

# Regional Analysis of Youth Unemployment in Serbia

*Scientific paper*

UDC 331.56-053.6.

**KEY WORDS:** youth unemployment, regional disparities, economic crisis

**ABSTRACT** - The youth unemployment represents a global economic and social issue, since the rate of youth unemployment has been consistently higher than the rate of the adult population unemployment for several decades. Especially after the global economic crisis, the position of young people on the labour market has further deteriorated, due to the increasing youth unemployment rates causing severe problems of poverty and social exclusion for the young. In Serbia, problems of poor economic performance of a transition economy, along with political instability, regional disparities and deficits of the education system, the youth unemployment is becoming an alarming problem. The aim of the paper is to present the situation of youth unemployment across the regions of Serbia, compared to the indicators of economic performance in order to assess the relation between youth unemployment rates and the most important objective indicators of social and economic development. The results of the research have been obtained by using relevant statistical methods such as descriptive statistics and analysis of variance.

*Znanstveni prispevek*

UDK 331.56-053.6.

**KLJUČNE BESEDE:** brezposelnost mladih, regionalne razlike, ekonomska kriza

**POVZETEK** - Brezposelnost mladih predstavlja globalni ekonomski in družbeni problem, še posebej zaradi dejstva, da je v zadnjih nekaj desetletjih stopnja brezposelnosti mladih višja od stopnje brezposelnosti odrasle populacije. Položaj mladih na trgu dela je izrazito nazadoval zaradi ekonomske krize, katere posledica je višanje stopnje brezposelnosti mladih, kar povzroča resne težave v smislu revščine in družbene izključenosti mladih. V Srbiji, kjer je gospodarstvo v tranziciji, politična nestabilnost, regionalne razlike in oslavljen izobraževalni sistem, nezaposlenost mladih postaja alarmanten problem. Cilj tega prispevka je prikazati stanje brezposelnosti mladih glede na regije v Srbiji v primerjavi s kazalniki ekonomske učinkovitosti, z namenom ugotoviti relacijo med stopnjo brezposelnosti mladih in najpomembnejšimi kazalniki družbenega in gospodarskega razvoja. Do rezultatov raziskave smo prišli z uporabo relevantnih statističnih metod – deskriptivne statistike in analize variance.

## 1 Introduction

The youth unemployment problem has been recognized as a global concern, since the rates of youth unemployment are much higher (on average twice, or even three times) than those of adults in most countries in the world – developed, developing and transition countries. Throughout the world, young people (aged 15 – 24 years) have to face severe problems when looking for a job for the first time. The specificity of their situation relates to the fact that they are in a certain kind of transitional state in life, since they find themselves moving from school to work and from their family homes to living on their own. Their labor market prospects are seemingly worse than those of adults, since they mostly have fewer skills, less experience and therefore lower productivity and qualifications, leading to lower wages and weaker work contracts. The yo-

ung in developing countries face more serious problems in their integration into labor market, due to substantial levels of underemployment and poor-quality jobs, while in transition countries the unemployment rates have grown as a result of a large drop in output caused by moving towards market economies (O'Higgins, 2001).

Defining youth unemployment is not an easy task, since there are huge variations between countries in defining the youth as well as the unemployment terms. The United Nations define youth as the age group between 15 and 24, further dividing it into teenagers (15–19 years) and young adults (20–24 years old). However, individual countries' official statistics define the age limits differently. On the other hand, the most widely used definition of unemployment is that the unemployed comprise all persons that are without work, available for work and are actively seeking work (during the previous short reference period), (ILO, 1982). However, the problem arises from the fact that not all countries include students actively looking for a job as a labor force, while there are differences in treating the inactive youth – the young people not looking for a job and not being in education.

There have been many attempts in the existing literature to determine the precise causes of youth unemployment and estimate their effects on the unemployment rates. Bruno et al. (2013) specify four groups of causes: macroeconomic cyclical conditions; demographic and structural conditions; the impact of policies and institutions; and fourth, variables that refer to human capital, skill mismatch and school-to-work transition processes. Considering the first group of variables (GDP growth, aggregate demand, overall unemployment), it is emphasized that youth unemployment rates are more cyclically variable than adult unemployment rates (O'Higgins, 2001, Ryan, 2001). There are several potential explanations for this increased sensitivity: young people are more likely to leave their jobs voluntarily, it is cheaper for the companies to fire young people than old workers, and young people do not have a proper legislative protection from losing their job. Aggregate labor market conditions have a great influence on the youth unemployment rates, since the correlation between youth and adult unemployment rates is very high. According to Blanchflower and Freedman (2000), youth unemployment has a disproportionately large response to changes in the overall unemployment. The second group of youth unemployment causes relates to demographic and structural factors: the percentage of young people in the population, age structure, migration, which determine the size of the youth labor force. Different employment policies and institutions (labor taxes, unemployment benefits, minimum wages, employment protection legislation, and labor market flexibility) represent the third group of determinants. Although OECD (2006) analysis implies that two-thirds of non-cyclical unemployment changes over two decades can be explained by changes in policies and institutions, Bell and Blanchflower (2010) have found no evidence that more job protection, higher unemployment benefits or more union power affect youth unemployment rates in the EU. Finally, one of the ways to fight growing youth unemployment is to increase investment in human capital, since there is a strong link between educational attainment and employment outcomes. However, even highly educated young people lack an important component of human capital – job specific experience, also called “youth experience gap”, that reduces the employability of young people (Bruno et al, 2013).

Considering a high cyclical dependence of youth unemployment, a vast amount of recent literature has been dealing with the effects of the world financial crisis on the dynamics of youth unemployment rates (Bell and Blanchflower, 2011; O'Higgins, 2012; Marelli et al, 2012). Most of these studies have confirmed that the impact of financial crisis on youth labor market has been rather severe throughout the world. According to O'Higgins (2010), young people are clearly the major losers from the crisis throughout the European Union, Canada and the United States, most serious problem being the long-term unemployment, which causes loss of experience and human capital and withdrawal of young people from the labor market. Based on the analyses of panel data from high income OECD countries during the period 1981-2009, Bruno et al. (2013) have found that the impact of financial crisis on youth unemployment rates is large, both in the short and long run, while the impact of the crisis is 1.9-times higher on the youth unemployment rates than the overall unemployment rates in the short run. The most recent data imply that in most European countries both employment and participation rates are falling down since the onset of recession for the young, and are lower in 2013 than they were in 2008, with especially high youth unemployment rates in Southern Europe (over 50%) (Bell and Blanchflower, 2014).

The aim of this paper is to present the state of youth unemployment in one of the Southeastern transition countries, severely hit by the crisis - Serbia. Taking into account the existing regional disparities in Serbia, as well as the fact that countries with a high level of regional variation in adult unemployment tend to be characterized by even higher disparities in employment opportunities for young people (O'Higgins, 2000), the paper will focus on the regional dimension of youth unemployment. Studies of regional unemployment imply that regional unemployment differentials are wide and persistent, and low unemployment regions tend to cluster close to one another (Marelli et al., 2012). Different levels of human capital or specific institutional features can be important factors of regional youth unemployment rates (Longhi et al., 2005; Marelli and Signorelli, 2008). In transition countries, there has been a general tendency to increase the regional disparities and divide the regions into two groups: a small group of rather well to do regions (mainly consisting of large cities and border regions) and a larger group of poorer regions (Huber, 2007). In this paper, the youth unemployment will be analysed across the regions and counties of Serbia and compared to the indicators of economic performance in order to assess the relation between youth unemployment rates and the most important objective indicators of social and economic development. The paper is structured as follows: the following section briefly explains research methodology and main hypotheses; the next section presents research results and analysis, which are followed by the concluding remarks.

## **2 Research Methodology and Development of Hypotheses**

The analysis of youth unemployment in Serbia will be carried out by analysing the relationship between youth unemployment and relevant social and economic indicators at: (1) county level, and (2) region level.

According to the Statistical Office of RS, there are 30 counties in Serbia grouped within five regions, where City of Belgrade has the status of a special regional unit, 7 counties are located in the territory of the AP Vojvodina and 5 counties in Kosovo and Metohija (Statistical Office of the RS, pp. 19). As there are no available data for Kosovo and Metohija, further analysis will encompass 25 counties and four regions in the Republic of Serbia.

Indicators of social and economic conditions in counties in Serbia included in the analysis are: Participation of youth in the total population, Number of employees per 1,000 inhabitants, Number of unemployed per 1000 inhabitants, Average income in RSD, The aging index (the ratio between population aged 60 and over and the population aged 0 to 19 years), the Share of highly educated and the amount of Investment in fixed assets per capita. The values of the above indicators at the regional level are presented in Table 1, and their descriptive statistics in Table 2.

Table 1. The values of the observed indicators on the regional level

Region	Participation of youth in the total population	Number of employees per 1,000 inhabitants	The aging index	Number of unemployed per 1000 inhabitants	Average income in RSD	Share of highly educated	Investment in new fixed assets per capita (000) RSD
Belgrade region	11.01%	283	108.62	65	54,103.00	16.85%	142.616
Vojvodina region	11.96%	181	116.02	104	42,935.00	7.86%	64.296
Sumadija and West Serbia region	12.02%	145	112.84	123	37,425.00	5.97%	34.709
South and East Serbia region	11.76%	144	119.93	128	37,786.00	6.36%	33.735
Serbia	11.71%	187	114.32	107	43,932.00	9.07%	67.366

Source: Statistical Office of the Republic of Serbia, Municipalities and regions in the Republic of Serbia 2014.

Note: Values of indicators on the county level are presented in Annex.

Table 2. Descriptive measures of the observed indicators

Region		The aging index	Number of employees per 1,000 inhabitants	Average income in RSD	Share of highly educated	Participation of youth in the total population	Investment in new fixed assets per capita (000) RSD	Number of unemployed per 1000 inhabitants
Belgrade region	Mean	117.38	283.00	54,103.00	0.169	0.110	123.60	65.00
Vojvodina region	Mean	113.04	174.42	40,997.14	0.068	0.119	45.50	103.14
	SD	10.63	31.02	4,075.86	0.023	0.002	39.46	12.07
Sumadija and West Serbia region	Mean	117.10	146.50	37,263.50	0.059	0.119	28.35	120.37
	SD	19.52	17.30	1,624.87	0.009	0.006	23.95	21.88
South and East Serbia region	Mean	130.08	145.44	37,512.55	0.055	0.116	31.58	128.44
	SD	34.27	19.82	5,005.91	0.018	0.0102	21.25	40.32

Source: Authors' calculation.

The first part of the analysis will be focused on determining relations between the economic indicators in the observed county and their implications in terms of the low youth participation within the total population and high values of the aging index. Additionally, the impact of economic indicators on the share of highly educated is going to be determined. The logic of the analysis is based on the fact that the poor economic indicators affecting the demographic indicators in terms of low birth rate, a smaller number of young people in the county, a higher aging index and eventually, migration of the highly educated population in counties with better economic indicators. In accordance with the aim of the analysis, we defined the following hypotheses:

*Hypothesis 1:* The indicator of youth participation in the total population is correlated to the number of unemployed per 1000 inhabitants.

*Hypothesis 2:* There is a difference in the share of the highly educated, investment in fixed assets per capita, number of unemployed per 1000 inhabitants and average wages between the counties.

In addition to county descriptive statistics, to test the above hypotheses, relevant statistical methods will be applied: correlation analysis and One-way ANOVA (analysis of variance).

The second part of the analysis will be conducted on the regional level and focused on determining the relations between youth unemployment and number of unemployed per 1000 inhabitants, and youth participation within the total population. Concerning this part of the analysis, the following hypothesis was defined:

*Hypothesis 3:* Distribution of youth unemployment by regions is compatible with the distribution of youth participation within the total population, as well as the share of the unemployed per 1000 inhabitants.

For the purpose of testing the relations between these indicators, Chi-Square Test will be applied. Chi-square test belongs to a group of tests by which it is possible to test a statistically significant correlation in the frequencies of the two attributive variables or between the received (observed) frequencies and frequencies that are expected. For the purpose of our analysis, Chi-square test will be applied in the former sense.

### 3 Research Results and Discussion

The first part of the analysis is based on the county level data. In order to test the relations between the youth participation rate and relevant socio-economic indicators of the counties, the Bivariate Pearson correlation coefficients between the observed indicators were calculated (Table 3).

According to the results, there is the highest correlation level between Participation of youth in the total population and The aging index (-0.876). This correlation is negative, as it was expected. However, the estimated value of the Pearson correlation coefficient between Participation of youth in the total population and Number of

unemployed per 1000 inhabitants is positive (0.317), but not statistically significant (p-value equals 0.122), which does not support the first hypothesis.

Table 3. The correlation matrix

Indicators	The aging index	Number of employees per 1,000 inhabitants	Average income in RSD	Share of highly educated	Participation of youth in the total population	Investment in new fixed assets per capita	Number of unemployed per 1000 inhabitants
The aging index	1						
Number of employees per 1,000 inhabitants	0.018 (0.932)	1					
Average income in RSD	-0.076	0.741**	1				
	0.719	0.000					
Share of highly educated	-0.041	.828**	.661**	1			
	0.846	0.000	.000				
Participation of youth in the total population	-0.876**	-0.291	-.313	-0.211	1		
	0.000	0.158	.128	0.311			
Investment in new fixed assets per capita (000) RSD	-0.134	.610**	0.864**	.607**	-0.164	1	
	0.522	0.001	0.000	0.001	0.434		
Number of unemployed per 1000 inhabitants	-0.020	-.480*	-0.615**	-0.253	0.317	-0.352	1
	0.923	0.015	0.001	0.223	0.122	0.085	

\*\*Correlation is significant at the 0.01 level (2-tailed).

\*Correlation is significant at the 0.05 level (2-tailed).

Testing the difference in mean values of the observed indicators between regions, was also based on the county level. The adequate statistical method for this purpose is One-way ANOVA, since it implies one factor of the variability (region in this case). The mean values and dispersion of the selected indicators in the regions are presented in Table 4.

The test results show that regions differ significantly according to Number of employees per 1,000 inhabitants, Average income in RSD, Share of highly educated and Investment in new fixed assets per capita (000)RSD. At the same time, variation in indicators such as Number of unemployed per 1000 inhabitants, Participation of youth in the total population and The aging index are not statistically significant between regions in the Republic of Serbia.

The analysis of youth unemployment is based on the regional level data, because data about the key variable - Number of youth unemployed is available only at that level of the territorial division of the Republic of Serbia, i.e. Statistical Office of the Republic of Serbia does not provide the data about Number of youth unemployed in the counties.

Table 4. The results of the One-way ANOVA

Indicator	The source of the variability	Sum of Squares	df	Mean Square	F	Sig.
The aging index	Between Groups	1316.457	3	438.819	.723	.549
	Within Groups	12743.686	21	606.842		
	Total	14060.143	24			
Number of employees per 1,000 inhabitants	Between Groups	19942.063	3	6647.354	12.674	0.000
	Within Groups	11013.937	21	524.473		
	Total	30956.000	24			
Average income in RSD	Between Groups	2.999E8	3	9.998E7	6.589	0.003
	Within Groups	3.186E8	21	1.517E7		
	Total	6.186E8	24			
Share of highly educated	Between Groups	.012	3	.004	12.811	0.000
	Within Groups	.007	21	.000		
	Total	.019	24			
Participation of youth in the total population	Between Groups	.000	3	.000	.590	0.628
	Within Groups	.001	21	.000		
	Total	.001	24			
Investment in new fixed assets per capita (000) RSD	Between Groups	8835.684	3	2945.228	3.643	0.029
	Within Groups	16976.462	21	808.403		
	Total	25812.146	24			
Number of unemployed per 1000 inhabitants	Between Groups	5303.606	3	1767.869	2.154	0.124
	Within Groups	17234.954	21	820.712		
	Total	22538.560	24			

Source: Authors' calculation.

Table 5. The values of the indicators related to the youth unemployment

Region	Population	Youth population	Number of unemployed	Number of youth unemployed	Youth unemployed Share
Belgrade region	1,659,440	182,767	106,208	19,394	18.26%
Vojvodina region	1,931,809	230,998	150,374	25,458	16.93%
Sumadija and Vest Serbia region	2,031,697	244,122	127,397	20,369	15.99%
South and East Serbia region	1,563,916	183,848	112,700	19,952	17.70%
Serbia	7,186,862	841,735	496,679	85,173	17.15%

Source: Statistical Office of the Republic of Serbia, the Labour Force Survey 2014.

According to our hypothesis, regional differences of the indicator Number of youth unemployed should follow variations between regions of indicators Number of unemployed per 1000 inhabitants and Participation of youth within the total population.

Table 6. The regional structure of the indicators related to the youth unemployment

Region	Youth population	Number of unemployed	Number of youth unemployed
Belgrade region	21.71%	21.38%	22.77%
Vojvodina region	27.44%	30.28%	29.89%
Sumadija and Vest Serbia region	29.00%	25.65%	23.91%
South and East Serbia region	21.84%	22.69%	23.43%
Serbia	100%	100%	100%

Source: Statistical Office of the Republic of Serbia.

Results of the Chi-square test confirm the hypothesis, i.e. there are no differences in regional distribution between the Number of youth unemployed and Youth population (realized value of the Chi-square test equals 1.438, with the significance 0.695) and also between the Number of youth unemployed and Number of unemployed (realized value of the Chi-square test equals 0.236, with the significance 0.971). The obtained results lead to the additional conclusion that the indicator Number of youth unemployed is more correlated with Number of unemployed.

## 4 Conclusion

The paper analysed data from 25 counties in Serbia, grouped in four regions. According to the results of the Bivariate Pearson correlation between youth participation and relevant socio-economic indicators of the counties, the highest correlation level (negative one) is between the indicators Participation of youth in the total population and The aging index. However, the estimated value of the Pearson correlation coefficient between the Participation of youth in the total population and Number of unemployed per 1000 inhabitants is positive, but not statistically significant.

Test results of the One-way ANOVA showed that there are significant differences between counties according to the Number of employees per 1,000 inhabitants, Average income in RSD, Share of highly educated and Investment in new fixed assets per capita (000)RSD. At the same time, variation in indicators such as Number of unemployed per 1000 inhabitants, Participation of youth in the total population and The aging index are not statistically significant between the observed counties in the Republic of Serbia. So, regardless of other economic indicators, unemployment in Serbia is approximately uniform in all districts, as well as the unfavourable age structure that indicates the aging of population.

Results of the Chi-square test suggest that there are no differences in regional distribution between the Number of youth unemployed and Youth population. Furthermore, the conclusion leads to the fact that the Number of youth unemployed is more correlated with the Number of unemployed at the regional level indicator.



*Dr. Jelena Stanković, dr. Marija Džunić, dr. Vesna Janković-Milić*

## **Regionalna analiza brezposelnosti mladih v Srbiji**

*Prispevek se ukvarja s problemom brezposelnosti mladih, ki je, kot posledica svetovne gospodarske krize, naraščajoč problem na globalni ravni. Stopnje brezposelnosti mladih so veliko višje (povprečno dvakrat ali celo trikrat) kot stopnje brezposelnosti odraslih v večini držav na svetu – v razviti državah, v državah v razvoju in v tranzicijskih državah. Mladi se soočajo s hudimi težavami na trgu dela, saj se nahajajo v t. i. prehodnem življenjskem obdobju, v katerem se iz šole preusmerjajo na delovna mesta in iz okrilja družinskega zavetja v samostojno življenje. Obeti na trgu dela so zanje videti precej slabše kot za odrasle, saj imajo večinoma manj znanja, manj izkušenj in zato tudi nižjo produktivnost in kvalifikacije, kar vse vodi do nižjih plač in krajših pogodb o zaposlitvi. Mladi se v državah v razvoju soočajo s še resnejšimi težavami pri vključevanju na trg dela zaradi znatnejšega deleža nezaposlenosti in slabe kakovosti delovnih mest. Stopnje brezposelnosti mladih v tranzicijskih državah so prav tako narasle zaradi velikega zmanjšanja produktivnosti, ki je posledica približevanja tržnemu gospodarstvu. Cilj prispevka je predstaviti stanje brezposelnosti mladih v eni od jugovzhodnih držav v tranziciji, ki jo je kriza močno prizadela – v Srbiji. Tu postaja nezaposlenost mladih, predvsem zaradi slabe ekonomske uspešnosti tranzicijskega gospodarstva, politične nestabilnosti, regionalnih razlik in primanjkljajev izobraževalnega sistema, zelo zaskrbljujoč problem. Ob upoštevanju obstoječih regionalnih razlik v Srbiji se bomo v prispevku osredotočili ravno na regionalno razsežnost brezposelnosti mladih.*

*Najpogosteje uporabljena definicija brezposelnosti mladih je, da so brezposelne vse tiste mlajše osebe, ki so brez dela, na voljo za delo in ga aktivno iščejo, medtem ko definicija Združenih narodov zajema mlade kot starostno skupino med 15. in 24. letom starosti, ki se naprej delijo na najstnike (15–19 let) in mlade odrasle (20–24 let). Hkrati pa uradne statistike posameznih držav lahko definirajo starostne meje tudi drugače.*

*Problem brezposelnosti mladih izvira iz leta 1970 zaradi velikega povečanja oskrbe mlade delovne sile, kot posledice vstopa »baby boom« generacije na trg dela (Blanchflower in Freeman, 2000). Čeprav je večina analitikov napovedovala, da bo to le začasna težava, zlahka obvladana s strani političnih pobud za povečanje izobraževanja in usposabljanja, je omenjeni problem ne le trajal, ampak se je še poslabšal kljub ukrepom, ki so bili namenjeni izboljšanju obetov za mlade na trgu dela. Tehnološke spremembe, demografsko inducirani upadi delovne populacije, strukturne spremembe in več let izobraževanja niso pomagali pri reševanju problema.*

*V obstoječi literaturi je navedenih veliko poskusov za določitev natančnih vzrokov brezposelnosti mladih in njihovega vpliva na stopnje brezposelnosti. Upoštevajoč makroekonomske ciklične pogoje (rast BDP, skupno povpraševanje, povprečna brezposelnost) se poudarja, da so stopnje brezposelnosti mladih bolj ciklično spremenljive kot brezposelnosti odraslih: za mlade je bolj verjetno, da prostovoljno zapustijo svoja*

delovna mesta, za podjetja je ceneje odpuščati mlade kot starejše delavce in mladi ljudje nimajo ustrezne zakonodajne zaščite pred izgubo delovnega mesta. Skupni pogoji na trgu dela imajo velik vpliv na stopnjo brezposelnosti mladih, saj je zelo visoka korelacija med brezposelnostjo mladih in odraslih. Druga skupina vzrokov brezposelnosti mladih, ki se nanaša na demografske in strukturne dejavnike je: odstotek mladih v starostni strukturi prebivalstva in migracije, ki določajo številčnost delovne sile mladih. Različne zaposlitvene politike in institucije (davki, ugodnosti pri brezposelnosti, minimalne plače, zakonodaja o varstvu zaposlitve in fleksibilnosti na trgu dela) predstavljajo tretjo skupino dejavnikov. Nenazadnje, eden od načinov boja proti vse večji brezposelnosti mladih je povečanje naložb v človeški kapital, saj obstaja močna povezava med stopnjo izobrazbe oz. znanjem in delovnimi rezultati zaposlenih. Hkrati pa tudi visoko izobraženim mladim manjka pomemben sestavni del človeškega kapitala – konkretne delovne izkušnje.

Glede na velika ciklična nihanja, se je ogromno avtorjev sodobne literature ukvarjalo z učinki svetovne finančne krize na dinamično stopnjo brezposelnosti mladih. V večini teh študij so potrdili, da je bil vpliv finančne krize na trgu dela mladih močan po vsem svetu, zaradi česar so mladi glavne žrtve svetovne gospodarske krize. Najhujši problem je dolgoročna brezposelnost, ki povzroča izgubo izkušenj in človeškega kapitala ter umik mladih s trga dela. Nedavne študije kažejo, da je vpliv finančne krize na stopnjo brezposelnosti mladih velik, tako na kratek kot na dolgi rok; tako je kriza povzročila 1.9-krat višjo stopnjo brezposelnosti mladih glede na splošno stopnjo brezposelnosti na kratek rok (Bruno et al., 2013). Še posebej so stopnje brezposelnosti mladih visoke v južni Evropi (več kot 50 %).

Ob upoštevanju obstoječih regionalnih razlik v Srbiji, kakor tudi dejstvo, da je za države z visoko stopnjo regionalne razlike v brezposelnosti odraslih značilna še večja razlika v zaposlitvenih možnostih za mlade (O'Higgins, 2000), se prispevek osredotoča na regionalno razsežnost brezposelnosti mladih. Različne ravni človeškega kapitala ali institucionalnih posebnosti so lahko pomembni dejavniki regionalne brezposelnosti mladih (Longhi et al., 2005; Marelli in Signorelli, 2008). V tranzicijskih državah je bila splošna težnja k povečanju regionalnih razlik in k razhajanju regij v dve skupini: majhno skupino s precej dobro zaposlenostjo (večinoma sestavljena iz velikih mest in obmejnih regij) in večjo skupino revnejših regij (Huber, 2007).

V prispevku je brezposelnost mladih analizirana po posameznih regijah in okrajih Srbije in primerjana s kazalniki gospodarske uspešnosti, da bi lahko ocenili razmerje med brezposelnostjo mladih in najpomembnejšimi objektivnimi kazalniki družbenega in gospodarskega razvoja. Analiza temelji na podatkih iz 25 okrajev v Srbiji, združenih v štiri regije. Kazalci družbenih in gospodarskih razmer v srbskih okrajih, ki so vključeni v analizo, so: število mladih v celotni populaciji, število zaposlenih na 1000 prebivalcev, število brezposelnih na 1000 prebivalcev, povprečni dohodek, indeks staranja (razmerje med prebivalci, starimi 60 let in več, in prebivalci v starosti od 0 do 19 let), delež visoko izobraženih in znesek naložb v osnovna sredstva na prebivalca.

Prvi del analize je osredotočen na ugotavljanje odnosov med gospodarskimi kazalci v opazovanem okraju in posledicami le-teh v smislu nizkega števila mladih v

celotni populaciji in visoke vrednosti indeksa staranja. Logika analize temelji na dejstvu, da slabi gospodarski kazalniki vplivajo na demografske kazalnike v smislu nizke rodnosti, manjšega števila mladih v okrajih, višjega indeksa staranja in, posledično, migracij visoko izobražene populacije v okrožja z boljšimi ekonomskimi kazalci. V ta namen so bili izračunani bivariantni Pearsonovi koeficienti korelacije med kazalniki.

Glede na rezultate je najvišja stopnja korelacije med številom mladih v celotni populaciji in indeksom staranja (-0,876). Ta korelacija je negativna, kot je bilo pričakovano. Ocenjena vrednost Pearsonovega koeficienta korelacije med številom mladih v celotni populaciji in številom brezposelnih na 1000 prebivalcev pa je pozitivna, vendar ni statistično pomembna. Testiranje razlike v povprečni vrednosti kazalnikov med regijami temelji tudi na okrajni ravni. Ustrezna statistična metoda za ta namen je t. i. enosmerna analiza variance oz. »One-way ANOVA«, saj ta vključuje en faktor variabilnosti (v tem primeru - regija). Rezultati enosmernega ANOVA testa je pokazala, da obstajajo pomembne razlike med državami glede na število zaposlenih na 1.000 prebivalcev, povprečni dohodek v RSD, deležem visoko izobraženih in naložbami v nova osnovna sredstva na prebivalca (000) RSD. Istočasno pa spremembe v kazalnikih: število brezposelnih na 1000 prebivalcev, število mladih v celotni populaciji in indeks staranja niso statistično pomembne med opazovanimi okraji v Republiki Srbiji. Torej, ne glede na ostale gospodarske kazalnike, je brezposelnost v Srbiji približno enaka v vseh okrajih, enaka pa je tudi neugodna starostna struktura, ki kaže na staranje prebivalstva.

Drugi del analize je bil izveden na regionalni ravni in je osredotočen na ugotavljanje odnosov med brezposelnostjo mladih in številom brezposelnih na 1000 prebivalcev ter številom mladih v celotni populaciji. Za preizkus odnosov med temi kazalniki smo uporabili t. i. test hi-kvadrat. Ta test spada v skupino testov, s katerimi je mogoče preveriti, ali obstaja statistično pomembna korelacija pri frekvencah dveh atributivnih spremenljivk oz. med pridobljenimi (opaženimi) in pričakovanimi frekvencami. Rezultati testa hi-kvadrat potrjujejo, da ni pomembnih razlik v regionalni porazdelitvi med številom mladih brezposelnih in celotno populacijo mladih (vrednost testa je bila 1,438, statistična pomembnost: 0,695), in istočasno ni pomembnih razlik med številom mladih brezposelnih in številom brezposelnih na 1000 prebivalcev (vrednost testa hi-kvadrat je bila 0,236, statistična pomembnost: 0,971). Dobljeni rezultati privedejo do dodatnih ugotovitev, da je število mladih brezposelnih bolj povezano s kazalnikom števila brezposelnih na 1000 prebivalcev.

## LITERATURE

1. Bell, D. and Blanchflower, D. (2010). Youth Unemployment: Deja Vu? IZA Discussion Papers.
2. Bell, D. and Blanchflower, D. (2011). Young people and the Great Recession. Oxford Review of Economic Policy, 27, pp. 241–267.
3. Bell, D. and Blanchflower, D. (2014). Youth Joblessness. IZA Discussion Paper No. 4705.
4. Blanchflower, D. and Freedman, R. (2000). Youth Employment and Joblessness in Advanced Countries (eds). Chicago, Illinois: University of Chicago Press and NBER.

5. Bruno, G., Choudhry, M., Marelli, E. and Signorelli, M. (2013). The short-run and long-run impacts of financial crises on youth unemployment in OECD countries. Paper presented at the 28th National Conference of Labour Economics, Associazione Italiana Economisti del Lavoro, Rome.
6. Huber, P. (2007). Regional Labour Market Developments in Transition: A Survey of the Empirical Literature. *European Journal of Comparative Economics*, 4, No. 2, pp. 263–298.
7. International Labour Organization (ILO) (1982). Resolutions Concerning Economically Active Population, Employment, Unemployment and Underemployment, Adopted by the 13th International Conference of Labour Statisticians, para. 10.
8. Longhi, S., Nijkamp, P. and Traistaru, I. (2005). Is Sectoral Diversification a Solution to Unemployment? Evidence from EU Regions. *Kyklos*, 58, No. 4, pp. 591–610.
9. Marelli, E. and Signorelli, M. (2008). Institutional Change, Regional Dynamics and Economic Performance in Transition. *Review of Economic Conditions in Italy*, No. 3, pp. 371–403.
10. Marelli, E., Patuelli, R. and Signorelli, M. (2012). Regional Unemployment in the EU Before and After the Global Crisis. *Post-Communist Economies*, 24, No. 2, pp. 155–175.
11. O’Higgins, N. (2001). Youth unemployment and employment policy: A global perspective. Geneva: ILO.
12. OECD (2006), *Employment Outlook*, Paris.
13. O’Higgins, N. (2010) *The Impact of the Economic and Financial Crisis on Youth Employment: Measures for Labour Market Recovery in the European Union, Canada and the United States*, Employment Working Paper 70, Geneva: ILO.
14. Ryan, P. (2001). The school-to-work transition. A cross-national perspective. *Journal of Economic Literature*, 39, No 1, pp. 34–92.
15. Statistical Office of the Republic of Serbia (2014). *Statistical Yearbook of the Republic of Serbia 2014*. Belgrade, Serbia. Retrieved on 2/21/2015 from the Internet: <http://pod2.stat.gov.rs/ObjavljenePublikacije/God/SGS2014.pdf>.
16. The Labour Force Survey. Retrieved on 2/21/2015 from the Internet: [http://webrzs.stat.gov.rs/WebSite/repository/documents/00/01/66/26/RS10\\_022\\_srb-IV\\_kvartal\\_2014\\_ARS.pdf](http://webrzs.stat.gov.rs/WebSite/repository/documents/00/01/66/26/RS10_022_srb-IV_kvartal_2014_ARS.pdf).

---

*Jelena Stanković, PhD, Assistant Professor at the University of Niš, Faculty of Economics.*  
*E-mail: jelena.stankovic@eknfak.ni.ac.rs*

*Marija Džunić, PhD, Assistant Professor at the University of Niš, Faculty of Economics.*  
*E-mail: marija\_dzunic@ni.ac.rs*

*Vesna Janković-Milić, PhD, Assistant Professor at the University of Niš, Faculty of Economics.*  
*E-mail: vaesna.jankovic@eknfak.ni.ac.rs*