

NAVIGATING THE NEXUS: ECONOMETRIC INSIGHTS INTO EDUCATION AND EMPLOYMENT IN THE WESTERN BALKANS

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ABSTRACT

In the rapidly changing global economic environment, economic restructuring, innovation, and globalization have led to marked changes in labor markets, creating significant skill gaps and mismatches. The recent economic upheaval, deepened by the COVID-19 pandemic and geopolitical conflicts such as the Russia-Ukraine standoff, has accentuated the need for a new paradigm of growth, one relying more heavily on domestic resources. The Western Balkan region, blessed with abundant natural resources and a prolific agricultural sector, still counts human capital as its most valuable asset. In this context, the evolution of education and the improvement of workforce skills become key components for enhancing economic recovery and growth in the Western Balkan economies. This research paper offers a comprehensive econometric investigation of the dynamics between education, skills, and employment within Western Balkan countries. Utilizing an extensive dataset of 2905 observations from the Balkan Barometer, Regional Cooperation Council (RCC) database, the study delves into the complex roles of compulsory, tertiary, and adult education systems in enhancing employability across six Western Balkan nations - Bosnia and Herzegovina, Kosovo, North Macedonia, Montenegro, and Serbia. The research employs a robust ordinary least squares (OLS) model to examine the effect of varying education levels and skills on employment while factoring in additional socio-demographic variables such as age, gender, and geographical location. The study challenges the conventional wisdom that suggests educational attainment alone is sufficient in the current job market. It provides quantitative evidence of the

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significant influence of both education and skills in obtaining employment. The analysis reveals a positive correlation between education, skills, and the employment index, affirming their crucial roles in job acquisition. Furthermore, the study considers auxiliary variables like age, gender, and residence, unearthing their potential interrelations with education and employment. The findings suggest that increased employment prospects are associated with older age groups, higher education levels, and urban residency. However, a notable gender discrepancy in the job market is observed, with women showing lower employment levels. The research also uncovers country-specific employment-level disparities, with Macedonia displaying the lowest and Bosnia, Herzegovina, and Kosovo exhibiting the highest employment coefficients. This study underscores the need to incorporate practical training and internships into the education system to boost the employability of young individuals. It further emphasizes the necessity for adequate material, human, and financial resources to facilitate this transition. This study underscores the need to align education and skills development for future employment strategies by providing invaluable insights for policy-making in the Western Balkans.

Key words: *Western Balkans, education, skills, employment, labour market.*

1. INTRODUCTION

This comprehensive paper endeavors to provide a thorough overview of the multifaceted issues impacting the Western Balkans (WB) region, placing particular emphasis on the complex interaction between employment and several independent variables such as government policies, education level, age, gender, education index, and skills index. Employing a rigorous econometric analysis, we aim to delve into the intricate dynamics that shape this region's labor market, drawing upon historical and contemporary labor force data. Our primary objective is to gain a deeper understanding of the influence of human capital on economic performance, examine the extent of skill mismatch and skill gaps, and analyze the consequential implications for the formulation of effective policies.

The process of transition, coupled with prolonged unemployment, has resulted in a significant number of individuals exiting the labor force or settling for low-paying jobs in the informal economy. Skilled workers who are unable to secure formal sector employment may find themselves underemployed in the informal sector, where they often perform tasks below their qualifications, thus giving rise to the phenomenon of "overeducation." Additionally, self-employment has experienced substantial growth, primarily driven by the need for self-subsistence, which may not always align with the skill sets of individuals. Skill mismatch appears to be a persistent issue within the Western Balkans, in stark contrast to more developed EU countries, where it primarily affects younger individuals and tends to decrease with age due to opportunities for

occupational mobility, career advancement within larger firms, and employer investments in on-the-job training. Several factors contribute to this persistent skill mismatch within the region, including the rapid obsolescence of skills with the introduction of new technologies, limited employer investments in training due to an unfavorable investment climate, the gradual erosion of skills due to long-term unemployment, and the inadequate provision of adult education and lifelong learning opportunities, which hinder effective re-skilling efforts. Overcoming such skill mismatch ideally requires increased investment in on-the-job training and career mobility. However, employers often exhibit reluctance to invest in employee training, and structural factors such as limited retraining opportunities and relocation costs significantly restrict career mobility.

The issue of skill mismatch encompasses two primary dimensions: the demand for skills within the labor market and the supply of skills provided by the education and training system. While this chapter predominantly focuses on the labor market demand side of this complex issue, numerous studies have concentrated their efforts on analyzing the education system. Notably, recent research suggests that education systems in transition countries necessitate substantial structural reforms to become more responsive to the evolving needs of the labor market¹. It is argued that the skills mismatch in these economies is closely tied to the poor quality of education and low levels of public expenditure, which have resulted in a shortage of skilled labor². Moreover, the curricula inherited from the previous system often prove ill-suited for developing a service-oriented market economy and fail to adequately reflect the emergence of new occupations in the service sectors and high-technology industries. Vocational education institutions tend to focus on specialized skills that may no longer be relevant in obsolete occupations. Outdated education methods heavily rely on rote learning, neglecting problem-solving skills, and there is a general lack of emphasis on developing transferable skills, commonly referred to as “soft skills.”

Given these challenges, exploring the labor market demand side of skill mismatch in the Western Balkans is of utmost importance. This entails understanding the specific skills and qualifications employers seek and the factors influencing their demand for certain skills. By identifying these patterns and dynamics, policymakers and stakeholders can develop targeted interventions

¹ Sondergaard, L. et al.: Managing for Results at the Pre-University Level of Education., in: Sondergaard, L., Murthi, M., Abu-Ghaida, D., Bodewig, C., Rutkowski, J. (eds.): *Skills, not just diplomas. Managaing education for results in Eastern Europe and Central Asia*, The World Bank, Washington, 2012.

² Murthi, M., Sondergaard, L.: Skills, not just diplomas: the path for education reforms in ECA, *Knowledge Notes Europe and Central Asia*, 20(May) 2010.

to bridge the gap between the skills available in the labor market and those provided by the education and training system.

The primary aim of this paper is to contribute to the existing body of knowledge by examining the intricate relationship between employment and various independent variables, including government policies, education level, age, gender, education index, and skills index. Through a rigorous econometric analysis of labor force data, we endeavor to uncover valuable insights into the labor market of the Western Balkans. This includes exploring the impact of human capital on economic performance, assessing the extent of skill mismatch, and considering the implications for policy development. Additionally, we will evaluate the effectiveness of the educational framework, spanning from primary education to adult education and lifelong learning, in preparing individuals for employment and fostering socio-economic growth.

A comprehensive understanding of the complexities surrounding employment and skill dynamics in the Western Balkans is essential for informing evidence-based policy decisions. By addressing the identified gaps and challenges revealed through this research, policymakers can develop targeted interventions that promote skill development, reduce unemployment rates, and facilitate economic recovery and growth. Ultimately, by aligning the supply of skills with labor market demand, the Western Balkans can enhance its competitiveness, improve standards of living, and foster a sustainable and inclusive economy.

2. LITERATURE REVIEW

2.1. THEORETICAL REVIEW

A significant body of economic research suggests that a well-educated and appropriately skilled workforce can greatly amplify a country's potential for economic growth, productivity, and innovation^{3,4,5,6}. These individuals, equipped

³ Hanushek, E. A., Woessmann, L.: The Role of Cognitive Skills in Economic Development, *Journal of Economic Literature*, 46(3) 2008, pp. 607-668.

⁴ Helpman, E. (Ed.): *General purpose technologies and economic growth*, MIT press, London, 1998.

⁵ Abella, M.: Global competition for skilled workers and consequences, in: Kuptsch, C., Pang, E. F. (eds.): *Competing for global talent*, International Institute for Labour Studies, International Labour Office, Wee Kim Wee Centre & Singapore Management University, Geneva, 2006, pp. 11-32.

⁶ Yusnandar, Y., Masbar, R., Nazamuddin, B. S., Jamal, A.: High-skilled workforce and productivity growth: The knowledge-based economics perspective, in: Effendi, H., Shabri, A.M. (eds.): *Proceedings of the 1st Aceh Global Conference (AGC 2018)*, 2019, pp. 549-552.

with the right skills, not only personally benefit from enhanced employment prospects and wage premiums^{7,8}, but also contribute substantially to organizations and the broader society. They do this by fostering democratic stability, reducing crime rates, advocating for human rights, and propelling innovation^{9,10}.

However, despite these potential benefits, the Western Balkans region—a collection of nations with shared socio-political histories and similar economic profiles—has encountered significant challenges in effectively harnessing and deploying its human capital. Over the past few decades, the region has wrestled with issues of skill shortages, skill mismatches, and high unemployment rates, particularly among certain demographic groups such as young and older workers, and ethnic minorities^{11,12}. The region's struggle to adapt to rapid economic transitions, the ongoing privatization of industries, and a noticeable surge in technological advancements have amplified these issues^{13,14}. Economic restructuring and evolving labor market demands have underscored the urgency for the Western Balkans to adopt a more strategic and proactive approach to education and skills development. Newly created jobs in the region frequently demand different skills than those lost during the transition process^{15,16}. Furthermore, these skills have progressed at a swifter pace than the education and training systems have managed to match, leading to widespread skill shortages

⁷ Hershbein, B., Kearney, M. S.: Major Decisions: What Graduates Earn Over Their Lifetimes, *Hamilton Project*, 4 2020, pp. 1-20.

⁸ Schmelzer, P., Schneider, T.: Consequences of overeducation among career starters in Germany: a trap for the vocationally trained as well as for university graduates?, *European Sociological Review*, 36(3) 2020, pp. 413-428.

⁹ Lochner, L.: Education and crime, in: Bradley, S., Green, C. (eds.): *The economics of education: A comprehensive overview*, Academic Press, 2020, pp. 109-117.

¹⁰ Smith, C.: Trust and Total Factor Productivity: What Do We Know About Effect Size and Causal Pathways?, 2020.

¹¹ Arandarenko, M., Bartlett, W. (eds.): *Labour market and skills in the Western Balkans*, FREN-Foundation for the Advancement of Economics, Belgrade, 2012.

¹² Boswell, C., Stiller, S., Straubhaar, T.: *Forecasting labour and skills shortages: how can projections better inform labour migration policies?*, 2004, pp. 21-38.

¹³ Philipov, D., Dorbritz, J.: Demographic consequences of economic transition in countries of Central and Eastern Europe, *Council of Europe Publishing*, 2003, pp. 69-150.

¹⁴ Kaljoshevska, S.: *Regional competitiveness and growth strategy in Western Balkan countries: the case of FYR Macedonia, Serbia and Albania*, University of Macedonia, Thessaloniki, 2018.

¹⁵ Bejaković, P., Mrnjavac, Ž.: Labour Market in Croatia and the European Union, in: *The Croatian Accession to the European Union*, Springer, Cham, 2018, pp. 119-142.

¹⁶ Mojsoska-Blazevski, N., Petreski, M.: *Impact evaluation of active labour market programs in FYR Macedonia: key findings*, International Labour Organization, Geneva, 2015.

and mismatches^{17,18}. Regrettably, the phenomenon of skill mismatch seems to be a more persistent problem in transition countries, including the Western Balkans, than in developed economies, resulting in high levels of long-term unemployment^{19,20}.

The impacts of this economic transition have been particularly severe for unskilled workers, who have disproportionately lost employment as the skill requirements of blue-collar work have escalated due to technological change^{21,22,23}. Concurrently, job creation in emerging firms has shown bias against those with low educational attainment^{24,25}. Simultaneously, the demand for skilled blue-collar workers has grown, leading to conspicuous skill gaps^{26,27}. This, in turn, has imposed constraints on labor reallocation from low to high-productivity sectors, thereby decelerating the rate of economic growth²⁸.

The vocational and secondary education frameworks within the Western Balkans have not evolved sufficiently to meet the evolving demands of the labor market. A combination of outdated curricula, a deficiency of skills in demand by employers, and an excessive focus on tertiary education to the detriment

¹⁷ Arandarenko, M., Bartlett, W.: *Labour market and skills in the Western Balkans*, FREN-Foundation for the Advancement of Economics, Belgrade, 2012.

¹⁸ Brunello, G., Wruuck, P.: Skill shortages and skill mismatch: A review of the literature, *Journal of Economic Surveys*, 35(4) 2021, pp. 1145-1167.

¹⁹ Arandarenko, M., Bartlett, W.: *Labor market and skills in the Western Balkans*, FREN - Foundation for the Advancement of Economics, Belgrade, 2012.

²⁰ Kriechel, B., Vetter, T.: Skills Mismatch Measurement in ETF Partner Countries, *European Training Foundation*, 2019.

²¹ Bartlett, W., Uvalic, M., Kmezić, M.: Youth unemployment in Southeast Europe: Youth Guarantee in Practice, *LSEE Research on South Eastern Europe*, 2019.

²² Angelopoulos, K., Malley, J., Philippopoulos, A.: Human capital accumulation and transition to skilled employment, *Journal of Human Capital*, 11(1) 2017, pp. 72-105.

²³ Dadush, U.: The effect of low-skilled labor migration on the host economy, *World Bank KNOMAD Working Paper Series*, 2014.

²⁴ Fidrmuc, J., Tena, J. D. D.: UK national minimum wage and labor market outcomes of young workers, *Economics*, 12(1) 2018, p. 20180005.

²⁵ Jakovljevic, M., Zupan, J., Coleman, A.: Model of incentive system for employees: A case of a manufacturing company in Croatia, *South African Journal of Business Management*, 49(1) 2018, pp. 1-10.

²⁶ Brunello, G., Wruuck, P.: Skill shortages and skill mismatch: A review of the literature, *Journal of Economic Surveys*, 35(4) 2021, pp. 1145-1167.

²⁷ Cappelli, P. H.: Skill gaps, skill shortages, and skill mismatches: Evidence and arguments for the United States, *ILR review*, 68(2) 2015, pp. 251-290.

²⁸ Mukoyama, T., Osotimehin, S.: Barriers to reallocation and economic growth: the effects of firing costs, *American Economic Journal: Macroeconomics*, 11(4) 2019, pp. 235-270.

of primary and preschool education have resulted in elevated youth unemployment rates and an excess of graduates lacking the required skills for employment^{29, 30, 31}. Additionally, despite an uptick in enrolment rates, the tertiary education sector in the region still has significant room for improvement and reforms to bolster and improve the quality of education.

The issue of ‘*brain drain*’ will also be examined in our study. This phenomenon, which signifies a decrease in the overall stock of human capital, does not only involve the loss of a large number of skilled individuals but also the loss of critical skills crucial to the economic development of these countries. As such, ‘*brain drain*’ is a two-pronged issue, with both the quantity and quality of human capital affected, and we will explore its implications on the labor markets in the Western Balkans^{32,33}.

2.2. EMPIRICAL REVIEW

Education, Skills, and Employment in WB Countries draw heavily from three major works of literature that highlight various aspects of the larger education-employment scene. To create a theoretical framework for our investigation, this review will present a synthesis of these works.

Giorgio Brunello and Lorenzo Rocco provide insightful information about vocational education’s important but frequently underappreciated function³⁴. To evaluate the effect of vocational education on adult abilities, employment, and wages, the authors examine data from the Programme for the International Assessment of Adult Competencies (PIAAC). Their research shows that vocational education can increase employment and wages in some industries and among particular demographic groups. This study serves as the cornerstone for our investigation into vocational education and its function in the Western

²⁹ Jallade, J. P.: Youth unemployment and education, in: Psacharopoulos, G. (ed.): *Economics of Education*, Pergamon, 1987, pp. 166-172.

³⁰ Mortenson, T. G.: Employment and unemployment rates by educational attainment 1970 to 1976, *Postsecondary Education Opportunity*, 62 1997, pp. 10-15.

³¹ Bojadjieva, D. M. et al.: The impact of education on youth employability: The case of selected southeastern European countries, *Youth & Society*, 54(2_suppl) 2022, pp. 29S-51S.

³² Icoski, M.: Toward a New Youth Brain Drain Paradigm in the Western Balkans, *Policy Paper GMF-Ideas*, 2022.

³³ Sergi, B. S., Henry, A., Weeks, G., Slinn, H., Dumanova, Y.: Four accounts on ‘*brain drain*’ in the Balkans, *SEER: Journal for Labour and Social Affairs in Eastern Europe*, 6(4) 2004, pp. 13-26.

³⁴ Brunello, G., Rocco, L.: The effects of vocational education on adult skills, employment and wages: What can we learn from PIAAC?, *SERIEs*, 8 2017, pp. 315-343.

Balkans. It highlights the potential of vocational education as a tool for boosting labor market inclusion and productivity.

Another layer of insight is provided by John Goodwin and Henrietta O'Connor³⁵. Their research examines how demographic trends differ for younger and older employees in terms of employment, education, and skills. According to the authors, demographic changes significantly impact the labor market, impacting both the availability and character of educational and skill-development opportunities as well as the results of those possibilities in terms of employment. We can explore the particular situation of the Western Balkan countries via the prism of their research on demographic shifts and their effects on labor market results.

Francis J. Greene and George Saridakis (2008)³⁶ serve as the foundation for the rest of our examination of the influence of higher education on the labor market. The authors investigate how higher education institutions might encourage graduates to work for themselves by giving them the skills they need and supporting their entrepreneurial endeavors. This study sheds light on the possibility that higher education can help people develop entrepreneurial abilities that permit self-employment in addition to job-related skills, which is an important perspective for our study in the context of the Western Balkans.

Overall, these publications give our investigation a thorough theoretical foundation. They invite us to explore the complex dynamics of education, skills, and employment from a variety of perspectives, including higher education, vocational education, and demographic shifts. Each of these viewpoints will help develop a complex understanding of the Western Balkan labor market, informing successful and contextually appropriate policy initiatives.

3. RESEARCH METHODOLOGY

This econometric analysis aims to quantify how education and skill levels affect employment in the six Western Balkan nations. The data for this research is based on the Balkan Barometer otherwise known as RCC Data. The Balkan Barometer, an annual survey overseen by the Regional Cooperation Council (RCC), delves into public opinion and business attitudes across six Western Balkan economies. This comprehensive study explores people's hopes, work expectations, prevailing socio-economic and political patterns, as well as at-

³⁵ Goodwin, J., O'Connor, H.: Exploring complex transitions: Looking back at the 'Golden Age' of from school to work, *Sociology*, 39(2) 2005, pp. 201-220.

³⁶ Greene, F. J., Saridakis, G.: The role of higher education skills and support in graduate self-employment, *Studies in Higher Education*, 33(6) 2008, pp. 653-672.

titudes towards regional and European integration. Each year, an independent agency conducts this survey, gathering insights from over 6,000 citizens across the region. So the data belongs to the type of cross-section data since the research includes 6 countries of the Western Balkans, but with the data published by the RCC of 2022.

The analysis seeks to accomplish the following particular goals:

- *Measuring the impact of education level on employment:* The emphasis is on figuring out the influence of education level on employment, with a concentration on measuring employment rather than how difficult it is to obtain a job after graduating from university.
- *Examining the importance of skills in the workplace:* This entails comparing people who are educated but lack the necessary skills, people who are educated but lack the necessary skills, and those who are both educated and skilled. Understanding how skills affect getting a job and weighing the value of combining education and talents for better employment outcomes are the goals.

In six Western Balkan nations, 2905 observations were used to gather the data for this study. Information on employment, engagement in politics, level of education, age, gender, education index, skills index, and other pertinent characteristics are all included in the data. In the course of our research, data was extensively sourced from the *Balkan Barometer*, an annual survey-based project implemented by the *Regional Cooperation Council (RCC)*. This comprehensive survey provides valuable insights into the perceptions and attitudes of both the business community and the general public across the Western Balkans on a myriad of socio-economic topics. The reliability and depth of the *Balkan Barometer* ensured that our analysis was grounded in representative and substantive findings, allowing us to draw well-informed conclusions relevant to the region. All the presented variables are built in the form of indices. Indexes are generated by selecting questions from the *Balkan Barometer* data. Therefore, in this database, some questions represent the presented variables, where the combination of different questions has caused the variables to be generated.

The econometric analysis utilizes a linear regression model to examine the relationship between employment and various independent variables. The model is specified as follows:

$$\text{Employment} = \alpha + \beta_1 (\text{Bosnia \& Hercegovina}) + \beta_2 (\text{Kosovo}) + \beta_3 (\text{North Macedonia}) + \beta_4 (\text{Montenegro}) + \beta_5 (\text{Serbia}) + \beta_6 (\text{High School}) + \beta_7 (\text{University}) + \beta_8 (\text{Master/PhD}) + \beta_9 (\text{Age}) + \beta_{10} (\text{Residence}) + \beta_{11} (\text{Gender}) + \beta_{12} (\text{Education_Index}) + \beta_{13} (\text{Skills_Index}) + \epsilon$$

where:

- α - represents the intercept term.
- β_1 to β_{13} are the regression coefficients that measure the impact of each independent variable on employment.
- States, Education level, Age, Gender, Education index, and Skills index are the independent variables.
- μ represents the error term.

A summary of the variables, their sources, and measures are presented in Table 1 below.

Table 1. Variables source

Variable	Source
Employment	Balkan Barometer Survey (RCC)
States (β_1 Bosnia & Hercegovina, β_2 Kosovo, β_3 North Macedonia, β_4 Montenegro, β_5 Serbia)	Balkan Barometer Survey (RCC)
Education Level (β_6 High School, β_7 University, β_8 Master/ PhD)	Balkan Barometer Survey (RCC)
Age (β_9)	Balkan Barometer Survey (RCC)
Residence (β_{10})	Balkan Barometer Survey (RCC)
Gender (β_{11})	Balkan Barometer Survey (RCC)
Education Quality Index (β_{12})	Balkan Barometer Survey (RCC)
Skill Proficiency Index (β_{13})	Balkan Barometer Survey (RCC)

At first, the analysis required performing individual evaluations for each state in the Western Balkan countries. In the model, a categorical variable was added to account for state-specific variances. Additional variables were included in the model to account for any potential interactions between education, employment, and other variables. These factors quantify how age, gender, and place of residency affect employment and education.

4. RESEARCH RESULTS

We looked at the connections between work status, and several demographic and personal traits (represented by the variables Age, Residence, Gender, education level, and skills) in our dataset of 2,905 observations. The employment

status and education index have a 0.2365 correlation coefficient, which indicates a somewhat good association between the two. There is a propensity for work status to improve as the education level rises. This result is consistent with our hypothesis that a higher degree of education can raise employment prospects.

Table 2. Correlation Matrix

	Employment	Age	Residence	Gender	Education_ Index	Skills_ Index
Employment	1.0000					
Age	0.1127	1.0000				
Residence	-0.0112	-0.0349	1.0000			
Gender	0.0067	0.0406	0.0583	1.0000		
Education_ Index	0.2365	0.1131	-0.0148	-0.0619	1.0000	
Skills_ Index	0.1651	0.0395	-0.0299	-0.0074	0.5425	1.0000

Although the intensity of this association is a little smaller than the relationship with education, employment status also exhibits a positive correlation with the abilities index ($r = 0.1651$). According to this finding, people with more advanced abilities are more likely to find employment, although the influence is not as strong as that of education. The education index and the education index have a very significant association ($r = 0.5425$) when it comes to this relationship. This strong positive connection may indicate that some of the underlying data about people’s human capital are being captured by both of our assessments of education and skills.

There is also some link between the variables Age, Residence, and Gender and the other variables, but this correlation is less strong. Given their weaker correlation coefficients, the associations between these variables and the employment status, education index, and skills index should be evaluated cautiously.

This study offers a preliminary knowledge of the connections in the Western Balkans between employment, education, abilities, and other personal traits. To evaluate the impacts of education and skill on employment status while adjusting for other characteristics, the next step is to build a multivariate regression model. We will be able to determine how each independent variable specifically affects the likelihood of employment as a result.

Table 3. Results of econometric models

	(OLS)	(OLS ROBUST)
1. Bosnia & Hercegovina	-2.325***	-2.325***
	(0.26)	(0.27)
2. Kosovo	-2.165***	-2.165***
	(0.24)	(0.23)
3. North Macedonia	-1.046***	-1.046***
	(0.25)	(0.26)
4. Montenegro	-2.013***	-2.013***
	(0.25)	(0.26)
5. Serbia	-1.790***	-1.790***
	(0.25)	(0.26)
6. High School	1.136**	1.136**
	(0.41)	(0.40)
7. University	1.215**	1.215**
	(0.41)	(0.41)
8. Master/PhD	1.730***	1.730***
	(0.50)	(0.50)
9. Age	0.259***	0.259***
	(0.05)	(0.05)
10. Residence		0.223
	(0.13)	(0.13)
11. Gender	0.154	0.154
	(0.13)	(0.13)
12. Education_Index	0.335***	0.335***
	(0.04)	(0.04)
13. Skills_index	0.186*	0.186*
	(0.08)	(0.08)
Cons	9.543***	9.543***
	(0.60)	(0.59)
R2	0.584	0.628
N	2905	2905

Note: *** Significant at level 1%, ** Significant at level 5%, * Significant at level 10%.

We discovered significant differences between Western Balkan countries in our econometric examination of education, skills, and employment. Being in Bosnia & Hercegovina, Kosovo, North Macedonia, Montenegro, or Serbia is associated with a significant decrease in employment after controlling for factors such as education, skills, age, gender, and other variables. Bosnia & Hercegovina and Kosovo experience the strongest effects, while North Macedonia

experiences the weakest effects. These outcomes withstand reliable standard errors. We discovered a positive and considerable impact when we looked at how education affected employment. A large rise in employment is linked to having a high school diploma, a university degree, or a master's or doctoral degree, with the master's or doctoral degree having the greatest impact. These results are reliable and support the crucial part that higher education plays in improving career chances.

The influence of age on employment is remarkably positive and significant, as anticipated. Work experience that typically corresponds with age might play a crucial role in determining employment status. This is evident in the observed association where each additional year of age corresponds to a 0.259 increase in the employment measure.

Although the gender and the variable residence have positive coefficients, they are not statistically significant at the customary levels, indicating that these variables may not be particularly important for determining job status in this situation.

Our education quality and skill levels metrics, the Education_Index and Skills_Index, are both favorably and strongly related to employment. While an increase in the Skills_Index is linked to a 0.186 rise in employment, an increase in the Education_Index is linked to a 0.335 increase in employment. These findings imply that the Western Balkans' employment situation is significantly influenced by the caliber of one's education as well as their level of expertise. Our model matches the data well, explaining between 58.4% and 62.8% of the variance in employment (as seen by the R-squared values). We used a sample size of 2,905 people.

5. CONCLUSION

We can conclude that our econometric study has shed light on the relationship between employment, skills, and education in the Western Balkan countries. The study emphasizes how important it is to consider both education and skills when predicting employment results in the area. The importance of human capital in improving labor market prospects is highlighted by the association between higher levels of education and higher skill indices and a significantly improved likelihood of employment. This data confirms the need for regional policy measures focused on enhancing education quality and encouraging skill development. Additionally, our model accurately represented the substantial differences in employment status among the various Western Balkan nations, indicating the impact of nation-specific determinants on labor market results. These might include variations in monetary systems, rules governing the job

market, and cultural expectations of work, among other things. Education and skill development are essential, but they should also be reinforced with national initiatives that take into consideration the various socioeconomic situations of each nation. Our work is significant because it offers a solid empirical platform for the next studies and policy issues. It's crucial to recognize that our model does not account for all the variables that can have an impact on employment outcomes. While the study emphasizes correlations, the investigation of causative linkages calls for additional study. Future research might think about using longitudinal data to study the dynamics of education, skills, and employment through time, or including more precise metrics of institutional and policy differences. We can ultimately better guide measures to improve employment outcomes in the Western Balkans by deepening our understanding of these intricate relationships.

Despite the useful conclusions drawn from our econometric study of employment, skills, and education in the Western Balkans, several limitations should be taken into account. First off, the model is built on cross-sectional data, which restricts our capacity to infer causes from the associations we observe. A longitudinal or panel data design would make it possible to conduct a more thorough analysis of the causal ties and changing dynamics between employment, education, and skills across time. Second, even though our model took into account several significant variables, it did not account for all potential implications on employment outcomes. Additional individual-level factors, such as socioeconomic background or personal drive, as well as country-level factors, like specific labor market rules or the stage of economic development, may also be significant. Additionally, although our model included broad categories of education and abilities, it did not take into account the subtle differences across these categories. For instance, there may be major differences in the type and caliber of education and abilities within each group, and these variances may have various employment-related effects. Similarly to this, not all forms of employment are created equal; our model did not account for variations in job quality, pay, or job satisfaction. The indices on which our measures of education and skill are based depend on several presumptions and may not accurately reflect the underlying notions. The validity of these metrics may have an impact on how reliable the results are.

Last but not least, endogeneity may present problems like omitted variable bias or reverse causality. For instance, while having more knowledge and skills may improve work prospects, it's also possible that people with better employment prospects decide to further their schooling or pick up particular skills. Future research should be guided by these limits, to resolve these problems through the use of other research designs, the addition of new variables, the creation of more precise measurements, or the use of endogene-

ity-addressing methods. Despite these drawbacks, the study offers important new understandings of how education, skills, and employment are related in the Western Balkans.

These data collectively imply that factors such as skill level, education level, and quality all matter when determining employment status in the Western Balkans. Additionally, there are substantial disparities in job status between nations, demonstrating the importance of country-specific factors in determining employment results. To fully comprehend these determinants and how they interact with education and skills to determine work status, more research is required.

LITERATURE

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