

# **IMCSM Proceedings**

ISSN 2620-0597

**Volume XVII, Issue (1), (2021)**

An international serial publication for theory and  
practice of Management Science



**Editor-in-Chief: Prof. dr Živan Živković**

**Published by University of Belgrade, Technical Faculty in Bor,  
Department of Engineering Management**

**Bor, 2021**



**Conference is financially supported by  
the Ministry of Education and Science of  
the Republic of Serbia**

**Konferencija je finansijski podržana od  
Ministarstva prosvete i nauke  
Republike Srbije**

*Scientific Board (SB) of the Conference:*

**Prof. dr Živan Živković**, University of Belgrade, Technical Faculty in Bor, **president of the SB.**

**Prof. dr Ivan Mihajlović**, University of Belgrade, Technical Faculty in Bor, **vice-president of the SB.**

*Members of SB:*

**Prof. dr Vesna Spasojević Brkić**, University of Belgrade, Faculty of Mechanical Engineering, Belgrade, Serbia

**Prof. dr Peter Schulte**, Institute for European Affairs, Germany

**Prof. dr L-S. Beh**, Faculty of Economics and Administration, University of Malaya, Kuala Lumpur, Malaysia

**Prof. dr Ladislav Mura**, University of Ss. Cyril and Methodius, Trnava, Slovakia

**Prof. dr Michael Graef**, University of Applied Sciences Worms, Germany

**Prof. dr Pal Michelberger**, Obuda University, Budapest, Hungary

**Dr. Slobodan Radosavljević**, RB Kolubara, Lazarevac, Serbia

**Prof. dr Geert Duysters**, ECIS (Eindhoven Centre for Innovation Studies), Eindhoven University of Technology, Eindhoven, The Netherlands

**Prof. dr Michael. D. Mumford**, The University of Oklahoma, USA

**Prof. dr John. A. Parnell**, School of Business, University of North Carolina-Pembroke, Pembroke, USA

**Prof. dr Antonio Strati**, Dipartimento di Sociologia e Ricerca Sociale, Universities of Trento and Siena, Italy

**Prof. dr Rajesh Piplani**, Center for Supply Chain Management, Nanyang Technological University, Singapore

**Prof. dr Musin Halis**, University of Sakarya, Business and Administration Faculty, Serdivan, Turkey

**Prof. dr Rekha Prasad**, Faculty of Management Studies, Banaras Hindu University, India

**Prof. dr Ofer Zwikael**, School of Management, Marketing and International Business ANU College of Business and Economics The Australian National University, Australia

**Prof. dr Simon Gao**, Edinburg Napier University, United Kingdom

**Prof. dr Jadip Gupte**, Goa Institute of Management, India

**Prof. dr Jan Kalina**, Institute of Computer Science, Academy of Sciences, Czech Republic

**Prof. dr Jifang Pang**, School of Computer and Information Technology, Shanxi University, China

**Prof. dr David Tuček**, Tomas Bata University in Zlin, Czech Republic

**Prof. dr Jyrki Kangas**, University of Eastern Finland, School of Forest Sciences, Joensuu Campus

**Prof. dr Natalya Safronova**, Russian Presidential Academy of National Economy and Public Administration (RANEPA), Russia

*Organizational Board of the Conference:*

**Prof. dr Ivan Jovanović**, president of the Organizational Board

**Assoc. prof. dr Marija Panić**, vice-president of the Organizational Board

**Assoc. prof. dr Predrag Đorđević**, vice-president of the Organizational Board

**Prof. dr Đorđe Nikolić**, member of the Organizational Board

**Assoc. prof. dr Isidora Milošević**, member of the Organizational Board

**Assoc. prof. dr Milica Veličković**, member of the Organizational Board

**Enisa Nikolić**, English language teacher, member of the Organizational Board

**Assoc. prof. dr Nenad Milijić**, member of the Organizational Board

**Assoc. prof. dr Aleksandra Fedajev**, member of the Organizational Board

**Asst. prof. dr Sanela Arsić**, member of the Organizational Board

**Asst. prof. dr Ivica Nikolić**, member of the Organizational Board

**Asst. prof. dr Danijela Voza**, member of the Organizational Board

**Asst. prof. dr Milena Jevtić**, member of the Organizational Board

**Andelka Stojanović, MSc**, teaching assistant, member of the Organizational Board

**Branislav Ivanov, MSc**, teaching assistant, member of the Organizational Board

**Momir Popović, MSc**, teaching assistant, member of the Organizational Board

**Adrijana Jevtić, MSc**, teaching assistant, member of the Organizational Board

*Organizing Board of the Student's symposium:*

**MSc Momir Popović**, teaching assistant, president of the Students Symposium Organizing Board.

**MSc Adrijana Jevtić**, teaching assistant, vice-president of the Students Symposium Organizing Board.

International May Conference on Strategic Management (IMCSM21)

**Edition:** IMCSM Proceedings; Volume XVII, Issue (1) (2021)

**ISSN 2620-0597**

**Publisher:** University of Belgrade, Technical Faculty in Bor, Management Department

**In front of the publisher:** Prof. dr Nada Štrbac, Dean of Technical Faculty in Bor

**Editor-in-Chief:** Prof. dr Živan Živković, Technical Faculty in Bor

**Technical Editor:** Assoc. prof. dr Nenad Milijić, Technical Faculty in Bor

**Technical Co-Editor:** Asst. prof. dr Ivica Nikolić, Technical Faculty in Bor

**Technical Co-Editor:** MSc Momir Popović, teaching assistant, Technical Faculty in Bor

**Technical Co-Editor:** Assoc. prof. dr Predrag Đorđević, Technical Faculty in Bor

**Published in 150 copies**

**Bor, 2021**



## ANALYSIS OF FACTORS INFLUENCING NEETs RATES

**Andelka Stojanović\***, Ivan Mihajlović, Ivica Nikolić

*University of Belgrade, Technical Faculty in Bor, Serbia*

**Abstract:** The analysis of the factors that affect the status of NEETs in European countries was presented in the paper. NEETs are young people between the ages of 15 and 29, who are no longer in the formal education system and are unemployed or otherwise out of the labour market, and who represent a group at high risk of social exclusion. NEET research is a field in the literature gaining importance given the problems young people face during the transition to adulthood and more severe conditions for adequate labour market inclusion. The hypotheses examined in the paper refer to three groups of influencing factors: economic indicators of countries, level of education, and institutional and labour market indicators. The data analysed in the survey referred to 31 European countries and were observed in the period 2015-2019. The results confirm that all examined groups of indicators impact NEET rates and indicate those indicators whose impact is the most significant.

**Keywords:** NEET rate, economic indicators, level of education, institutional and labour market indicators

### 1. INTRODUCTION

Young people represent the essential asset of one country or region, taking into account the evident ageing of the European population. On the other hand, the youth faces numerous challenges in the transition from adolescence to the adult world. A significant problem that young people face after completing the formal education process is finding adequate employment. As a result, the number of young people who fall into the category called NEET (neither in education nor in employment or training) is increasing day by day. In the literature, the population of young people in the 15 to 29 years who are no longer in the formal education system and are unemployed or are for some other reason outside the labour market is classified as NEET.

Youth unemployment differs from adult unemployment in that young people do not have work experience and therefore represent a burden to the company in the sense of additional training that should be conducted. Also, if financial problems occur, there is a high chance that the youngest and the less experienced workers will lose their job first (Verick, 2009). In the long term, if unemployment persists, much greater discouragement develops in young people than in adults (Liotti, 2020).

States recognize the existence of youth problems when entering the labour market and try to alleviate these problems with specific measures. In addition to purely economic reasons, the high unemployment of the NEET population brings with it other serious consequences such as loss of human capital due to migration, even higher unemployment in the future, lower incomes, increased crime rate and negative psychological effects on individuals

---

\* Corresponding author: [anstojanovic@tfbor.bg.ac.rs](mailto:anstojanovic@tfbor.bg.ac.rs)

(Choundry et al., 2012). Moreover, young people often lose hope due to the inability to find a suitable job and are recognized as a highly vulnerable group (The Council of the European Union, 2013).

The paper discusses the impact of financial parameters, levels of education, institutional factors on the size of the NEET population. The impact is considered at the international level, but certain specific issues concerning NEET status in Serbia are being thought of too.

## 2. ANALYSIS OF NEET IN SERBIA

Before researching influential factors, it is important to consider the position of Serbia in relation to the European Union to point out the importance and need for such research and reveal the specifics of the Serbian NEET youth.

The share of unemployed youth is often much higher than the total share of unemployed in countries. Considering unemployment data, Liotti (2020) listed Portugal, Ireland, Italy, Greece and Spain as particularly vulnerable to high unemployment rates. However, in addition to these countries, the high unemployment rate between the ages of 15-29 includes North Macedonia, which in 2020 recorded the highest youth unemployment rate of 44.4%, followed by Slovakia with 42.2% and Spain and Sweden, which recorded a drastic increase in youth unemployment compared to the year 2019. In Spain, youth unemployment increased 32.1% in 2019 to 37.4% in 2020, while Sweden recorded an increase of 31.0% in 2019 to 36.8% in 2020. In 2020, the lowest rate of unemployed youth had Switzerland 9.1% and Netherland, 11.0%. In 2020, with a youth unemployment rate of 30.2%, Serbia belonged to countries with a high rate but recorded an improvement compared to 2019, when it was 32.2% (Eurostat, 2021).

The NEET population in Serbia has been facing great challenges in the last ten years, which are a reflection of both the socio-economic occurrences that Serbia had been facing and the dramatic social changes that society and people are experiencing. Figure 1 shows that the ratio of young people from 15 to 29 years in the total population in Serbia is the same as in Europe, meaning that nation facing serious ageing.

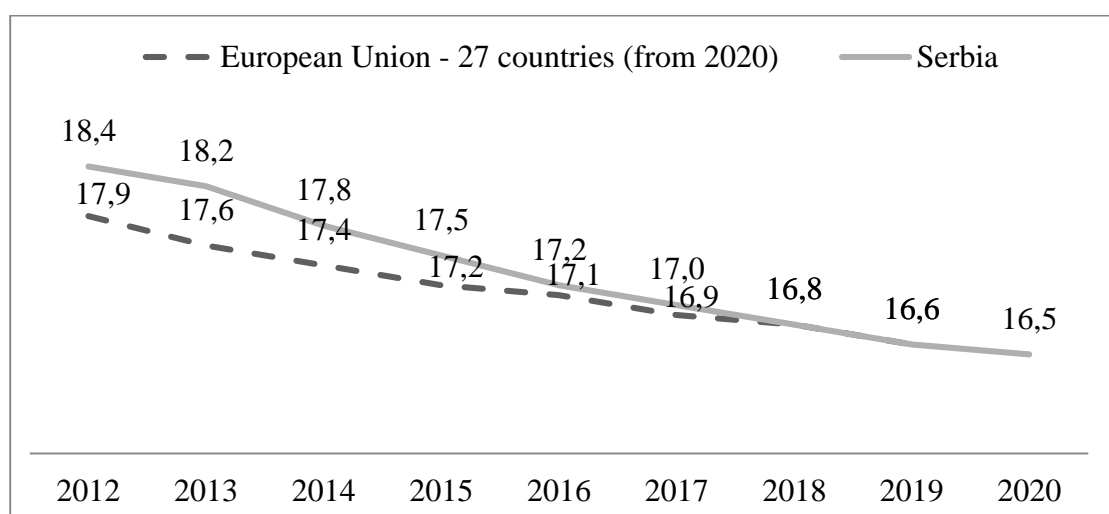


Figure 1. Ratio of young people from 15 to 29 years in the total population (Eurostat [yth\_demo\_020] retrieved 20.5.2021.)

However, the rate of youth unemployment in Serbia is still much higher than in the European Union, although there is a trend of unemployment declining, Figure 2. In its report, Nikolić et al. (2020) pointed to emigration and the issue of "brain drain" as the most dangerous consequences of poor youth employment in Serbia.

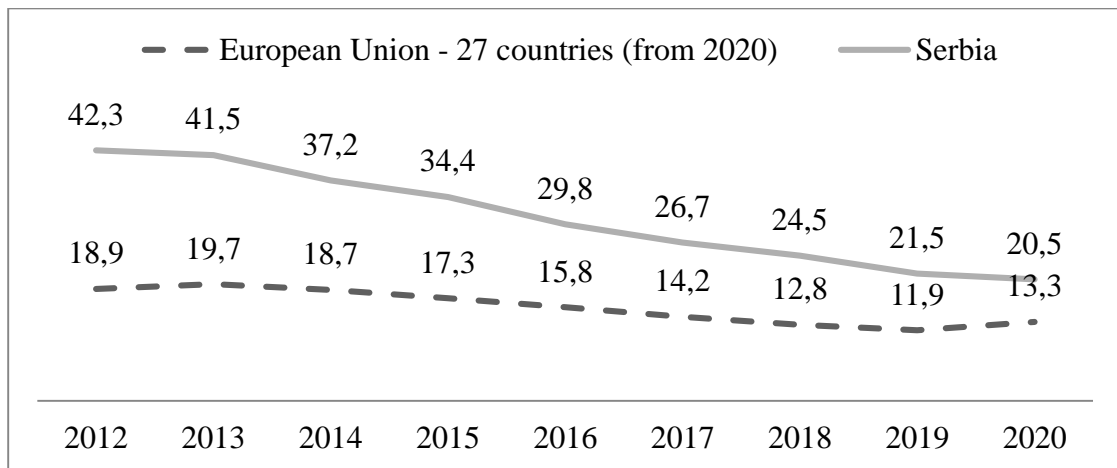


Figure 2. Youth unemployment rate (from 15 to 29 years) (Eurostat [yth\_empl\_090] retrieved 20.5.2021.)

Another consequence of low youth employment is the large share of those belonging to the NEET group. The percentage of young people aged 15 to 29 who have NEET status in Serbia in 2020 was 20%, which is an increase compared to previous years, Figure 3.

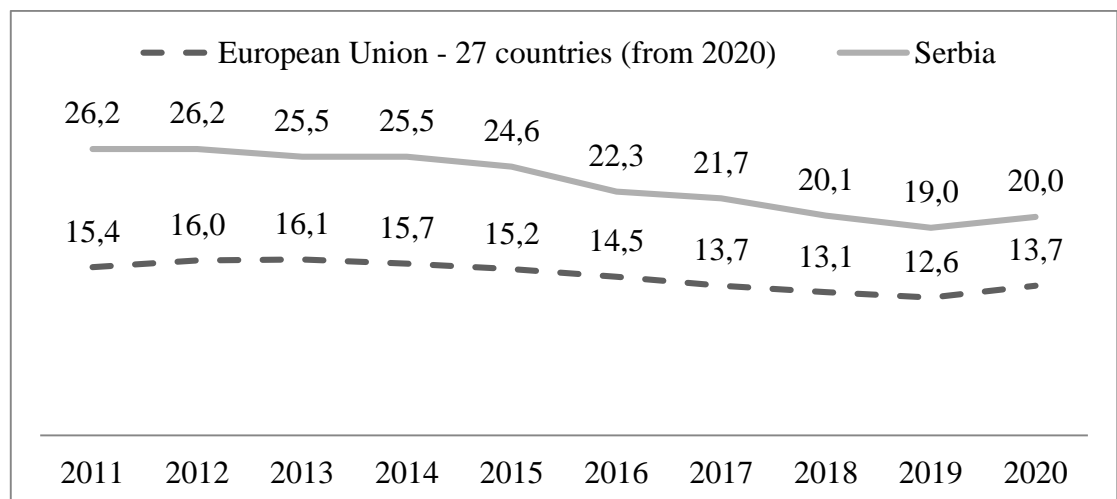


Figure 3. Young people neither in employment nor in education and training from 15 to 29 years (NEET rates) (Eurostat [yth\_empl\_150] retrieved 20.5.2021.)

Bearing in mind previous statistics, extensive desk research was conducted and has revealed a shortage of relevant strategic framework directly related to the position of vulnerable and socially excluded youth in the Republic of Serbia. After leaving the formal education system, the process of monitoring young people, especially in rural areas, is not given enough attention. The data that exist are generalized, and there is no standardized methodology for their collection and monitoring.



To define the NEET population, it is very important to know the definitions of urban and rural settlements used in the statistical classification of the population. In the last census conducted in the Republic of Serbia in 2011, the division of settlements into urban and other settlements was applied. The size of settlements and the ratio of agricultural and total population served as a criterion for classification. According to census results, 40.5% of the population lives outside urban areas, making Serbia one of the most rural countries in Europe. Research further shows that demographic trends are not favourable, especially in rural areas. Migration from rural areas is particularly pronounced in population groups aged 15–24 and 25–34, which affects the further negative shift in the age structure of the rural population. This results in that as many as 1 200 villages in Serbia are in the phase of disappearance (Gulan, 2015).

The position of NEET is covered by parts of other laws and action plans, which create certain preconditions for monitoring and proposing measures for their social inclusion. According to Statistical Office of the Republic of Serbia data, for the first quarter of 2020, the unemployment of young people aged 15-24 in the Republic has a rate of 25.5%. In the reports for 2019, this rate was 27.5% and is lower compared to previous years. In general, the contingent of young people aged 15-24 continues to decrease by 1.5% compared to 2018. In the Labor Force Survey in the Republic of Serbia, 2019, the NEET category stands out, amounting to 15.3%.

Regarding gender, the rate of vulnerable and socially excluded rural youth is higher in the female part of this population (RZS, 2020).

As stated in the Nikolić et al. (2020) report, one of the challenges for Serbian youth is education, which is slowly adapting to the needs of the labour market. It is stated that: "education system has an emphasis on learning and memory to the detriment of critical thinking", which reduces the possibility of adapting young people to the new requirements of the labour market. The early school leaving rate, i.e. the percentage of young people aged 18–24 with the highest completion of primary school, which are not included in further education or training, is 6.6% (RZS, 2020).

The Law on Youth was enacted in 2011. Young people are defined as persons from 15 years of age to 30 years of age. This document additionally defines adoption of the National Strategy for Youth; rules for the association of young people in order to improve the conditions for personal and social development, their informing and inclusion in the social life of the community; the establishment of the Youth Council as an advisory body that encourages and coordinates activities related to the development, implementation and enforcement of youth policy and proposes measures for its improvement, etc. (The Law of Youth, 2011).

This analysis provides only a general insight into the state of NEET in Serbia and indicates the need for a more detailed analysis of factors influencing the level of NEET.

### **3. LITERATURE REVIEW**

In recent years, youth unemployment has gained an important place in the literature (Kelly et al., 2013; Vasile& Anghel, 2015; Carcillo et al., 2015; Erdoğan et al., 2017; Bingöl, 2020; Liotti 2020).

Risk factors faced by young people may stem from their family values. However, the personal context related to the level of education and competencies, then the expectations that they have about themselves and the social environment, are circumstances that significantly affect the emergence of social exclusion. Exclusion from the labour market substantially

increases other factors of social exclusion. The level of education is considered the best predictor of youth involvement in the employees' world (Keep, 2012; Kelly et al., 2013). A higher level of education reduces the risk of unemployment as well as increases income. However, in recent years, there has been a declining trend in the number of faculty students. According to the National Bureau of Statistics, the number of students enrolled at state faculties in the 2017/2018 school year was 223 728, 2018/2019 was 215 877, and 2019/2020 was 208 719 (RZS, 2021). It can be said that the share of students is decreasing due to negative demographic trends and emigration. Still, a certain percentage decreased is undoubtedly a consequence of economic reasons and lower employability after graduation.

In their work, Vasile and Anghel (2015) point to education as a significant factor for the exclusion of young people from the labour market. Exploring the difficulties that young people face when entering the labour market, the authors identified the economic crisis as significant for intensifying the exclusion of even more young people from the labour market, both in Romania and Europe. Some research shows that a low level of education is an important prerequisite for NEET status, independently of other factors (Carcillo et al., 2015; Erdoğan et al., 2017). The results of Vasile and Anghel (2015) indicated, contrary to expectations, that in the crisis, more educated young persons were the hardest hit in Romania.

In addition to the level of education that stands out in the literature as a condition of a high NEET rate, research indicates that the level of economic development of the country significantly affects the level of the NEET population. In his study, Bingöl (2020) dealt with the impact of economic aspects on the NEET population, assuming that macroeconomic variables related to individual countries significantly condition the employability of, particularly vulnerable groups. Bingöl (2020) used various economic indicators such as GDP per capita, Inflation Rate, Adjusted Savings for Education Expenditure, Foreign Direct Investments and Human Development Index, and found a significant impact of almost all parameters on NEET level in the considered sample.

The post-industrial global economy can explain youth unemployment. There is a drastic change in the demand for certain new occupations and the inability of more rigid education systems to adapt to the situation. This leads to the next group of significant factors that represent institutional factors. The global economic crisis has additionally caused an increase in unemployment among all population categories, including the NEET. In order to reduce the negative effects of high unemployment, various measures are adopted that increase the flexibility of the labour market. The authors Vasile and Anghel (2015) mentioned several institutional factors related to the poor functioning of the labour market: over-regulation, insufficient investment in young graduates, tolerance of discriminatory behaviour towards people with certain disadvantages and vulnerable social groups etc. Tamesberger et al. (2014) recognized the institutional framework as an important cause of weak NEET integration and through their research highlighted three important subsystems: the employment system, the education system and the training system.

Considering the mentioned elements that have been highlighted in the literature as influential on the NEET population, the initial hypotheses are defined:

**H1:** Economic level affects NEET rates.

**H2:** Education level affects NEET rates.

**H3:** Institutional level affects NEET rates.

## 4. RESEARCH METHODOLOGY

### 4.1. DATA

In order to empirically confirm the mentioned connections, a sample consisting of data collected for 31 European countries is used. Data from the Eurostat database, World Bank Development Indicators and UNDP Database were used to provide a uniform methodology for data collection from all countries. The definition of the selected variables and the data source are presented in Table 1. The research was conducted considering data from 2015 to 2019, which gave a sample of 155 valid cases.

Table 1. Variables and the data sources

Variable	Abbreviation	Data source
Human development index	HDI	United Nations Development Programme (UNDP)
Adjusted savings: education expenditure (% of GNI)	EE	The World Bank
GDP per capita (current US\$)	GDP	The World Bank
Less than primary, primary and lower secondary education (levels 0-2)	EdL 0-2	Eurostat [yth_empl_090]
Upper secondary and post-secondary non-tertiary education (levels 3 and 4)	EdL 3-4	Eurostat [yth_empl_090]
Tertiary education (levels 5-8)	EdL 5-8	Eurostat [yth_empl_090]
Job vacancy rate by NACE Rev. 2 activity	JV	Eurostat [jvs_a_rate_r2]
Annual net earnings	ANE	Eurostat [earn_nt_net]
Employment and activity	E&A	Eurostat [lfsi_emp_a]
Young people neither in employment nor in education and training rate	NEET	Eurostat [yth_empl_150]

The relationships examined in this study can be presented as follows:

$$NEET=f(HDI, EE, GDP);$$

$$NEET=f(EdL 0-2, EdL 3-4, EdL 5-8);$$

$$NEET=f(JV, ANE, E\&A)$$

The Human Development Index (HDI) is a dimension of living standards. It emphasizes that people and their abilities should be the ultimate measure of a country's development in addition to economic growth. HDI is a collective measure based on achievements in critical dimensions of human development: "a long and healthy life, being knowledgeable and having a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions" (UNDP, 2021).

Education expenditure is the amount of funds allocated in one country from the total budget (GNI) for various educational activities. According to the definition of The World Bank, it "refers to the current operating expenditures in education, including wages and salaries and excluding capital investments in buildings and equipment" (The World Bank, 2021). The value was obtained based on the weighted average of the collected data, given the sizeable disproportionate cost of public education and its effectiveness.

Gross domestic product GDP is an important statistic that measures a country's wealth. According to The World Bank, GDP per capita is: "gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products". Data are expressed in current US dollars.

Youth unemployment by educational attainment level is approached following The International Standard Classification of Education (ISCED), which assumes eight levels of education. The levels of education are grouped into three categories: Less than primary, primary and lower secondary education (levels 0-2); Upper secondary and post-secondary non-tertiary education (levels 3 and 4); Tertiary education (levels 5-8). The data were based on the results of the European Union Labor Force Survey (EU-LFS).

Job vacancy statistics (JVS) provide information on the level and structure of labour demand. The data cover all economic activities defined by NACE Rev. 2 (Statistical classification of economic activities in the European Community), the usual classification system for economic activities, except for the activities of households as employers and the activities of extraterritorial organizations and bodies. "The job vacancy rate (JVR) is the number of job vacancies expresses as a percentage of the sum of the number of occupied posts and the number of job vacancies:  $JVR = \text{number of job vacancies} / (\text{number of occupied posts} + \text{number of job vacancies}) \times 100$  (Eurostat, 2021).

Information on annual net earnings (ANE) represents net pay taken home, in absolute numbers at the annual level. The transition from gross to net earnings requires subtracting income taxes and employee's social security contributions from the gross amounts and the addition of family allowances, if appropriate (Eurostat, 2021).

The indicator Employment and activity (E & E&A) is based on the European Labour Force Survey (EU-LFS). The definitions of employment and unemployment follow the definitions and recommendations of the International Labour Organisation (ILO). The precise definition of unemployment is given in Commission Regulation (EC) No 1897/2000:

- "Employed persons are all persons who worked at least one hour for pay or profit during the reference week or were temporarily absent from such work. The employment rate is the percentage of employed persons in relation to the total population".
- "Unemployed persons are all persons 15 to 74 years of age (16 to 74 years in ES, IT and the UK) who were not employed during the reference week, had actively sought work during the past four weeks and were available to begin working immediately or within two weeks." (Eurostat, 2021)

## 4.2. METHODOLOGY

Multiple linear regression is used to analyse the relationships, where the NEET share is taken as the dependent variable, and the independent variables are grouped into three predictor groups. Multiple linear regression allows predicting a dependent variable using various independent variables where the correlation index ( $R$ ) value represents the correlation between the dependent and independent variables. The determination index ( $R^2$ ) is analysed to determine the total variation for the dependent variable that the independent variables could explain. A value greater than 0.5 shows that the model is effective enough to determine the relationship. In addition to examining the influence of individual predictor groups on the dependent variable, all predictor groups' influence is examined to determine whether there is a

certain order of influences by predictor sets. In addition to testing each set of predictor variables, this analysis also checks the validity of all groups together.

## 5. RESULTS

Three multivariate regression analyses were performed to predict the total NEET rate. Each analysis included all three groups of predictor variables. The first model determines how well the NEET population is predicted first by an economical set of predictor variables and then through a set of predictor variables related to education and institutional predictors. In the second model, the order of groups was modified, examining the prediction of the NEET population by a set of predictor variables that describe the level of education and then through the influence of economic and institutional predictors. Finally, in the third model, the analysis is conducted by estimating how well the dependent NEET variable is predicted by the institutional and labour market set of predictors plus the other two sets. The results of all three models are shown in Table 2.

Table 2. Summary statistics for three models

Predictors	R	R <sup>2</sup>	F	Sig	R <sup>2</sup> <sub>change</sub>	F <sub>change</sub>	Sig. F <sub>change</sub>
<b>Model 1</b>							
HDI, EE, GDP	.806	.650	76.253	.000	.650	76.253	.000
HDI, EE, GDP, EdL0-2, EdL 3-4, EdL 5-8	.914	.835	101.160	.000	.185	44.732	.000
HDI, EE, GDP, EdL0-2, EdL 3-4, EdL 5-8, JV, ANE, E&A	.954	.910	130.926	.000	.075	32.274	.000
<b>Model 2</b>							
EdL0-2, EdL 3-4, EdL 5-8	.808	.654	77.382	.000	.654	77.382	.000
EdL0-2, EdL 3-4, EdL 5-8, HDI, EE, GDP	.914	.835	101.160	.000	.181	43.925	.000
EdL0-2, EdL 3-4, EdL 5-8, HDI, EE, GDP, JV, ANE, E&A	.954	.910	130.926	.000	.075	32.274	.000
<b>Model 3</b>							
JV, ANE, E&A	.860	.740	116.600	.000	.740	116.600	.000
JV, ANE, E&A, HDI, EE, GDP	.941	.885	153.661	.000	.145	50.357	.000
JV, ANE, E&A, HDI, EE, GDP, EdL0-2, EdL 3-4, EdL5-8	.954	.910	130.926	.000	.025	10.727	.000

Regression equations for all three groups of predictor variables are statistically significant. The first model results show that the correlation between the dependent and independent variables concerning the economic group is  $R = 0.806$  while  $R^2 = 0.650$ . Since the  $R^2$  value is greater than 0.5, the model is effective enough to determine the relationship. Also, high F-value ( $F=76.253$ ) and p-value less than 0.05 ( $p < 0.001$ ) indicate that the model is statistically significant. The impact of the set of education variables has an additional statistically significant effect on predicting the NEET rate since  $R^2_{change} = 0.185$ ;  $F_{change} = 44.732$  and  $p < 0.001$ . Also, the influence of the set of institutional variables in model 1 has a

statistically significant influence on the change of NEET rate through the influence of the other two sets with  $R^2_{change} = 0.075$ ;  $F_{change} = 32.274$  and  $p < 0.001$ .

Regarding the level of education, the correlation between NEET rate and education level has a value of  $R=0.808$ . Total variation for the dependent variable that the independent variables could explain has a value  $R^2=0.654$ , which is acceptable for further analysis. Value of F test is  $F = 94.354$  and  $p < 0.001$ .

For the variables accessing the institutional conditions and labor market,  $R= 0.860$  and  $R^2 = 0.74$  with statistical significance of the model ( $F = 116.600$  and  $p < 0.001$ ). As in model 1, in models 2 and 3, all added predictor groups contribute to the prediction of the NEET rate in relation to the first examined group in each model, which can be seen based on R2 increase and achieved statistical significance ( $p < 0.001$ ) for F changes (Table 2).

Also, multiple regression analysis of all nine predictor variables was performed to determine the power of individual predictors. The linear relationship of all predictors is statistically significant with respect to the NEET rate,  $R^2 = 0.910$ ;  $F = 130.926$ ;  $p < 0.001$ . Based on the analysis of strength and statistical significance of Beta coefficients of individual predictor variables, a significant influence of variable HDI from the economic set of predictors, the significance of EdL5-8 from education set and significance of predictors JV, ANE and E&A can be determined (Table 3).

Table 3. Regression coefficients for individual predictors

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Model 1					
Constant	97.675	9.378		10.415	.000
HDI	-92.075	11.897	-.711	-7.739	.000
EE	-.377	.420	-.066	-.899	.370
GDP	-1.634E-5	.000	-.063	-.743	.459
Model 2					
Constant	6.896	.814		8.475	.000
EdL 0-2	.034	.048	.059	.713	.477
EdL 3-4	.068	.134	.099	.506	.614
EdL 5-8	.464	.117	.675	3.980	.000
Model 3					
Constant	71.961	4.224		17.036	.000
JV	-1.252	.337	-.181	-3.715	.000
ANE	-6.467E-5	.000	-.152	-2.719	.007
E&A	-.745	.063	-.687	-11.779	.000

## 6. DISCUSSION

In order to adequately design and implement policies to reduce the share of NEET youth, it is clear that various aspects affecting NEET status need to be studied. Analysing obtained result, it can be noticed the significant influence of economic indices on the NEET

rate, which confirms hypothesis H1. However by further analysis of B coefficients indicate that variable HDI (Human Development Index) have statistical significance, therefore the countable influence. This index brings together measures of poverty, general literacy and competences and decent living standards whose low values are recognized as the causes of high NEET rates in some countries.

The second hypothesis, H2, which examined the relations between NEET rate and education, is also confirmed with a high value of correlation and determination coefficients as well as the value of the F test. B coefficients and its significance reveal that only influence of Tertiary education (levels 5-8) is significant while Less than primary, primary and lower secondary education (levels 0-2) and Upper secondary and post-secondary non-tertiary education (levels 3 and 4) do not significantly influence the NEET rate. The result obtained in this research is also interesting, as in the work of Vasile and Anghel (2015), where the higher level of education is shown to be influential for the share of NEET, despite the expectation that lower educational levels would be.

Hypothesis H3 is confirmed, which means that institutional and labour market conditions influence the NEET rate. In this case, examined independent variables, all predictor variables Job vacancy rate, Annual net earnings and Employment and activity, significantly influence the NEET rate. Tamesberger et al. (2014), in their research conducted in Austria, proved the strong influence of per capita expenditure on active labour market policy and the number of available jobs, which also confirmed the importance of institutional factors.

## **7. CONCLUSION**

In addition to the overall economic and social consequences, the NEET status can have serious consequences for young individuals. The results of this research indicate the need for influence, both, state institutions and individual actions to further reduce NEET populations and their adequate inclusion in the labour market. After analysing statistical indicators and existing policies and activities of institutions in Serbia, it can be concluded that it is necessary to first establish mechanisms for targeting the NEET youth. In addition, the specific needs of this population need to be addressed through special programs that meet the conditional and necessary needs of the Serbian labour market. The narrowing of the gap between education and the labour market, the high share of the rural population, and the nation's ageing should be the main targets of all further activities related to NEET youth.

## **ACKNOWLEDGEMENT**

This paper was the result of the research realized within the project COST CA18213 action: Rural NEET Youth Network: Modeling the risks underlying rural NEETs social exclusion (<https://rnyobservatory.eu/web/>).

## **REFERENCES**

Bingöl, U. (2020). The Macroeconomic Determinants of NEET: A Panel Data Analysis for Fragile Five Countries and Russia. *Journal of management and economics research*, 18 (4), 173-198.

- Carcillo, S., Fernández, R., Königs, S., & Minea, A. (2015). NEET Youth in the Aftermath of the Crisis: Challenges and Policies, OECD Social, Employment and Migration Working Papers, No. 164, OECD Publishing, Paris, <https://doi.org/10.1787/5js6363503f6-en>.
- Erdoğan, E., Yentürk, N., Akyüz, A.A., Kurtaran, Y., Yurttagüler, L., Dursun, K., & Oy, B. (2017). Being a NEET in Turkey: Determinants and Consequences. Power 2 youth, Working Paper No. 30
- Eurostat (2021, June 1). Eurostat. Preuzeto sa European Commission: [https://ec.europa.eu/eurostat/web/main/data/database?p\\_p\\_id=NavTreeportletprod\\_WAR\\_NavTreeportletprod\\_INSTANCE\\_nPqeVbPXRmWQ&p\\_p\\_lifecycle=0&p\\_p\\_state=normal&p\\_p\\_mode=view](https://ec.europa.eu/eurostat/web/main/data/database?p_p_id=NavTreeportletprod_WAR_NavTreeportletprod_INSTANCE_nPqeVbPXRmWQ&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view)
- Gulan, B. (2015, December 4). Saving villages and state (in Serbian). Retrieved from [makroekonomija.org: https://www.makroekonomija.org/0-branislav-gulan/drzava-i-selo2015/](https://www.makroekonomija.org/0-branislav-gulan/drzava-i-selo2015/)
- Choudhry, M.T., Marelli, E., & Signorelli, M. (2012). Youth unemployment rate and impact of financial crises. *International Journal of Manpower*, 33, 76–95.
- Kelly, E., McGuinness, S., & O'Connell, P.J. (2013). Staying on the dole: profiling the risk of long-term unemployment among young people in Ireland. In: De Groof, S., Elchardus, M. (Eds.), *Early School Leaving and Youth Unemployment*. Amsterdam University Press, Amsterdam.
- Liotti, G. (2020). Labour market flexibility, economic crisis and youth unemployment in Italy. *Structural Change and Economic Dynamics*, 54, 150–162.
- Nikolić, I., Mihajlović, I., & Stojanović, A. (2020). COST CA18213 Rural NEETs in Serbia: 2009/2019 Overview. COST Action CA 18213: Rural NEET Youth Network: Modeling the risks underlying rural NEETs social exclusion.
- RZS (2020). Newsletter, Labor Force Survey in the Republic of Serbia, 2019 (in Serbian). Belgrade: National Bureau of Statistics.
- RZS (2021, June 1). Retrieved from [Republički zavod za statistiku: https://www.stat.gov.rs/sr-latn/oblasti/obrazovanje/visoko-obrazovanje/](https://www.stat.gov.rs/sr-latn/oblasti/obrazovanje/visoko-obrazovanje/)
- Tamesberger, D., Leitgöb, H., & Bacher, J. (2014). How to combat NEET? Evidence from Austria. *Intereconomics*, 49, 221–227.
- The Council of the European Union (2013). Council Recommendation of 22 April 2013 on Establishing a Youth Guarantee (2013/C 120/01). Retrieved from <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2013:120:0001:0006:EN:PDF>
- The law of youth (2011). The Law of Youth (in Serbian) . Belgrade: Official Gazette RS , No. 50/2011. Retrieved from [https://www.paragraf.rs/propisi/zakon\\_o\\_mladima.html](https://www.paragraf.rs/propisi/zakon_o_mladima.html)
- The World Bank. (2021, June 1). World Bank Open Data. Retrieved from <https://data.worldbank.org/indicator/NY.ADJ.AEDU.GN.ZS>
- UNDP. (2021, June 1). Retrieved from Human Development Index (HDI): <http://hdr.undp.org/en/content/human-development-index-hdi>
- Vasile, V., & Anghel, I. (2015). The educational level as a risk factor for youth exclusion from the labour market. *Procedia Economics and Finance*, 22, 64 – 71.
- Verick, S. (2009). Who Is Hit Hardest during a Financial Crisis? The Vulnerability of Young Men and Women to Unemployment in an Economic Downturn. IZA DP No. 4359.



<b>SERBIAN RURAL NEET YOUTH INCLUSION THROUGH THE DEVELOPMENT OF DIGITAL ENTREPRENEURIAL COMPETENCES AND DIGITAL ENTREPRENEURSHIP</b>	
Nevenka Popović Šević, Milutin Dobrilović, Milena Ilić P., Marko Ranković.....	75
<b>ANALYSIS OF THE LEVEL OF IMPACT OF PANDEMIC RISKS IN MINING</b>	
Slobodan Radosavljević, Nikola Ille, Milan Radosavljević, Ivana Radosavljević.....	85
<b>SOME OF THE HEALTH RISKS WHEN RELOCATING SETTLEMENTS</b>	
Slobodan Radosavljević, Nikola Ille, Milan Radosavljević, Ivana Radosavljević.....	96
<b>EVALUATION OF ERGONOMIC CHARACTERISTICS OF CRANE CABIN SEAT</b>	
Vesna Spasojević Brkić, Zorica Veljković, Aleksandar Brkić, Martina Perišić.....	108
<b>CUSTOMERS LOYALTY AND RISK MANAGEMENT PRACTICE IN SERBIAN COMPANIES</b>	
Nuri Mohamed Saad Alheriani, Vesna Spasojević Brkić, Mirjana Misita, Martina Perišić, Neda Papić.....	114
<b>PARASITE COMMUNITIES AND A CONTENT OF COPPER IN <i>CHONDROSTOMA NASUS</i> AND <i>ALBURNUS ALBURNUS</i> FROM THE DANUBE RIVER, BULGARIA</b>	
Petya Zaharieva, Radoslava Zaharieva.....	122
<b>PARASITE COMMUNITIES AND A CONTENT OF ARSENIC IN <i>ALBURNUS ALBURNUS</i> AND <i>ABRAMIS BRAMA</i> FROM THE DANUBE RIVER, BULGARIA</b>	
Radoslava Zaharieva, Petya Zaharieva.....	132
<b>CUSTOMER INTERACTION STRATEGY IN DIGITAL PLATFORMS AND NEW RISKS</b>	
Yulia Syaglova, Tatiana Maslevich, Natalia Safronova.....	142
<b>APPLICATION OF E-BUSINESS IN THE SEE COUNTRIES DURING THE CORONAVIRUS PANDEMIC</b>	
Sanela Arsić, Ivan Jovanović, Isidora Milošević, Milena Jevtić, Anđelka Stojanović.....	151
<b>THE NETWORK SCIENCE APPROACH IN DETERMINING THE INTELLECTUAL STRUCTURE, EMERGING TRENDS AND FUTURE RESEARCH OPPORTUNITIES: AN APPLICATION TO TAI CHI FOR OLDER ADULTS</b>	
Maria Helena Pestana, Margarida Sobral, Wan-Chen Wang, Artur Parreira.....	165
<b>DIGITAL STUDENT ID , IDENTITY MANAGEMENT AND INTERNET OF EVERYTHING IN EDUCATION DURING COVID-19</b>	
Ramona Markoska, Aleksandar Markoski.....	176

**IMPACT OF THE COVID-19 GLOBAL PANDEMIC ON COPPER PRICE  
INSTABILITY**

Ivan Jovanović, Sanela Arsić, Dejan Bogdanović, Nenad Milijić.....186

**FINANCIAL TECHNOLOGIES AND ITS IMPACT ON FINANCIAL INCLUSION**

Salome Silagadze.....195

**THE ON-LINE DISTRIBUTION CHAINS OF ORGANIC FOOD ON PORTO  
ALEGRE AND METROPOLITAN REGION**

Adriano Diego Klein, Caroline Rippe De Mello Klein, Glauco Schultz.....204

**THE ACADEMIC REVISIONS ABOUT SELLING ORGANIC FOOD ON-LINE  
IN BRAZIL**

Klein, Adriano Diego, Klein, Caroline Rippe De Mello, Glauco Schultz, Oliveira, Letícia de.....214

**SHORT FOOD SUPPLY CHAINS INSIDE THE CONSUMER'S ORGANIC  
COOPERATIVES OF PRODUCTS IN THE SOUTH OF BRAZIL**

Klein, Adriano Diego, Klein, Caroline Rippe De Mello, Glauco Schultz.....224

**CONSUMER ATTITUDES TOWARDS THE POSSIBILITY OF MISSING OUT A  
PRODUCT**

Anastasia Jefimova, Oliver Parts.....232

**PREDICTING EFFECTS OF ORGANIZATIONAL COMMITMENT AND  
CHANGED WORKING CONDITIONS ON EMPLOYEES TASK  
PERFORMANCE DURING COVID 19 PANDEMIC**

Ana Tomovska – Misoska, Dimitrinka Jordanova Pesevska, Kate Trajkova.....239

**THE ENHANCEMENTS OF MANAGEMENT PRINCIPLES IN THE  
ROBOTIZED INDUSTRIES PRACTICE**

Zamaldinova Aigul Azitovna, Suraeva Alina Andreevna, Vorontsov Dmitry Petrovich, Khramov Yuri  
Vladimirovich, Khamidullina Gulnara Rafkatovna.....251

**FORWARD-LOOKING STANDARDIZATION IN POST-CONSUMER PRODUCT  
AND INDUSTRIAL WASTE MANAGEMENT**

Yalalina Veronika Arturovna, Vorontsov Dmitry Petrovich, Zakirova Alfia Ravilievna,  
Sadykov Zufar Baryevich, Khananova Adelina Faridovna, Shikhalev Anatoly Mikhailovich.....262

**BALANCE BETWEEN THE EUROPEAN UNION AND BULGARIAN  
LEGISLATION AS REGARDS THE AGRICULTURAL LAND VERSUS FOOD  
SOVEREIGNTY**

Dafinka Grozdanova, Minko Georgiev.....267

**THE COMPARATIVE ANALYSIS OF HEALTH SAFETY ACROSS SEE  
COUNTRIES IN PANDEMIC CONDITIONS USING THE GHS INDEX**

Marija Panić, Aleksandra Fedajev.....278

<b>ANALYSIS OF FINANCIAL MANAGEMENT PRACTICES DURING THE COVID-19 PANDEMIC CRISIS IN SEE ECONOMIES: THE EVIDENCE FROM THE WORLD BANK'S ENTERPRISE SURVEYS</b>	
Aleksandra Fedajev,Sanela Arsić.....	288
<b>INNOVATIVE APPROACHES TO THE FORMATION OF REAL ESTATE VALUATION IN RUSSIA</b>	
Tatiana V. Dubrovskaya, Liubov N. Riedel, Alena A. Stupina.....	298
<b>HELMINTH COMMUNITIES OF ABRAMIS BRAMA (LINNAEUS, 1758) FROM THE TUNDJA RIVER AND ACOLOGICAL ASSESSMENT OF THE FRESHWATER ECOSYSTEM</b>	
Diana Kirin, Mariya Chunchukova.....	305
<b>CHALLENGES IN THE FUNCTIONING OF SUPPLY CHAINS IN THE CONTEXT OF THE EPIDEMIC OF COVID 19 VIRUS</b>	
Vijoleta Vrhovac, Goran Vujasinović, Stevan Milisavljević, Nebojša Brkljač, Nikola Paskaš.....	313
<b>RISK TRANSMISSION BETWEEN THE STOCK AND BOND MARKETS IN NIGERIA DURING PERIODS OF RECESSION AND ECONOMIC DISRUPTIONS</b>	
Ibrahim Mohammed.....	318
<b>NEW DATA ON THE HELMINTH FAUNA OF CHONDROSTOMA VARDARENSE FROM LOWER STREAM OF RIVER TUNDZHA, BULGARIA</b>	
Mariya Chunchukova.....	335
<b>NEW H2H MARKETING PARADIGM IN RESPONSE TO THE GREAT CRISIS OF TRUST</b>	
Adrijana Jevtić, Dejan Riznić, Goran Milovanović.....	342
<b>ANALYSIS OF IMPACT OF COVID-19 PANDEMIC ON SUSTAINABLE DEVELOPMENT GOALS</b>	
Danijela Voza, Milovan Vuković, Milica Veličković.....	353
<b>ANALYSIS OF FACTORS INFLUENCING NEETs RATES</b>	
Anđelka Stojanović, Ivan Mihajlović, Ivica Nikolić.....	361
<b>PRODUCTION AND DISPOSAL OF INFECTIOUS MEDICAL WASTE IN THE HEALTH CENTER IN PARACIN</b>	
Jasmina Jovanović Mirković, Violeta Ilić Todorović, Maja Mrkić, Christos Alexopoulos, Zorana Jurinjak .....	372
<b>GENERATING AND MANAGING PHARMACEUTICAL WASTE IN COMMUNITY HEALTH CENTRES IN SERBIA</b>	

Sladana Pirić, Violeta Ilić Todorović, Jasmina Jovanović Mirković, Aleksandra Ikonov, Christos Alexopoulos.....	380
<b>THE HIGH EDUCATION IN INTERGENERATIONAL FAMILY BUSINESS AS AN INSTRUMENT TO ENGAGE NEETs</b>	
Daniel Pavlov.....	387
<b>RESEARCH IN THE FIELD OF APPLICATION OF PROCESS APPROACH FOR IDENTIFICATION OF IMPROVEMENTS IN PERFORMING OF AFTERSALE PHASE OF CAR DEALERSHIPS</b>	
Darko Stanojević, Predrag Đorđević, Snežana Urošević, Ljubica Knežević, Ivan Rašković.....	393
<b>THE CHOICE OF TECHNIQUE AND METHODS OF ASSESSING THE INNOVATIVE POTENTIAL OF AN ENTERPRISE</b>	
L.N. Riedel, T.V. Dubrovskaya, I.V. Shadrina.....	412
<b>MULTI CRITERIA ASSESSMENT OF FREE ZONES IN VOJVODINA</b>	
Bojan Stojčetočić, Đorđe Nikolić, Milan Mišić.....	419