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# The Impact of Education on Youth Employability: The Case of Selected Southeastern European Countries

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## Abstract

This paper focuses on the processes of school-to-work transitions in a selected group of countries from South-eastern Europe (SEE), namely: Bosnia and Herzegovina; Croatia; Montenegro; North Macedonia; Serbia; and, Slovenia. Each of these countries display the same roots of development in their educational systems: however, due to their transition and integration processes within the European Union, they implemented different concepts of reforms within their educational systems. In addition, the challenges of youth employability are a common problem for each of the selected countries, and the effectiveness of the processes of school-to-work-transition varies across the countries. By using panel data and multiple linear regression models, this paper estimates the impact of different educational levels on youth employability and changes in the rates of NEET population (aged 15–24) in the selected group of countries over the period 2009 to 2019. The results suggest that the impact of the attained level of education

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has an ambiguous effect on the rates of youth employment; moreover, the relationship with changes in NEET rates are statistically significant and negative in most of the selected group of countries.

**Keywords**

education, youth employment/youth unemployment, education achievement.

**Introduction**

Young people have been amongst those most affected by the current economic instability. Since 2009, the youth unemployment rate has increased across Europe and has become a significant and serious problem within society. Youth unemployment induces social exclusion, and in the case of a protracted term of unemployment, it has negative consequences for their future working prospects. Hence, adequate levels of education and trainings of young people promote access to better positions in the labor market and, therefore, should increase their employability.

According to Dacre and Sewell (2007) the concept of employability refers to the ability of a young person to gain initial employment, to maintain employment, and to obtain new employment if required. They defined employability as a “set of skills, knowledge, understanding and personal attributes that make young person capable of getting, keeping and successfully fulfilling the work.”

There is no a unique definition for the process of school-to-work transition. The International Labour Organisation defines the school-to-work transition as a process concerning “the passage of a young person from end of schooling to the first stable or satisfactory employment.” Alam and de Diego (2019) define the school-to-work transition as a process which enables young people aged 15 to 24 to move easily from education to productive, stable, and decent work. They emphasize two aspects of this process. Firstly, preparing young people for transition, whereby they develop relevant skills for work, qualifications, knowledge, and competences that are required in order to secure and maintain employment, and to adapt to the evolving economy. The process of building skills can be via formal, informal, non-formal, and on-the-job education. Secondly, it is a process of making the actual transition, whereby young people are capable of finding and connecting to productive and decent work opportunities that make effective use of their skills. School-to-work transition is very important for young persons. The first years on the labor market are the pattern not only for their future

employment and earning trajectories, but also their well-being and social and professional networking.

Considering the importance of enhancing youth employability through education and training, and speeding up the process of school-to-work transition in South-eastern European countries, various public policies, and reforms have been implemented. However, these initiatives and policies produce relatively weak results in the school-to-work transition, and moreover have been seen to increase the social exclusion of the most vulnerable NEET population.

The “NEET rate” is relatively new indicator, and depicts the share of youth who are neither in employment nor in education or training in the youth population, aged 15 to 34. As a concept, “NEET” is associated with a wide range of vulnerabilities amongst youth, dealing with the issues of unemployment, early school leaving, and labor market discouragement.

The novelty of this paper lies in its comparative analysis of the educational systems of the selected South-eastern European countries (Bosnia and Herzegovina, Croatia, Montenegro, North Macedonia, Serbia, and Slovenia) from the perspective of their effectiveness in the school-to-work transition process. By using panel data and multiple linear regression models, this paper estimates the impact of different educational levels on youth employability and changes in the rates of NEET populations (aged 15–24) in the selected group of countries over the 2009 to 2019 period. Taking into consideration each country’s characteristics, this paper gives some recommendations for designing education policies which empower youth populations to better enter the labor market whilst also increasing the social inclusion of the most vulnerable NEET population.

The remainder of the paper is organized as follows. After presenting the theoretical and empirical background, we elaborate upon the data and methodological approach. Following this, we present the results and discuss the main findings, and subsequently reach our final conclusions.

## **Theoretical and Empirical Background**

### *Literature Review*

There are number of theoretical and empirical studies regarding the role and impact of education on the employability, competitiveness of the economy, and on economic growth and development in general. Well-known economic studies argue that education creates economic benefits to society greater than the sum of its benefits to individuals, that is, education can accelerate the growth rate of the economy (Barro, 1991; Barro and Sala-i-Martin, 2003;

Jorgenson and Fraumeni, 1992; Lucas, 1988; Romer, 1990). Weisbrod (1962) sees education as a tool for building skills in the era of dynamic technological changes. New technology often requires new skills and knowledge, and those individuals with higher education are more likely to easily apply them than those with lower education levels.

Al-Braizat (2016) sought to identify the key significance of educating young people and edifying them in order to attain sustainable development goals. To that end, he found that educational processes vis-à-vis youth populations are constitutive of the base of their personal development. In addition, he demonstrated that traditional education systems limit young people in terms of accepting a dynamic culture of change and creativity. Furthermore, he concluded that a comprehensive educational system should be continually reviewed and improved upon. According to Chan (2016), higher education can be regarded as a focal point of knowledge acquisition, and as such it makes a great contribution to both economic growth and development via the fostering of innovation and increasing the repertoire of skills of graduated students. In that context, higher education serves the purpose of signaling for students' abilities and higher-order skills, and graduated students should (therefore) increase their operability and therefore competitiveness within the job market.

Unfortunately, a number of empirical cases confirm that many economies are unable to utilize the benefits of education in the process of accelerating their economic growth. The rates of youth unemployment are usually higher than the rates of unemployment of other age groups in those economies. Ryan (2001) has argued that there are a number of reasons for high rates of youth unemployment: however, he has also indicated that poor macroeconomic performance and a lack of growth are the most significant factors, and that the youth population is mostly affected due to the cyclical trends of youth unemployment when compared with the fluctuations of other groups of adult unemployment.

Jimeno and Rodriguez-Palenzuela (2002) analyzed a panel of OECD countries in order to measure the relevance of the relative size of the youth population, labor market institutions, and macroeconomic shocks in explaining the youth unemployment rates. They found that the relative size of the youth population is a non-negligible factor in explaining cross-country differences in youth unemployment and labor market institutions. They also found that macroeconomic shocks had differential effects, and more rigid labor markets imply higher relative unemployment rates. Mroz and Savage (2006) analyzed the youth labor market and, in particular, the long-term impacts of youth unemployment on labor market outcomes. They found strong evidence of a human capital catch-up response to unemployment. Furthermore,

they concluded that young persons who experience unemployment can become permanently tracked into sporadic, low-paying jobs punctuated by the curse of unemployment, and that these youths do not fully recover from the adverse impacts of unemployment.

Biagi and Lucifora (2008) showed that demographic and education shocks are qualitatively different for young versus adult employees, as well as for more educated versus less educated individuals. They showed that whilst adult employees and more educated individuals do, in general, experience higher employment rates, changes in the population age structure appear to be positively related to the youth population's unemployment rates whilst, however, they have no such effect on the equivalent adult populations.

Bell and Blanchflower (2011) found that youth unemployment rates have been increasing relative to the adult groups of unemployment rates. The last recession has increased the size of the gap between the rates of unemployment of these groups. According to them, the youth population group with the lowest levels of education and skills are particularly concerning. Youths in this group were those most negatively impacted upon by the recession since jobs requiring relatively low levels of skills were taken by those with higher levels of skills. Furthermore, they noted that jobs previously held by young people both during and after the recession were taken by older people with more experience.

Refrigeri and Aleandri (2013) have argued that the problem of youth unemployment is a consequential one which arises from the difficulties in the process of transition from school to work. They showed that high rates of youth unemployment in Europe have emerged (up to 30%) and that these rates are notably higher than those for older adults (up to 10%). They pointed out that youth unemployment can only be reduced through the introduction of policies which promote a work related curriculum but also seek to reform education systems and professional development. They suggested that only via continual, life-long professional development can a young person be in a position to make informed choices, not only during their initial education (i.e., scholastic) and the transition to employment, but throughout their whole working lives (i.e., within and after university and professional settings).

Piteres (2013) has adopted a more microeconomic approach in analyzing the determinants of youth employment in developing countries. He analyses three groups of determinants: labor demand, labor supply, and labor market functioning. On the side of labor demand, the higher labor productivity and promotion of entrepreneurship are key determinants for increasing the demand for this production factor. On the labor supply side, the quality of education, the acquired skills, and equal access to education are key determinants for young people to be more easily integrated into the labor market.

However, he notes that labor market functioning is a very important factor for increasing the (successful) process of school-to-work transformation. In that context, he emphasizes the role of the availability and quality of information, transparency in hiring processes, and proper labor market regulation in relation to youth employability. Alam and de Diego (2019), and Braziene and Dorelaitiene (2012) argue likewise regarding the importance of good quality education and acquired skills of young people during their educational process. Namely, that these constitute a very important factor for employment of youth people. However, given that the labor market failure in matching the required skills, knowledge and experience with the actual labor supply available, they recommend an implementation of comprehensive government programs for stimulation of youth employment and the speeding up of the school-to-work transition process.

The European Commission (2007) proposed a number of new initiatives in order to build bridges between education and employment and thereby foster young people's active citizenship, with the ultimate goal of reducing youth unemployment and increasing youth employability. This study indicated that by actively empowering young people and creating favorable conditions to develop their skills, their capacity to work and to participate actively in society is amplified. It goes without saying that this is essential for socio-economic development of the European Union, particularly in the context of globalization, knowledge-based economies, and aging societies. This study states that youth unemployment (ages 15–24) is a key concern for Europe, and that over the last 25 years no real breakthrough has been achieved in its reduction despite a general rise in educational attainment overall.

It is within this context that the EU Youth Strategy (2010–2018) clearly recognized that “equal access for young people to high quality education and training at all levels and opportunities for lifelong learning should be supported.” Furthermore, “as a complement to formal education, non-formal learning for young people should be a promoted and recognized, and better links between formal education and non-formal learning developed. Young people's transition between education and training and the labor market should be facilitated and supported, and early school leaving reduced.” (European Commission, 2011).

### *Institutional Settings and Empirical Trends in Education and Youth Employability*

The countries which this research focuses upon are: Bosnia and Herzegovina; Croatia; Montenegro; North Macedonia; Serbia; and, Slovenia. These have been selected as a representative group of countries from South-eastern

Europe (SEE). The reason for this particular choice of countries is the common roots of development of their educational systems. Until the beginning the 1990s (and before the start of post-communist transition process) these countries were constitutional components of the Socialist Federal Republic of Yugoslavia. During the 1990s each of the countries, with differing levels of success, coped with the multiple challenges of the transition process. Some of the countries had experienced destructives wars, but even so, all of them experience a strong economic downturn and massive institutional changes much of which were initially unfamiliar to populations concerned. A further common characteristic of the selected group of countries was their goal to acquire the status of full membership within the European Union (EU). As an outcome of that process, only Slovenia (2004) and Croatia (2013) have become full-member countries of the EU, Montenegro and Serbia remain in the negotiation process, and North Macedonia and Bosnia and Herzegovina are still awaiting a starting date for commencement of the negotiation process.

The reform of education systems became a crucial element in the EU accession process for all of the selected countries. To that end, the accession process of these countries within the EU has defined the framework of the basic principles of these educations systems, that is, the Bologna Declaration and the Lisbon Recognition Convention. During the 2000s, in almost all the countries analyzed new and reformed regulations for education were implemented. In each of the respective education systems, the updated system is based on four key pillars: pre-school education and care; compulsory primary education; secondary education; and, higher education. Whilst in all countries pre-school education and care are voluntary and more or less organized in a very similar manner (except in Serbia, where pre-school training in the kindergarten for kids aged 6–7 age is compulsory), primary education is mandatory, and more varieties are observed at the secondary education level. Secondary education is, in general, organized according to the gymnasium model, or as vocational/professional education. In all countries, secondary school is not mandatory and it is free of charge: it is predominantly organized by public state schools, except in North Macedonia, where the secondary school is mandatory and it can be organized by both public and private schools. Montenegro has adopted a more diversified structure of vocational secondary schooling. Primary education is mandatory in all countries. Higher education is dominantly organized according to the Bologna Declaration, in three cycles of studies, namely a bachelor degree (first cycle), postgraduate (master) programs (second cycle), and doctoral studies (third cycle), implemented either as 3 + 2 + 3, or 4 + 1 + 3 years of studies, respectively. Higher education can be organized both by public and private universities and colleges (see Table 1).



Based on the data sets from EUROSTAT and ILO, for the selected countries, we depict the changes in educational structure, the trends in employment, unemployment, and NEET pertaining to the youth population aged 15 to 24 during the period 2009 to 2019.

The youth populations with completed primary educational levels (ISCED 0-2) in selected SEE countries are almost equally represented amongst the countries. The interval of their participation is from 42% to 37%, on average during the period 2010 to 2019, and this is less than the EU28 average. In EU 28 participation of the population aged (15–24), with completed primary and lower secondary education, the figure is approximately 44% on average during the period analyzed. One of the reasons for the lower and decreasing rates of youth population (15–24) with completed education levels (ISCED 0-2) is the negative demographic and intensive emigration patterns in the observed countries.

The participation rate of the youth population aged (15–24) who have completed upper secondary and post-secondary non-tertiary education (ISCED 3–4) is higher than the average rate for the EU 28. During the analyzed period, in the selected SEE countries, around 54% (on average) of the youth population aged (15–24), had completed secondary education, and this is a higher rate compared to the average rate for the EU 28 (46%). During the period analyzed, the highest average percentage can be found in Croatia (57%), and the lowest in North Macedonia (52%). In North Macedonia, due to the changes in the law pertaining to primary and secondary education in 2009, through which the secondary education became mandatory, the percentage of the youth population (aged 15–24) with a completed secondary educational level increased significantly from 2010 onwards (namely, from 48.90% in 2010 to 54.40% 2019).

The share of the youth population with completed tertiary education (ISCED level 5-8) in the EU28 has increased over the analyzed period (from 7.9% in 2010 to 10.10% in 2019). However, the situation with the youth population (aged 15–24) with completed tertiary education in the analyzed group of SEE countries demonstrates higher deviations from the average rates for the EU28. Bosnia and Herzegovina (with 6.45%), and Montenegro (with 6.40%) have the highest share of youth population (aged 15–24) with completed tertiary education in 2019, and these countries observed an increase in the number of youth to have attained a university degree during the analyzed period. In North Macedonia, Serbia, and Slovenia the share of youth (aged 15–24) with tertiary education was 4.40%, 3.50%, and 5.60%, respectively in 2019. Moreover, these countries have a declining trend in the number of youth (aged 15–24) who have attained a university degree. Negative trends in the rates of the youth population (aged 15–24) with

completed tertiary education is due to the emigration of youth and negative demographic trends in these countries. Serbia is the country with the lowest rates of youth population (aged 15–24) with completed tertiary education, with an average rate of 3.6% during the period 2010 to 2019. However, for all analyzed countries, there is one common trend, namely that during the economic recession in 2009 and after it, the youth population (aged 15–24) was more willing to undergo formal education and therefore become enrolled within universities.

Youth that are neither in employment nor in education and training (NEETs) aged (15–24), are most represented in North Macedonia. In 2019, membership of the NEETs category, aged (15–24), in North Macedonia was approximately 27% of the total youth population, and this category of youth is double the average comparative rate for the EU28 (13.6%). Over the whole period, NEET rates in North Macedonia were double the average rates for the EU 28, and they are the highest ones in comparison with NEET rates in the remainder of the countries analyzed herein. The lowest share can be found in Slovenia, at 9% in 2019. In all of the countries analyzed, the NEET share of youth has decreased during the analyzed period, except for Montenegro where there was an increase of 1.2 percentage points in 2019 compared to 2018.

Governments of the countries analyzed during the last decade adopted a number of strategies and policy documents regarding improvement of education systems, and thereby strengthened the school-to work transition process in order to stimulate youth employability in their countries. Unfortunately, besides the declining trends in the rate of youth unemployment, all countries remain far from the average level of the EU28 (15.2% in 2018). Only Slovenia recorded a significant decline in the youth unemployment rate (8.1% in 2018). North Macedonia and Bosnia and Herzegovina recorded the highest rates of youth unemployment (aged 15–24) (47.6% for 2018 Q2, and 38.8% for 2018 Q2, respectively).

Consequently, the situation of youth employability is unsatisfactory. For the group of analyzed countries, they are below the average level of the EU28 (35.3% in 2018), with the exception of Slovenia which is catching up European average rates (with 33.3% in 2018). The lowest rates of youth employment (aged 15–24) are recorded in Bosnia and Herzegovina and in North Macedonia over the whole period (2010–2018).

### *Methodology and Data*

In order to analyze the impact of education on youth employability we developed two multiple linear regression models. They were estimated by using

the ordinary least square method (OLS). The guidance for development of the models draws upon theoretical and empirical literature which focuses on the effect of education on youth employment, see Pieters (2013), Alam and de Diego (2019), and Braziene and Dorelaitiene (2012). The first model attempts to estimate how the attained level of education stimulates the rate of youth employment amongst populations aged (15–24). Given that education plays a significant role as a predictor of NEET status (the percentages of NEET rates should be lower in the subset of highly educated persons), with the second model we therefore try to evaluate the impact of education on decreasing the NEET rates in the group of countries analyzed. The models are defined as:

$$\begin{aligned}
 1 \quad & \text{Youth Employment}_{it} = \beta_0 + \beta_1 \text{NEET}_{it} + \beta_2 \text{Unemployment}_{it} \\
 & + \beta_3 \text{Log}(\text{GDP per capita})_{it} + \beta_4 \text{Education I}_{it} \\
 & + \beta_5 \text{Education II}_{it} + \beta_6 \text{Education III}_{it} + \varepsilon_{it}; \text{ and} \\
 2 \quad & \text{NEET}_{it} = \beta_0 + \beta_1 \text{Unemployment}_{it} + \beta_2 \text{Log}(\text{GDP per capita})_{it} \\
 & + \beta_3 \text{Education I}_{it} + \beta_4 \text{Education II}_{it} + \beta_5 \text{Education III}_{it} + \varepsilon_{it}
 \end{aligned}$$

Variables in the models have the following meaning: *Youth Employment<sub>it</sub>*—the rate of employment of the population aged (15–24) as a % of total labor force in the country *i* for year *t*; *NEET<sub>it</sub>*—rates of NEET aged (15–24) in the country *i* for year *t*; *Unemployment<sub>it</sub>*—the rate of unemployment of the population aged (15–24) as a % of total labor force in the country *i* for year *t*; *Log(GDP per capita)<sub>it</sub>*—*GDP per capita* (logarithmic absolute values) in the country *i* for year *t*; *Education I<sub>it</sub>*—rates for completed education level *ISCED* (0–2) for population aged (15–24) in the country *i* for year *t*; *Education II<sub>it</sub>*—rates for completed education level *ISCED* (3–4) for population aged (15–24) in the country *i* for year *t*; and, *Education III<sub>it</sub>*—rates for completed education level *ISCED* (5–8) for population (15–24) in the country *i* for year *t*.

The Eurostat and ILO databases were the main sources for data, and the time series covered the period 2009–2019. The use of logarithmic values for the *GDP per capita* variable were geared toward obtaining comparable results amongst the countries analyzed, and in order to obtain an indicative picture of these relationships in each country.

## Results and Discussion

The results from the estimation of the first model depict the relationship between rates of youth employment (15–24) as a dependent variable, and

**Table I. The Education Systems of Selected Countries From SEE.**

Country	Pre-school education and care	Compulsory primary education	Secondary education	Adult education	Higher education
BH*	For kids from 6 months to age of 6.	Lasts 9 years for pupils 6 to 15.	It is not mandatory, and it is organized as: General secondary education (Last ears, for students 15–19). Vocational secondary education (lasts 3 or 4 years, for students 15–19).		Higher education is organized in three cycles: Bachelor degree (lasts 3–4 years; 80-240 ECTS); Master degree (lasts 1–2 years, 60–120 ECTS); Ph.D. degree (lasts 3 year, 180 ECTS).
Croatia**	Early and pre-school upbringing and education.	Primary education and upbringing (mandatory— from 6 to 15, for multiple pupils with developmental difficulties up to 21); Primary education programs for adults—for persons older than 15 who have not completed the legally-required primary schooling.	It is not mandatory.	For earning qualifications or requification. It is not free.	It is organized in three cycles: graduate, postgraduate and doctoral studies.

(continued)

Table 1. (continued)

Country	Pre-school education and care	Compulsory primary education	Secondary education	Adult education	Higher education
Montenegro***	It is not a prerequisite for enrolment in primary education. Organized as crèche (for kids up to 3 years) and kindergarten (for kids from 3 to 6 age).	It is organized in three cycles: from I to III grade, from IV to VI grade, from VII to IX grade, (lasts 9 years (from 6 to 15 age).	Gymnasium and it is not mandatory (lasts 4 years). Vocational education (Higher vocational education (VET)) (lasts 3 or 4 years). Lower vocational education: lasts 2 years. There is also 2-year upper vocational education, functioning as a continuation of secondary vocational non-university education.		Bachelor studies (lasts 3 years); Postgraduate studies (lasts 2 years); Doctoral studies (lasts 3 years).
N. Macedonia***	Kindergarten for kids from 6 months to age of 6.	Lasts 9 years, for pupils 6 to 15.	It is mandatory and organized as: General secondary education (gymnasium) (lasts 4 years, for students 15–19); Vocational secondary education (lasts 2 or 4 years, for students 15–19).	Adult education	Bachelor degree (lasts 3-5 years); Higher professional education (lasts 1-2 year), and it is not a link to postgraduate or doctoral studies; Master degree (lasts 1-2 years); Ph.D. degree (lasts 3 years).

(continued)

**Table 1. (continued)**

Country	Pre-school education and care	Compulsory primary education	Secondary education	Adult education	Higher education
Serbia***	Kindergarten programs: are not obligatory, for kids from 1 to 6 years; <b>Pre-school training (one year kindergarten—mandatory)</b> for kids of age 6–7.	Lasts 8 years, for pupils of age 7–14.	Gymnasium: lasts 4 years, Age 15–19; Vocational secondary education, (lasts 2–4 years).	Can be organized as formal and non-formal education.	Academic studies organized at universities: Bachelor degree (lasts 3–4 years, 80–240 ECTS); Master degree (lasts 1–2 years, 60–120 ECTS); Ph.D. degree (lasts 3 year, 180 ECTS); Applied studies organized at colleges or at universities, (lasts 4–6 years). Lasts from 3 to 6 years and it is organized as: Short-cycle of higher vocational education. It is provided by higher vocational colleges. Lasts 2 years, (for students 19–21); Higher education study programs: Covers professional and academic study programs, (for students 19–22); Postgraduate; Doctoral studies.
Slovenia***	It is optional, for kids from 11 months to age of 6.	Lasts 9 years, (for pupils from 6 to 15).	Typical age for students from 15 to 19. Educational programs include vocational, professional, and gymnasium programs.	Adult education	

Source: \*Mujčinović et al. (2021), \*\*Tonković, and Gašparović (2021), \*\*\*EURYDICE: <https://eacea.ec.europa.eu/national-policies/eurydice/> (accessed on 15.04.2021).

NEET rates (15–24), youth unemployment rate (15–24), GDP per capita and rates of attained level of education by youth population (age group 15–24), as independent variables. The results indicate that in almost all countries (with the exception of Montenegro and Slovenia) there is a statistically significant negative relationship between the growth of youth unemployment and youth employment. Hence, it can be concluded that in these countries, young people who are leaving the category of “unemployed” are integrated within the labor market, that is, they become and remain employed persons. Furthermore, it can be seen that in almost all countries there is a statistically insignificant negative link between the changes in NEET rates for the population (aged 15–24) and rates of youth employment. The results suggest that youth NEETs retain this status for a longer period, or that some of these individuals have left their countries. This is not the case for North Macedonia, where the changes in NEET rates (15–24) during the period are statistically significant for changes in the rates of youth employment (15–24). The decreasing of the NEET rates (15–24) by 1% should increase the rate of youth employment by 1.17%. For 2018 and 2019, the Macedonian government developed and implemented YG schemes for stimulation of the employability of the NEET population. The measures of the YG schemes were focused upon qualification and re-qualification of NEET youths aged up to 29, as well as providing financial assistance for self-employment. Hence, a portion of the NEET youths have transformed their status and become employed persons.

The impact of the attained level of education, however, has had an ambiguous effect on the rates of youth employment in the selected group of countries. The changes in the rates of completed educational levels (for ISCED [0–2], ISCED [3–4] and ISCED [5–8], respectively), for young people aged (15–24) in North Macedonia and Serbia have had a statistically significant positive relationship with the changes of youth employment rates. However, in the remainder of the countries analyzed the relationship is positive but not significant (see Table 2). In North Macedonia, most of the young people who attained at least a bachelor degree are more easily integrated into the labor market, and some of them emigrate abroad. Young people with completed secondary education usually enroll at the universities (or emigrate abroad). In Serbia, young people with a completed secondary education level are more easily integrated into the labor market in comparison with the youths have attained a bachelor degree. For the remaining countries, the process of transition from school-to-work is slowing down. One assumed explanation for this is that most of the young people with completed secondary and tertiary education have emigrated abroad. For most of the countries, changes in the GDP per capita have not had statistically significant effects on changes in the rates

**Table 2.** Regression Estimation Results.

Dependent variable: Youth employment rate						
Country	NEET rate (15–24)	Unemployment rate (15–24)	GDP per capita	Education I (ISCED 0–2)	Education II (ISCED 3–4)	Education III (ISCED 5–8)
North Macedonia	-1.173219**	-0.796797*	1.509595***	1.066233***	0.972869	1.139413***
Serbia	-0.049849	-0.290761*	1.351775**	2.371207**	2.585930**	2.078422**
Croatia	-1.286758	-0.741733*	-2.102410	-4.094065	-3.773697	-4.582430
Montenegro	-1.330611	-1.082111	-2.706521	-1.294985	-1.310080	-1.132710
Slovenia	-0.521975	-0.608263	-7.128555	-5.784750	-5.797000	-6.778027
Bosnia and Herzegovina	-1.734811	1.710955*	3.160684	7.853767	8.627029	0.139327

Source. Authors calculations.

Note. \*Significance level 1%. \*\*Significance level 5%. \*\*\*Significance level 10%.



of youth employment. Consequently, the weak economic growth and slow dynamics in creation of new job positions within the labor markets of these countries may explain the weak transition from school-to-work that is observed therein.

The results in the Table 3 show the trends in the NEET rates youth aged (15–24) in the selected group of countries. During the analyzed period 2009 to 2019, it can be concluded that the highest NEET rate (15–24) is found in Bosnia and Herzegovina (28.53%), whilst the lowest rate is in Slovenia (6.50%). The highest mean value for NEET rate (15–24) for the whole period is observed in Bosnia and Herzegovina (26.08%), again, and this is followed by North Macedonia (24.42%), Serbia (19.28 %), Montenegro (18.28%), Croatia (16.05%), and finally Slovenia (7.92%).

The results from the estimation of the second model depict the relationship between NEET rates for youth populations aged (15–24), as a dependent variable, and rates of youth unemployment (15–24), GDP per capita, and rates of attained levels of education by youth populations (age group 15–24), as independent variables.

The results depict a statistically significant and positive correlation between the changes in the unemployment rates of persons aged (15–24) and changes in the NEET rates (15–24) in almost all the countries analyzed. This result implies that most of the young and unemployed persons are becoming a part of the NEET category.

The relationship amongst the changes in NEET rates (15–24) and changes in the youth rates with completed educational levels (for ISCED [0–2], ISCED [3–4], and ISCED [5–8], respectively) are, for the most of the countries, statistically significant and negative. Only Montenegro and Slovenia have positive yet statistically insignificant causality. This implies that in these countries the transformation and integration of the youth and educated people (with complete ISCED [3–4] and ISCED [5–8], respectively) is diminishing. It is very likely that part of this population is moving into the NEET category, whilst another portion emigrate abroad. In North Macedonia, there is a statistically significant negative relationship between the growth of persons with lower, secondary, and higher education and the decreasing the rates of the NEET population aged (15–24). More specifically, the increase of persons with tertiary education of 1% contributes to the decrease of NEET rates (15–24) by 1.18%, whilst the increase of persons with secondary education of 1% indicates a decrease of NEET rates (15–24) of 1.04%. A similar connection is observed in the case of Serbia and Croatia. For the all countries (with the exception of North Macedonia and Serbia) changes amongst the rates of youth with completed educational level ISCED (0–2), and changes in rates of NEET for population aged (15–24), are negatively correlated and statistically insignificant.

**Table 3.** Descriptive Statistics on NEET Rates (for Youth aged 15–24) During the Period 2009–2019.

	Croatia	North Macedonia	Montenegro	Serbia	Slovenia	Bosnia and Herzegovina
Mean	16.05455	24.42727	18.28182	19.28182	7.927273	26.08727
Median	16.20000	24.80000	18.30000	20.10000	7.500000	26.97000
Maximum	19.60000	27.70000	21.30000	21.90000	9.500000	28.53000
Minimum	11.80000	18.10000	16.20000	15.30000	6.500000	21.28000
Std. Dev.	2.450455	2.317365	1.432353	2.245804	1.198408	2.494450
Skewness	-0.162170	-1.820138	0.618048	-0.507106	0.272981	-0.910574
Kurtosis	2.138157	6.559061	3.002343	1.875824	1.384438	2.483844
Jarque-Bera	0.388653	11.87932	0.700304	1.050682	1.332886	1.642207
Probability	0.823389	0.002633	0.704581	0.591354	0.513532	0.439946
Sum	176.6000	268.7000	201.1000	212.1000	87.20000	286.9600
Sum Sq. Dev.	60.04727	53.70182	20.51636	50.43636	14.36182	62.22282
Observations	11	11	11	11	11	11

Source. Authors calculations.

A negative correlation is also observed between the GDP growth per capita and NEET rates (15–24) in each of the countries analyzed. Only for North Macedonia and Bosnia and Herzegovina is this negative correlation statistically significant. The GDP growth per capita of 1% contributes to the reduction of NEET rates (15–24) by 1.49% in North Macedonia, and 1.02% in Bosnia and Herzegovina (see Table 4). Estimated results from this model confirm the fact that the problem with the persistent levels of NEET youth aged (15–24), and low rates of youth employment (15–24), is more connected with the slow process of integration of youth and educated people in the labor market than with the GDP growth rate in these countries.

A limitation of this research is the omission of the costs for education as an independent variable in the models presented. In some empirical research for youth employability based on the multinomial logistic regression models, “costs of education” is used as one of the key explanatory variables. We have used multiple linear regression models, and omitting this variable in our model does not diminish the findings of the research. Given that, we have aimed to evaluate the impact of the flows in different levels of education upon youth employability and changes in the NEET youth population aged 15 to 24 in this group of countries. Another limitation in this research is the missing data for the number of emigrated young people from these countries in the countries outside of this region. Using this data in the models will produce more precise results, but we believe that the main inferences will remain valid. Furthermore, we noticed a multi-collinearity problem between NEET rates and unemployment rates. This is due to the fact that only a portion of NEETs are properly registered with the public employment services as unemployed persons. Therefore, including the unemployment rate in the model produces a clearer view on the flows of young people aged (15–24) and whether they enter the labor market, or stay in education tracks, or become part of the NEET category or they are unemployed persons who are active job-seekers in these countries. However, this research paper has opened the door for future research on this specific topic, where the effects of current policy measures regarding supporting youth employment (implemented in this selected group of countries) can be more precisely evaluated. In that context, the following research should also take into consideration the impact of labor market functioning and the effects of wages on youth employability.

## **Conclusions**

The results of this research suggest that the impact of the attained level of education has an ambiguous effect on the rates of youth employment in the

**Table 4.** Regression Estimation Results.

Dependent variable: NEET rate (15–24)						
Country	Unemployment rate (15–24)	GDP per capita	Education I (ISCED 0-2)	Education II (ISCED 3-4)	Education III (ISCED 5-8)	
North Macedonia	0.391342*	-1.48739*	-1.10928*	-1.03801*	-1.17999*	
Serbia	0.165258**	-3.065481	-0.789762	-1.266044	0.464411	
Croatia	0.255946*	0.407072	-8.143574**	-7.850826**	-7.655031**	
Montenegro	0.257068	-0.691673	-10.10785	10.85135	10.95614	
Slovenia	0.086828	-3.73254	-3.47256	3.981448	4.456753	
Bosnia and Herzegovina	0.144132***	-1.024883***	-0.164335	-0.139083	0.807473	

Source. Authors calculations.

Note. \*Significance level 1%. \*\*Significance level 5%. \*\*\*Significance level 10%.

selected South-eastern European countries. In almost all countries analyzed, people with completed primary and lower secondary education (ISCED 0–2) usually continue the education process in upper secondary and post-secondary non-tertiary education settings (ISCED 3–4). Therefore, there is no effect of this level of education on the level of youth employment in the most of the countries concerned. Youth populations with completed upper secondary and post-secondary non-tertiary education either enter into the labor market, or continues with education in tertiary education (ISCED 5–8). Considering the aforementioned together, the impact of the education level (ISCED 3–4) on youth employability is increasing. In particular, this is more obvious in the Serbian economy, whereby the causality amongst these variables is statistically significant. This research also shows that in the countries with lower levels of GDP *per capita*, youth individuals who have completed some of the tertiary education levels have a greater chance of employment. It was noticed that after the economic crisis of 2009, youth populations were more willing to study.

Additional inference may be derived regarding the impact of GDP per capita on youth employability. For most of the countries analyzed, the causality amongst these variables is negative and statistically insignificant (Croatia, Montenegro, and Slovenia), which implies that youth populations aged (15–24) may dissipate in three flows: either in the higher levels of the education process, or in the NEET category (and thus being unemployed), or to emigrate abroad.

The NEET rates of the population aged (15–24) are very high in each of the countries analyzed. NEET populations create high costs and adverse consequences for society in general, and the economy more specifically. For young people, being NEET is a waste of their potential, talent and skills. Therefore, being a NEET is not just a problem for the individuals in question, but also one of for society and the economy as a whole. Hence, it is very important to encourage NEET young people to remain engaged in the labor market, or to get back into formal education.

The high levels of youth unemployment amongst the populations aged (15–24) suggests that in these countries the process of school-to-work transition is slow and not very efficient. Consequently, this implies that there may be a matching problem in relation to the demanded skills, knowledge, and experience required and the actual supplied knowledge and skills found amongst the young people. By extension, this can permit a reasonable inference that (a) more comprehensive educational policies which increase the acquisition of skills needed in the business sector should be implemented, and (b) policy measures which increase the flexibility and better functioning of the labor market in these countries should be designed and implemented also.

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