



Institutional Quality as a Determinant of Economic Growth: Analyzing GDP Trends in Western Balkan Countries

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: The main goal of this paper is to investigate the influence of the quality of (economic) institutions according to the data from the World Bank's specialized Worldwide Governance Indicators database on the gross domestic product per capita of 7 Western Balkan countries: Albania, Bosnia and Herzegovina, Montenegro, Croatia, North Macedonia, Serbia and Kosovo.

Methods: We applied Correlation and regression analysis were used for the set of mentioned data for the period from 2008 to 2022.

Results: The analysis showed that the indicator of the dependent variable (GDP/pc) has a statistically significant strong positive relationship with all indicators of the independent variable (quality of economic institutions), while the regression model determined that only the constant term and Rule of Law are statistically significant.

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Discussion: The results of the research can serve to better understand the relationship between institutions and economic growth, and as such can be a starting point for future policies aimed at improving institutions and economic growth in Western Balkan countries.

Keywords: Quality of institutions; economic growth; GDP/pc; Western Balkan.

1. INTRODUCTION

Economic growth refers to an increase of quantitative indicators of an economy, increase in output per capita in a certain period of time. During the 1950s and 1960s, economic development was observed as a series of successive stages of economic growth and "development became synonymous with rapid, aggregate economic growth" [1]. The subsequent development theories observed those phenomena separately. While economic growth represents an important goal of every country, given that it implies an increase in the ability of the economy over time, measured by the growth of the gross domestic product (GDP) or gross national income (GNI), economic development includes structural and institutional changes and produces quantitative and qualitative changes in society, primarily focused on reduction of poverty and inequality.

It is always an open question how to accelerate economic growth and development so that the country could achieve higher rates on the development scales. As one of the key mechanisms for achieving better rates of economic growth we saw institutions, so in this paper we started from analyzing economic institutions which can help achieve the above. Economic growth is influenced by a large number of factors, and its relationship with institutions and their quality is increasingly known. Institutions for economic growth can be of great importance considering that they shape economic activities, create the framework in which economic activity takes place and define the very interaction between people.

The importance of institutions for economic growth and development is emphasized and visible from the works of Adam Smith, David Landes (1998) and of course Douglass North (winner of the Nobel Prize in 1993), whose definitions and conceptual explanations of institutions are quoted in scientific publications around the world. According to the Voigt S. "institutions matter crucially for economic development" [2]. From a marginal topic in

economics, institutions have become one of the most popular research topics in recent decades.

Institutions represent "the rules of the game in society, that is, limitations designed by people that shape interactions between people" [3]. Thus, according to the North, institutions include formal rules (constitution and laws) and informal rules and restrictions related to codes, norms of behavior and conventions, which are imposed by individuals or social groups [3]. Institutions are a broad term, and the focus of this paper is on economic institutions, which can be defined as "formally determined rules according to which economic interactions of economic subjects take place with the aim of reducing uncertainty in these interactions" [4]. In this paper we have economic institutions in focus, and according to [5] "economic institutions" refer to institutions which perform economic functions in the framework of: establishing and protecting property rights; facilitating economic cooperation and organization.

Efficient institutions are reflected in economic growth and development through a stable political environment, strong economy of the country, significant domestic and foreign investments. Inefficient institutions, on the other hand, lead the country to political instability, economic backwardness and are a sure way to poverty and an increase in the inequality gap.

Western Balkan countries face with many development challenges. They are characterized by insufficient growth rates of GDP, GNI, high public debts, high unemployment, high corruption, unstable political environment, inflation, etc. In the last few years, there has been a noticeable decrease in the volume of foreign direct investments, which represent channels of transfer of technologies and innovations. During the past period, these countries had or still have a very complex job related to integration and joining the European Union.

The strategic determinations of the states, as confirmed by the candidate statuses, oblige these states to strengthen their institutions and

fulfill the conditions for joining the European Union. Candidate status for joining the European Union has: Albania, Bosnia and Herzegovina, Montenegro, North Macedonia and Serbia. Kosovo has the status of a potential candidate for entry into the European Union, while Croatia has been a member of the European Union since 2013. During the past period, these countries had or still have a complex job related to integration with the European Union. This type of integration would lead to greater stability, economic well-being as well as additional approximation to European standards. In this context, it is necessary for them to fulfill many set conditions in order to join this community. A big challenge is the harmonization of the institutional framework, and as the results will show, most of the countries of the Western Balkans do not have a high-quality institutional base and must invest a lot of effort in order to improve it.

2. THEORETICAL BACKGROUND

The main goal of the research has been realized through the analysis of economic institutions through the governance indicators of the World Bank [6] and one of the basic indicators that represent the economic growth of a country. World Bank through Worldwide Governance Indicators (WGI) project annually publishes indicators for six dimensions of management for member countries, namely: Voice and Accountability; Political Stability and Absence of Violence/Terrorism; Government Effectiveness; Regulatory Quality; Rule of Law and Control of Corruption, according to Daniel Kaufmann and Aart Kraay (2023). Description of dimensions of governance is given as follows [7]:

- **Voice and accountability:** capture perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. This table lists the individual variables from each data source used to construct this measure in the Worldwide Governance Indicators.
- **Political stability and absence of violence:** measure perceptions of the likelihood that the government in power will be destabilized or overthrown by possibly unconstitutional and/or violent means, including domestic violence and terrorism.
- **Government effectiveness:** In constructing this index, the authors combine responses on the quality of public

service provision, the quality of bureaucracy, the competence of civil servants, the independence of the civil service from political pressures, and the credibility of the government's commitment to policies.

- **Regulatory quality:** is more focused on the policies themselves. It includes measures of the incidence of market-unfriendly policies such as price controls or inadequate bank supervision, as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development.
- **Rule of law:** measures the extent to which agents have confidence in and abide by the rules of society and it includes perceptions of the incidence of crime, the effectiveness and the predictability of the judiciary, and the enforceability of contracts. These indicators measure the extent of protection of property rights and also the success of a society in developing an environment where fair and predictable rules form the basis of the economic and social interactions.
- **Control of corruption:** measure perceptions of corruption, conventionally defined as the exercise of public power for private gain. According to their definition, the presence of corruption represents a failure of governance.

Economic growth (dependent variable) was examined through indicators by GDP per capita (000 US \$) which is generated through the World Bank [8] online database for the period 2008-2022 for Western Balkan countries.

3. PREVIOUS RESEARCH

History has documented that some countries grow much faster than others. There are many examples of the above, but perhaps the most obvious examples are North and South Korea, West and East Germany, China and Taiwan. Before the Second World War, these countries were on approximate development scales, but after the Second World War they had different development and institutional paths, which led to significant differences in their level of development at the end of the 1980s. These examples point to the importance and role of institutions as a fundamental source of economic development, because thanks to the various institutions formed by these countries, large development disparities occurred over a period

of several decades. Thanks to the increase in differences that are noticeable between countries there is increasing empirical and theoretical literature related to (economic) institutions and economic growth.

Acemoglu et al. (2004) pointed out that "for economic results of primary importance are the economic institutions in society, more precisely the structure of ownership rights and the presence and perfection of the market. Economic institutions are important because they influence the structure of economic incentives in society, so without property rights, individuals will have no incentive to invest in physical or human capital or to introduce new, more efficient technologies". They are also important because they help allocate resources to the most appropriate uses, determine who gets profits, income, and control rights [9].

Acemoglu theoretically (with numerous historical examples) and empirically supported those differences in economic institutions as the fundamental cause of differences in economic development. In a broad explanation of the importance of economic institutions, the authors concluded that some societies are much poorer than others because they have "poor economic institutions" [10].

Hossain (2002) examined the role of economic and political institutions in creating economic and political stability for boosting economic growth in Bangladesh. In this transitional and politically unstable country, political institutions can hardly guarantee political stability, so the author focused on the importance of rapid economic growth with measures that include the development of economic and social institutions [11].

Milenković and Vujović (2020) pointed out that regardless of the historical legacy of the countries of the Western Balkans, the most important thing is the efficiency of the economic policies of those countries and the construction of an institutional environment that should encourage economic growth. The hypothesis was tested that without developing stable institutions high rates of economic growth leading to sustainable development and an efficient education system are not possible, as well as conversely that without high rates of economic growth it is not possible to build stable institutions. In the paper, the economic development of countries is observed through

two periods, from 2000 to 2008 and the period from 2009 to 2019. It was concluded that extractive institutions undermined the economic growth of the country. Also, institutional underdevelopment and corruption are associated with a lower level of education, health, socioeconomic development and brain drain [12].

Acquah et al (2023) estimated the impact of institutions on the level and the growth rate of per capita GDP. They used Generalized Propensity Score method for a large sample of countries over the period 1980–2015 and concluded that institutions matter especially in low- and middle-income countries, and not all institutions are alike for economic development [13].

Góes (2016) contributed to the field of institutions and economic growth by building a panel structural vector autoregression (SVAR) model for a short panel of 119 countries over 10 years and found out that "on average, a 1% shock in institutional quality leads to a peak 1.7% increase in GDP per capita after six years" [14].

Siddiqui & Ahmed investigated the way that institutional indicators influence economic growth using thirty-one indicators each covering 84 countries over a span of 5 years. They concluded that favorable institutions positively affect economic growth and showed that "for a developing country the institutional and policy rent is more important than other two indices that curb political rents and those that reduce transaction risks" [15].

Iqbala and Ali (2024) investigated the effect of financial, economic, social and political institutions on economic growth for the panel of 17 developing countries during the period 2000-2014. They used panel data analysis and found strong influence of institutions on economic growth and that for developing countries institutions are "the most important factor for an economy's growth" [16].

Radulović (2020) examines the effects of the quality of institutions on the economic growth of Southeast Europe and compares the effects in the countries of the European Union and countries outside the European Union in the period from 1996 to 2017. World governance indicators (WGI) were used to measure the quality of institutions and GDP growth rates, through ARDL. The results showed that in European Union countries there is a long-term relationship between the quality of institutions

and economic growth for all significant variables, while in countries outside the European Union only government efficiency, political stability and absence of violence, regulatory quality and voice and accountability are statistically significant. In EU countries, there is no short-term connection between the quality of institutions and economic growth, while in countries outside the European Union, in Southeast Europe, the quality of regulation and voice and responsibility are significant [17].

Economic institutions determine both incentives and restrictions of economic actors and shape economic results. Thus, they are social decisions, which are made because of their consequences. Economic institutions, when encouraging economic growth, arise when political institutions grant power to groups with interests in the broad application of property rights, when they create effective restrictions on power holders and when there is relatively little rent that power holders can appropriate [9].

Based on previous literature it can be concluded that institutions are necessary for economic growth. But, in contrast Smolo (2021) examined the influence of foreign direct investment and institutional quality on the economic growth of the Western Balkan economies using a panel data analysis for 20 years (2000-2019). The paper showed that institutional development has a „significantly negative or no role on growth directly “. Potentially reason for mentioned the same author states that „because the institutions within the sample countries are at low levels of development to make any significant impact on

either growth [18]. Through this research, we will try to examine in more detail the relationship between the quality of institutions and to fulfill the gap within the existing literature about institutions and GDP in the region of Western Balkans in recent time.

4. METHODOLOGY

Correlation analysis will determine whether there is a mutual connection between economic institutions and the GDP of the countries of the Western Balkans. On the basis of panel data for the small open countries of Southeast Europe and the period from 2008 to 2022, an appropriate regression model will be constructed from which specific conclusions will be drawn regarding the influence of independent variables, observed based on the quality of economic institutions, on the selected dependent variable GDP/ pc. The data were analyzed in the STATA software package. These values were used to determine the strength of the relationship expressed using the correlation coefficient [19]:

- correlation coefficient 0.10–0.29 low strength of connection
- correlation coefficient 0.30–0.49 medium strength of connection
- correlation coefficient 0.50–1.00 high strength of connection.

Research hypothesis: There is a statistically significant relationship between GDP/pc and the quality of economic institutions in Western Balkan countries.

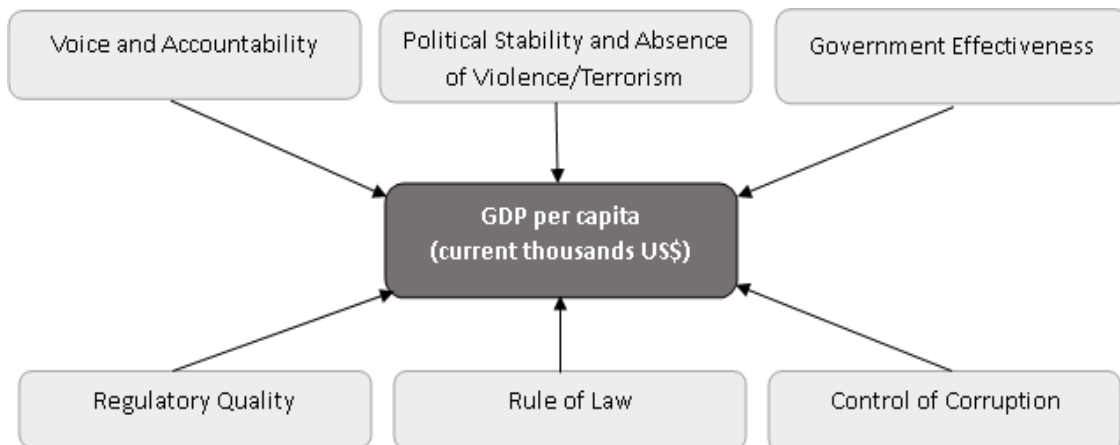


Fig. 1. Research model
Source: Authors

5. RESULTS AND DISCUSSION

Fig. 2 shows the gross domestic product per capita in the countries of the Western Balkans. As can be seen from the above picture, Croatia had the highest amount of GDP/pc in the entire observed period (its highest GDP/pc was in 2022 and was 18.67 thousand US\$, Croatia had the lowest amount of GDP/pc in 2015, 12.14 thousand US\$). All other Western Balkan countries in the observed period had a GDP/pc that was less than 10 thousand US\$ (only Montenegro in 2022 had a GDP/pc in the amount of 10.09 thousand US\$) and their GDP/pc amounts were ranging from 2 to 10 thousand US\$. The lowest amount of GDP/pc in the observed period was achieved by Kosovo, followed by Albania, Bosnia and Herzegovina, North Macedonia, Montenegro and finally Croatia. What is interesting to note is that the order of the countries of the Western Balkans in the observed period 2005-2022 in terms of their amount GDP/pc did not changed.

When it comes to the economic institutions of the countries of the Western Balkans, their condition can be seen in Fig. 3. As can be seen from the

Fig. 2, Croatia had positive values for all dimensions of institutions throughout the observed period and its amounts were higher than the amounts in all other countries of the Western Balkans. Among the other countries, Kosovo and Bosnia and Herzegovina can be singled out, which had the worst values of the quality of institutions (the vast majority of values were negative) and Absence of Violence/Terrorism fell from 1.01 to -1.04.

Table 1 shows descriptive statistics for selected variables. The lowest value of realized GDP/pc is 2,791 thousand US\$ and it was achieved in 2009 for Kosovo, while the maximum value was 18,673 thousand US\$ and it was achieved for Croatia in 2022. When it comes to indicators of independent variables, all the maximum values of the indicators were positive, mostly thanks to the values achieved by Croatia. The highest value was achieved for the indicator Political Stability and Absence of Violence/Terrorism (1.01), which was achieved in Kosovo in 2008, and then for the indicator Government Effectiveness (0.68), the value achieved in Croatia in the period 2010-2014.

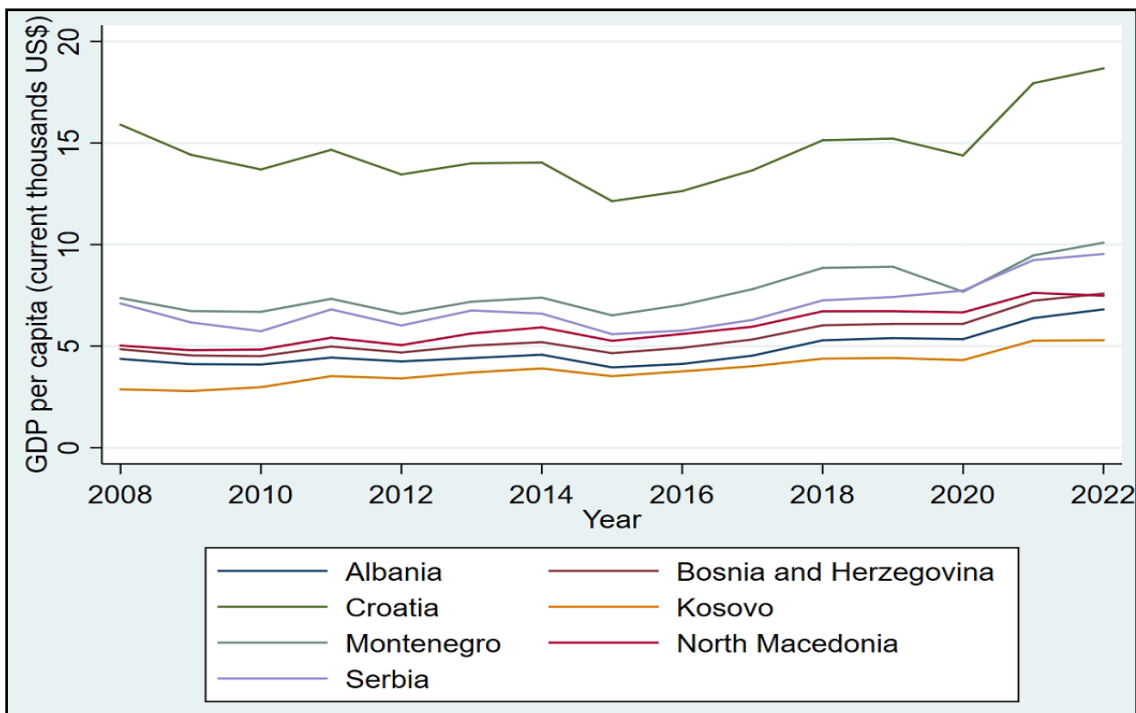


Fig. 2. BDP per capita in Western Balkan countries

Source: Authors

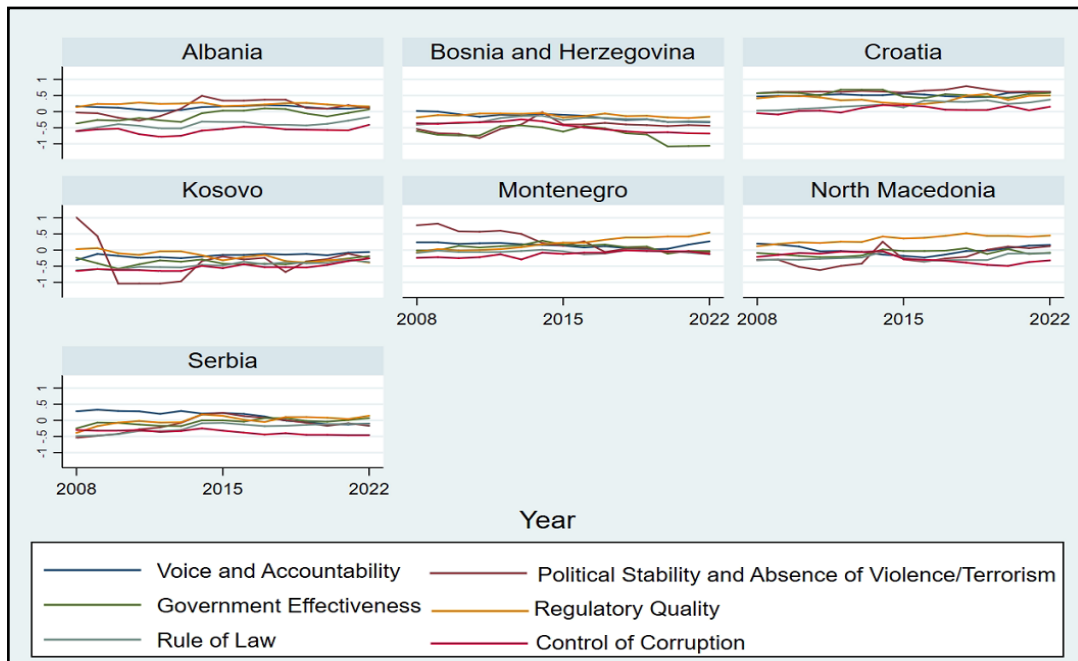


Fig. 3. Institutions in Western Balkan countries

Source: Authors

Table 1. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
gdp pc	105	7.05	3.515	2.791	18.673
va	105	.086	.24	-.33	.61
psavt	105	-.11	.49	-1.04	1.01
ge	105	-.096	.378	-1.08	.68
rq	105	.123	.246	-.39	.55
rl	105	-.207	.233	-.63	.37
cc	105	-.32	.245	-.78	.2

Source: Authors

Table 2. Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) gdp_pc	1.000						
(2) va	0.748*	1.000					
	(0.000)						
(3) psavt	0.560*	0.585*	1.000				
	(0.000)	(0.000)					
(4) ge	0.742*	0.818*	0.598*	1.000			
	(0.000)	(0.000)	(0.000)				
(5) rq	0.561*	0.521*	0.489*	0.677*	1.000		
	(0.000)	(0.000)	(0.000)	(0.000)			
(6) rl	0.867*	0.661*	0.477*	0.716*	0.534*	1.000	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
(7) cc	0.732*	0.689*	0.332*	0.712*	0.502*	0.811*	1.000
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: Authors

The correlation between dependent and independent indicators is presented in Table 2. As can be seen from the table, all indicators are statistically significantly positively related. The indicator of the dependent variable (GDP/pc) has a statistically significant strong relationship with all indicators of the independent variable. The GDP/pc indicator is most closely related to the Rule of Law indicator (0.867 – strong positive relationship) and the least to the Political Stability and Absence of Violence/Terrorism indicator (0.560 – strong positive relationship). The relationships within the indicators of the independent variable are very strong, except for the indicator Political Stability and Absence of Violence/Terrorism with Regulatory Quality, Rule of Law and Control of Corruption, which has a moderately strong positive relationship.

The regression model, that is, the OLS regression model, is presented in Table 3. The value of Prob > F = 0.000 means that the specified model is suitable for further interpretation and analysis. Based on the coefficient of determination R², we see that R²=0.431, which means that 81.7% of the change in the dependent variable (gdp_pc) is explained by 1% of the change in the observed independent variables (va, psavt, ge, rq, rl and cc). Also, based on the p-value column, we note

that the obtained coefficients for Voice and Accountability and Rule of Law are statistically significant at the 1% level, and for the Political Stability and Absence of Violence/Terrorism indicator at the 10% level.

After the OLS regression, we proceed to check the necessary tests for further analysis, i.e. checking the normality of the distribution of the random variable, multicollinearity of the data and heteroskedasticity. The normality of the distribution is presented in Table 4. To analyze the normality, we will use the Skewness Kurtosis test. The Skewness Kurtosis test shows a number of observations of 105 and a probability of skewness of 0.003 which implies that it is normally distributed (p-value of skewness < 0.05). Prob>Chi2 is 0.015 which is less than 0.05 implying its significance at 5% level. Accordingly, according to the Skewness Kurtosis test for normality, the residuals show a normal distribution.

Multicollinearity, or Variance inflation factor, is shown in Table 5. Based on the obtained values from the VIF column, which are less than 10, it can be concluded that there is no problem with multicollinearity in the data. This means that the model can be continued with all selected variables.

Table 3. Linear regression

gdp_pc	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]	Sig
va	4.925	1.179	4.18	0	2.584 7.266	***
psavt	-1.056	.549	-1.92	.057	-2.147 .034	*
ge	.819	.926	0.88	.379	-1.018 2.657	
rq	.988	.847	1.17	.247	-.694 2.67	
rl	11.216	1.291	8.69	0	8.655 13.777	***
cc	-1.908	1.231	-1.55	.124	-4.35 .535	
Constant	8.273	.406	20.38	0	7.467 9.079	***
Mean dependent var	7.050		SD dependent var	3.515		
R-squared	0.817		Number of obs	105		
F-test	73.080		Prob > F	0.000		
Akaike crit. (AIC)	396.460		Bayesian crit. (BIC)	415.038		

*** p<.01, ** p<.05, * p<.1
Source: Authors

Table 4. Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj_chi2(2)	Prob>chi2
residuals	105	0.003	0.409	8.400	0.015

Source: Authors

Table 5. Variance inflation factor

	VIF	1/VIF
ge	5.317	.188
cc	3.947	.253
rl	3.91	.256
va	3.482	.287
psavt	2.838	.352
rq	1.88	.532
Mean VIF	3.562	.

Source: Authors

Various tests help to detect heteroskedasticity such as the Breusch-Pagan test and the White test. Here we will use the Breusch-Pagan test to check for heteroscedasticity. His results are presented below. Prob > chi2 = 0.0059 which is less than 0.05 which means that there is a problem of heteroskedasticity. To correct heteroscedasticity, we will use robust commands, that is, to obtain robust standard errors, we will add the command "vce (robust)" after the regression. In this way, the problem of heteroscedasticity will no longer be present.

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
 Ho: Constant variance
 Variables: va psavt ge rq rl cc
 chi2(6) = 18.13
 Prob > chi2 = 0.0059

Source: Authors

Based on the added robust commands, the originally created OLS model (Table 3) will get a new form, shown in Table 6. And with the newly created model, Prob>F=0.000 means that the specified model fits and can be used. The

coefficient of determination R² is 81.7, which means that 81.7% of the change in the dependent variable is explained by 1% of the change in the observed independent variables.

After the tests, and since we have panel data and cannot use OLS regression, we will start creating the Fixed effect model and the Random effect model. As can be seen in Table 7, the results obtained based on the creation of a regression model with fixed effects are presented. Probability P>F=0.000 which means that the model is correct for analysis and further interpretation. We see that R²=27.2% which means that 27.2% of the change in the dependent variable is caused by a 1% change in the independent variables. In addition, we see that only the constant term and Rule of Law are statistically significant (0 and 0.004, respectively) at the 1% significance level. Other indicators of the independent variable are not statistically significant. Political Stability and Absence of Violence/Terrorism, Government Effectiveness and Control of Corruption have a negative coefficient.

Table 6. Linear regression

gdp_pc	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
va	4.925	1.231	4.00	0	2.483	7.367	***
psavt	-1.056	.724	-1.46	.148	-2.493	.38	
ge	.819	1.06	0.77	.442	-1.285	2.923	
rq	.988	.666	1.48	.141	-.333	2.309	
rl	11.216	1.598	7.02	0	8.045	14.387	***
cc	-1.908	1.133	-1.68	.095	-4.156	.34	*
Constant	8.273	.311	26.56	0	7.655	8.891	***
Mean dependent var		7.050		SD dependent var		3.515	
R-squared		0.817		Number of obs		105	
F-test		60.556		Prob > F		0.000	
Akaike crit. (AIC)		396.460		Bayesian crit. (BIC)		415.038	

*** p<.01, ** p<.05, * p<.1

Source: Authors

Table 7. Regression results – Fixed Effect Model (FE Model)

gdp_pc	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
va	.261	2.024	0.13	.902	-4.692	5.213	
psavt	-.61	.491	-1.24	.261	-1.812	.592	
ge	-1.181	1.408	-0.84	.434	-4.627	2.265	
rq	2.161	2.217	0.97	.367	-3.263	7.585	
rl	5.177	1.135	4.56	.004	2.399	7.956	***
cc	-2.164	1.57	-1.38	.217	-6.005	1.677	
Constant	7.015	.804	8.73	0	5.048	8.982	***
Mean dependent var		7.050		SD dependent var		3.515	
R-squared		0.272		Number of obs		105	
F-test		217.325		Prob > F		0.000	
Akaike crit. (AIC)		294.421		Bayesian crit. (BIC)		310.344	

*** $p < .01$, ** $p < .05$, * $p < .1$
 Source: Authors

Table 8. Regression results – Random effects model (RE Model)

gdp_pc	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
va	4.925	2.076	2.37	.018	.856	8.994	**
psavt	-1.056	1.003	-1.05	.292	-3.023	.91	
ge	.819	1.652	0.50	.62	-2.419	4.057	
rq	.988	1.341	0.74	.461	-1.64	3.616	
rl	11.216	2.063	5.44	0	7.172	15.26	***
cc	-1.908	1.625	-1.17	.241	-5.093	1.278	
Constant	8.273	.693	11.95	0	6.916	9.63	***
Mean dependent var		7.050		SD dependent var		3.515	
Overall r-squared		0.817		Number of obs		105	
Chi-square		1642.239		Prob > chi2		0.000	
R-squared within		0.106		R-squared between		0.947	

*** $p < .01$, ** $p < .05$, * $p < .1$
 Source: Authors

Table 9. Breusch and Pagan Lagrangian multiplier test for random effects

gdp_pc[id,t] = Xb + u[id] + e[id,t]		
Estimated results:	Var	sd = sqrt(Var)
gdp_pc	12.35703	3.515257
e	.9841409	.9920387
u	0	0
Test: Var(u) = 0		
chibar2(01) = 0.00		
Prob > chibar2 = 1.0000		

Source: Authors

Table 8 presents the results obtained based on the creation of a regression model with random effects. Probability $P > F = 0.000$ which means that the model is correct for analysis and further interpretation. It can be observed that R^2 within is equal to 10.6%, R^2 between is equal to 94.7% and overall R^2 is equal to 81.7%. Again we see that the self-constant term and Rule of Law is statistically significant (0 in both cases) at the 1% significance level, and Voice and Accountability

which is statistically significant at the 5% level.

After the formation of fixed and random effects models, it is necessary to evaluate which of the models better fits the data being analyzed. Breusch and Pagan Lagrangian multiplier test for random effects is used to determine whether random effects are significant in panel data models. The test results are shown in Table 9.

From the table it can be seen that Prob > chibar2 =1.0000 is greater than 0.05 which means that random effects are not significant and it is appropriate to use the fixed effect model in this case.

Since we are dealing with panel data, for a more detailed explanation of the interrelationships between individual countries, we will use the Kao panel-data cointegration test. Based on the results obtained in Table 10, it can be seen that there is no co-integration between countries when observing the mentioned indicators.

In the context of all the above mentioned it can be concluded that the basic hypothesis of research has been proven and contrary to Smolo (2021) this paper shed lights on positive institution growth nexus in Western Balkan countries.

“As discussed before Radulović (2020) showed that in European Union countries there is a long-term relationship between the quality of institutions and economic growth for all significant variables, while in countries outside the European Union only government efficiency, political stability and absence of violence, regulatory quality and voice and accountability are statistically significant. In EU countries, there is no short-term connection between the quality of institutions and economic growth, while in countries outside the European Union, in Southeast Europe, the quality of regulation and voice and responsibility are significant” [17]. Our findings suggest that all observed indicators are statistically significantly positively related in

Western Balkan countries. „The indicator of the dependent variable (GDP/pc) has a statistically significant strong positive relationship with all the indicators of the independent variable (it is most closely related to the Rule of Law indicator and least to the Political Stability and Absence of Violence/Terrorism indicator). The results of the research on the relationship between institutions and GDP on ASEAN countries, Sari and Prastyani (2021), showed that there are three keys of institutions that had a significant influence on per capita GDP on ASEAN, namely voice and accountability, regulatory quality, and rule of law” [20]. An interesting research [21] that analyzed developing countries in terms of institutional quality and economic growth determined positive impacts of institutional quality on economic growth. “At the same time, the institutional quality impedes the positive effects of foreign direct investments (FDIs) and trade openness on economic growth. Research on institutional quality in OECD countries has shown negative impact of stringent regulations and administrative burden on the efficiency of product markets also results in a negative impact on overall economic growth” [22]. “The effect of each indicator of institutional quality, however, differs between different nations. According to Tashtamirov, economic growth is positively impacted by investment and population expansion, but only to a lesser extent by trade openness and human capital. These findings suggest that countries should focus on improving institutional quality to foster economic growth, and that policies aimed at promoting population growth and investment may also be effective in driving economic growth” [23].

Table 10. Kao test for cointegration

Kao test for cointegration		
Ho: No cointegration	Number of panels = 7	
Ha: All panels are cointegrated	Number of periods =13	
Cointegrating vector: Same	Kernel: Bartlett	
Panel means: Included	Lags: 1.86 (Newey-West)	
Time trend: Not included	Augmented lags: 1	
AR parameter: Same	Statistic	p-value
Modified Dickey-Fuller t	0.4604	0.3226
Dickey-Fuller t	1.1628	0.1225
Augmented Dickey-Fuller t	1.0841	0.1392
Unadjusted modified Dickey-Fuller t	-.04288	0.3362
Unadjusted Dickey-Fuller t	0.4647	0.3211

Source: Authors

6. CONCLUSION

As mentioned above the quality of institutions in this work was monitored through the following indicators: corruption control, government efficiency, political stability and the absence of violence, the quality of regulation and the rule of law enabled clear conclusions, while economic growth was monitored through GDP per capita of Western Balkan countries in period 2008-2022.

Correlation analysis showed that all observed indicators are statistically significantly positively related. The indicator of the dependent variable (GDP/pc) has a statistically significant strong positive relationship with all the indicators of the independent variable (it is most closely related to the Rule of Law indicator – 0.867 and least to the Political Stability and Absence of Violence/Terrorism indicator – 0.560). Regression analysis determined that the Fixed Effect Model should be used. In that model, only the constant term and Rule of Law are statistically significant (0 and 0.004, respectively) at the 1% significance level. Political Stability and Absence of Violence/Terrorism, Government Effectiveness and Control of Corruption have a negative coefficient. Based on the above data, we can say that the central research hypothesis is accepted.

In the context of accelerating economic growth of Western Balkan countries, as one of the key challenges in the future is certainly building adequate, efficient, transparent and corruption-free institutions. There are many economic problems that those country are facing with, and the strengthening of institutions in this context should perhaps be imperative. Future research should include a detailed analysis of the impact of economic institutions on the economic growth observed by more indicators such GNI, unemployment rates, inflation, public debt, etc. It would be useful and interesting to compare group of Western Balkan countries with other regions and countries which have better institutional performance in order to present more credible conclusions.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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