.66	0.70	0.66	0.66	0.65	0.21	0.65	0.34	0.65	0.35	0.66	0.35	0.51	0.70	0.37	0.40	0.37	0.56	0.60	0.32	0.65	0.56	0.56
Bor	0.09	0.32	0.60	0.65	0.60	0.60	0.60	0.18	0.60	0.67	0.60	0.53	0.60	0.53	0.32	0.65	0.67	0.54	0.67	0.35	0.33	0.25	0.60	0.31	0.35
Braničevo	0.10	0.58	0.81	0.78	0.81	0.81	0.81	0.54	0.81	0.77	0.81	0.84	0.81	0.84	0.58	0.78	0.77	0.84	0.77	0.60	0.42	0.59	0.81	0.39	0.60
Zaječar	0.10	0.10	0.32	0.31	0.32	0.32	0.32	0.17	0.32	0.57	0.32	0.47	0.32	0.47	0.10	0.31	0.58	0.49	0.58	0.14	0.04	0.25	0.32	0.00	0.14
Jablanica	0.07	0.67	0.61	0.57	0.61	0.61	0.61	0.44	0.61	0.03	0.61	0.32	0.61	0.32	0.67	0.57	0.05	0.34	0.05	0.68	0.62	0.46	0.61	0.61	0.68
Niš	0.17	0.34	0.41	0.46	0.41	0.41	0.39	0.00	0.39	0.02	0.39	0.01	0.41	0.01	0.34	0.46	0.07	0.10	0.07	0.42	0.54	0.15	0.39	0.49	0.42
Pirot	0.12	0.33	0.29	0.22	0.29	0.29	0.28	0.34	0.28	0.07	0.28	0.28	0.29	0.28	0.33	0.22	0.10	0.33	0.10	0.37	0.23	0.42	0.28	0.19	0.37
Podunavski	0.08	0.82	0.87	0.81	0.87	0.87	0.87	0.68	0.87	0.42	0.87	0.72	0.87	0.72	0.82	0.81	0.43	0.72	0.43	0.82	0.65	0.68	0.87	0.63	0.82
Pčinja	0.06	0.93	0.88	0.91	0.88	0.88	0.88	0.41	0.88	0.00	0.88	0.28	0.88	0.28	0.93	0.91	0.02	0.30	0.02	0.92	1.00	0.42	0.88	1.00	0.92
Toplica	0.10	0.63	0.57	0.53	0.57	0.57	0.57	0.43	0.57	0.05	0.57	0.33	0.57	0.33	0.63	0.53	0.08	0.36	0.08	0.65	0.58	0.48	0.57	0.55	0.65

SMEs Development Dimension (scores)	Belgrade	West Bačka	South Banat	South Bačka	North Banat	North Bačka	Middle Banat	Srem	Zlatibor	Kolubara	Mačva	Moravički	Pomoravski	Rasina	Raška	Šumadija	Bor	Braničevo	Zaječar	Jablanica	Niš	Pirot	Podunavski	Pčinja	Toplica
Belgrade	1.00	0.95	0.95	1.00	0.45	0.56	0.99	1.00	0.98	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.56	0.95	0.92	0.95	0.98	0.45	0.95	1.00	0.92
West Bačka	0.19	0.87	0.86	0.83	0.42	0.44	0.84	0.85	0.85	0.81	0.87	0.86	0.87	0.86	0.86	0.87	0.44	0.86	0.84	0.87	0.85	0.42	0.86	0.47	0.84
South Banat	0.19	0.68	0.70	0.64	0.05	0.09	0.63	0.65	0.65	0.70	0.68	0.70	0.68	0.70	0.70	0.68	0.09	0.70	0.62	0.68	0.65	0.05	0.70	0.32	0.62
South Bačka	0.58	0.97	0.96	0.99	0.46	0.53	0.97	0.99	0.98	0.98	0.97	0.96	0.97	0.96	0.96	0.97	0.53	0.96	0.94	0.97	0.98	0.46	0.96	0.85	0.94
North Banat	0.25	0.96	0.91	0.98	1.00	1.00	1.00	0.99	1.00	0.83	0.96	0.91	0.96	0.91	0.91	0.96	1.00	0.91	1.00	0.96	1.00	1.00	0.91	0.83	1.00
North Bačka	0.43	0.95	0.90	1.00	0.97	1.00	1.00	1.00	1.00	0.87	0.95	0.90	0.95	0.90	0.90	0.95	1.00	0.90	0.98	0.95	1.00	0.97	0.90	1.00	0.98
Middle Banat	0.25	1.00	0.97	0.98	0.72	0.73	1.00	1.00	1.00	0.90	1.00	0.97	1.00	0.97	0.97	1.00	0.73	0.97	1.00	1.00	1.00	0.72	0.97	0.64	1.00
Srem	0.40	0.95	0.93	0.96	0.65	0.69	0.96	0.97	0.97	0.90	0.95	0.93	0.95	0.93	0.93	0.95	0.69	0.93	0.95	0.95	0.97	0.65	0.93	0.77	0.95
Zlatibor	0.25	0.85	0.84	0.85	0.48	0.52	0.84	0.85	0.85	0.82	0.85	0.84	0.85	0.84	0.84	0.85	0.52	0.84	0.83	0.85	0.85	0.48	0.84	0.65	0.83
Kolubara	0.22	0.80	0.83	0.76	0.00	0.06	0.74	0.76	0.77	0.84	0.80	0.83	0.80	0.83	0.83	0.80	0.06	0.83	0.73	0.80	0.77	0.00	0.83	0.38	0.73
Mačva	0.20	0.92	0.92	0.89	0.40	0.43	0.89	0.90	0.90	0.88	0.92	0.92	0.92	0.92	0.92	0.92	0.43	0.92	0.89	0.92	0.90	0.40	0.92	0.50	0.89
Moravički	0.43	1.00	1.00	1.00	0.43	0.50	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.50	1.00	0.96	1.00	1.00	0.43	1.00	0.76	0.96
Pomoravski	0.16	0.87	0.87	0.84	0.38	0.41	0.84	0.85	0.86	0.84	0.87	0.87	0.87	0.87	0.87	0.87	0.41	0.87	0.84	0.87	0.86	0.38	0.87	0.51	0.84
Rasina	0.11	0.74	0.75	0.71	0.19	0.23	0.70	0.71	0.72	0.73	0.74	0.75	0.74	0.75	0.75	0.74	0.23	0.75	0.70	0.74	0.72	0.19	0.75	0.38	0.70

SMEs Development Dimension (scores)	Belgrade	West Bačka	South Banat	South Bačka	North Banat	North Bačka	Middle Banat	Srem	Zlatibor	Kolubara	Mačva	Moravički	Pomoravski	Rasina	Raška	Šumadija	Bor	Braničevo	Zaječar	Jablanica	Niš	Pirot	Podunavski	Pčinja	Toplica
Raška	0.12	0.72	0.72	0.71	0.30	0.34	0.69	0.71	0.71	0.70	0.72	0.72	0.72	0.72	0.72	0.72	0.34	0.72	0.70	0.72	0.71	0.30	0.72	0.46	0.70
Šumadija	0.29	0.92	0.91	0.90	0.52	0.55	0.91	0.92	0.92	0.87	0.92	0.91	0.92	0.91	0.91	0.92	0.55	0.91	0.90	0.92	0.92	0.52	0.91	0.61	0.90
Bor	0.00	0.04	0.00	0.12	0.51	0.51	0.10	0.10	0.10	0.01	0.04	0.00	0.04	0.00	0.00	0.04	0.51	0.00	0.10	0.04	0.10	0.51	0.00	0.44	0.10
Braničevo	0.02	0.65	0.67	0.60	0.06	0.08	0.59	0.61	0.61	0.64	0.65	0.67	0.65	0.67	0.67	0.65	0.08	0.67	0.60	0.65	0.61	0.06	0.67	0.19	0.60
Zaječar	0.02	0.60	0.57	0.60	0.57	0.56	0.60	0.60	0.61	0.52	0.60	0.57	0.60	0.57	0.57	0.60	0.56	0.57	0.61	0.60	0.61	0.57	0.57	0.45	0.61
Jablanica	0.05	0.77	0.76	0.74	0.44	0.45	0.74	0.75	0.76	0.70	0.77	0.76	0.77	0.76	0.76	0.77	0.45	0.76	0.75	0.77	0.76	0.44	0.76	0.43	0.75
Niš	0.14	0.74	0.72	0.75	0.57	0.59	0.74	0.75	0.76	0.69	0.74	0.72	0.74	0.72	0.72	0.74	0.59	0.72	0.75	0.74	0.76	0.57	0.72	0.61	0.75
Pirot	0.09	0.78	0.73	0.82	0.98	0.98	0.82	0.82	0.83	0.66	0.78	0.73	0.78	0.73	0.73	0.78	0.98	0.73	0.83	0.78	0.83	0.98	0.73	0.79	0.83
Podunavski	0.08	0.78	0.81	0.70	0.03	0.05	0.71	0.72	0.72	0.76	0.78	0.81	0.78	0.81	0.81	0.78	0.05	0.81	0.72	0.78	0.72	0.03	0.81	0.14	0.72
Pčinja	0.08	0.41	0.39	0.44	0.34	0.38	0.41	0.42	0.43	0.41	0.41	0.39	0.41	0.39	0.39	0.41	0.38	0.39	0.41	0.41	0.43	0.34	0.39	0.51	0.41
Toplica	0.04	0.82	0.79	0.79	0.64	0.63	0.81	0.81	0.82	0.71	0.82	0.79	0.82	0.79	0.79	0.82	0.63	0.79	0.82	0.82	0.82	0.64	0.79	0.49	0.82

Local Infrastructure Development Dimension (scores)	Belgrade	West Bačka	South Banat	South Bačka	North Banat	North Bačka	Middle Banat	Srem	Zlatibor	Kolubara	Mačva	Moravički	Pomoravski	Rasina	Raška	Šumadija	Bor	Braničevo	Zaječar	Jablanica	Niš	Pirot	Podunavski	Pčinja	Toplica
Belgrade	1.00	0.87	1.00	1.00	0.97	1.00	0.29	0.94	1.00	0.97	0.93	0.54	0.30	0.97	0.99	0.56	1.00	1.00	0.92	0.93	0.54	0.97	0.20	0.97	0.29
West Bačka	0.28	0.95	0.99	0.58	0.98	0.96	0.91	1.00	0.98	0.98	1.00	0.89	0.91	0.98	0.99	0.89	0.60	0.28	1.00	1.00	0.89	0.98	0.08	0.98	0.91
South Banat	0.77	0.91	1.00	0.89	0.94	1.00	0.88	0.97	0.96	0.94	0.95	1.00	0.88	0.94	1.00	1.00	0.88	0.58	0.96	0.95	1.00	0.94	0.09	0.94	0.88
South Bačka	0.38	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.66	1.00	1.00	1.00	1.00	0.12	1.00	1.00
North Banat	0.29	0.87	0.92	0.64	0.98	0.97	0.95	0.91	0.98	0.98	0.93	0.93	0.96	0.98	0.91	0.94	0.70	0.42	0.91	0.93	0.93	0.98	0.22	0.98	0.95
North Bačka	0.52	0.75	0.82	0.54	0.81	0.83	0.68	0.80	0.81	0.81	0.79	0.76	0.69	0.81	0.82	0.76	0.57	0.35	0.79	0.79	0.76	0.81	0.12	0.81	0.68
Middle Banat	0.35	0.78	0.83	0.65	0.80	0.83	0.95	0.83	0.81	0.80	0.82	0.95	0.95	0.80	0.83	0.94	0.66	0.31	0.82	0.82	0.95	0.80	0.06	0.80	0.95
Srem	0.31	0.83	0.87	0.61	0.86	0.85	0.84	0.88	0.86	0.86	0.87	0.84	0.84	0.86	0.87	0.83	0.62	0.33	0.87	0.87	0.84	0.86	0.08	0.86	0.84
Zlatibor	0.22	0.44	0.48	0.32	0.56	0.54	0.31	0.47	0.56	0.56	0.48	0.34	0.32	0.56	0.47	0.36	0.38	0.35	0.46	0.48	0.34	0.56	0.21	0.56	0.31
Kolubara	0.11	0.54	0.61	0.54	0.92	0.88	0.66	0.56	0.92	0.92	0.64	0.62	0.69	0.92	0.56	0.68	0.75	0.75	0.57	0.64	0.62	0.92	0.65	0.92	0.66
Mačva	0.04	0.41	0.42	0.23	0.43	0.39	0.25	0.42	0.42	0.43	0.43	0.23	0.25	0.43	0.42	0.23	0.24	0.17	0.43	0.43	0.23	0.43	0.05	0.43	0.25
Moravički	0.32	0.63	0.67	0.51	0.66	0.68	0.70	0.67	0.66	0.66	0.66	0.72	0.70	0.66	0.67	0.72	0.52	0.27	0.66	0.66	0.72	0.66	0.07	0.66	0.70
Pomoravski	0.14	0.37	0.43	0.40	0.65	0.66	0.74	0.39	0.65	0.65	0.44	0.70	0.77	0.65	0.39	0.75	0.57	0.44	0.39	0.44	0.70	0.65	0.47	0.65	0.74
Rasina	0.18	0.59	0.62	0.28	0.67	0.64	0.44	0.62	0.67	0.67	0.63	0.44	0.45	0.67	0.61	0.46	0.33	0.23	0.62	0.63	0.44	0.67	0.16	0.67	0.44
Raška	0.22	0.55	0.57	0.16	0.55	0.51	0.18	0.58	0.55	0.55	0.57	0.23	0.18	0.55	0.58	0.23	0.16	0.13	0.57	0.57	0.23	0.55	0.03	0.55	0.18
Šumadija	0.40	0.71	0.77	0.58	0.79	0.81	0.78	0.76	0.80	0.79	0.76	0.81	0.79	0.79	0.76	0.82	0.62	0.37	0.75	0.76	0.81	0.79	0.16	0.79	0.78
Bor	0.16	0.42	0.46	0.71	0.57	0.56	0.50	0.44	0.57	0.57	0.47	0.49	0.51	0.57	0.44	0.51	0.76	0.66	0.45	0.47	0.49	0.57	0.25	0.57	0.50
Braničevo	0.00	0.36	0.44	0.74	0.84	0.80	0.72	0.38	0.83	0.84	0.48	0.65	0.77	0.84	0.37	0.73	0.99	1.00	0.39	0.48	0.65	0.84	0.79	0.84	0.72
Zaječar	0.05	0.74	0.75	0.45	0.73	0.68	0.71	0.77	0.72	0.73	0.77	0.65	0.70	0.73	0.76	0.63	0.44	0.17	0.78	0.77	0.65	0.73	0.00	0.73	0.71
Jablanica	0.02	0.41	0.41	0.17	0.42	0.39	0.35	0.42	0.42	0.42	0.43	0.32	0.35	0.42	0.41	0.32	0.19	0.07	0.43	0.43	0.32	0.42	0.04	0.42	0.35
Niš	0.44	0.00	0.06	0.58	0.03	0.20	0.87	0.02	0.05	0.03	0.01	0.90	0.87	0.03	0.05	0.90	0.58	0.21	0.00	0.01	0.90	0.03	0.05	0.03	0.87
Pirot	0.17	0.48	0.51	0.47	0.55	0.54	0.49	0.50	0.55	0.55	0.51	0.48	0.49	0.55	0.50	0.49	0.50	0.36	0.50	0.51	0.48	0.55	0.14	0.55	0.49
Podunavski	0.20	0.39	0.51	0.65	1.00	1.00	0.94	0.42	1.00	1.00	0.54	0.89	1.00	1.00	0.42	1.00	1.00	1.00	0.42	0.54	0.89	1.00	1.00	1.00	0.94
Pčinja	0.10	0.69	0.72	0.00	0.81	0.69	0.00	0.72	0.80	0.81	0.74	0.03	0.02	0.81	0.71	0.05	0.08	0.21	0.72	0.74	0.03	0.81	0.22	0.81	0.00
Toplica	0.01	0.23	0.24	0.14	0.24	0.23	0.28	0.24	0.24	0.24	0.24	0.26	0.28	0.24	0.24	0.25	0.15	0.05	0.24	0.24	0.26	0.24	0.03	0.24	0.28

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