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The Impact of ESG Risks on the Economic Growth in the Western Balkan Countries

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Abstract: The economy is significantly impacted by environmental, social, and governance (ESG) risks. The growth of the economy can be sped up by the effective management of ESG risks through sustainable business practices. To promote sustainable development and to secure the long-term welfare of employees, customers, and all other stakeholders in the economy, companies must adapt and reposition their business strategies and organizational cultures. The goal of this paper is to determine how a set of common ESG elements, chosen from the viewpoints of sustainability and well-being, influence economic growth in the Western Balkan countries. For each ESG component, we used different variables. The information pertains to the five Western Balkan countries of North Macedonia, Albania, Montenegro, Bosnia and Herzegovina, and Serbia. Because of a lack of data, Kosovo is excluded from the study. Then, we compared results from the analysis of the Western Balkan countries with a set of countries in Southeast Europe, which are members of the European Union and essentially coincide with the Western Europe countries. We performed multiple regression analysis with applied fixed effects to the data model. According to the study's findings, each of the independent variables had no significant impact on the GDP's annual growth of the Western Balkan countries, but two of the variables, life expectancy at birth and labor force participation, have certain impact on the GDP growth of Southeast Europe countries, which are members of the European Union. The green transition has gained significant importance in the Western Balkan countries as a crucial pathway toward sustainable economic growth, though it introduces a range of new social and economic challenges. Economically, these nations are confronted with considerable funding requirements for development. To build sustainable societies, it would be beneficial for these countries to explore more creative financing strategies. It is advised to establish financing frameworks that not only increase the transparency in policymaking but also ensure greater accountability in their execution.

Keywords: economic growth; ESG risks; sustainability; Western Balkans

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1. Introduction

Implementing a corporate strategy that combines social, governance, and environmental principles will have an impact on reforms and the development of sustainable methods of operation. The modern definition of sustainable development emphasizes social and environmental objectives that must be addressed in order to safeguard the wellbeing of each participant in the economy. It implies a major change in the society's economic architecture. The ESG factors are a subset of non-financial performance indicators which include environmental (such as natural resource use, carbon emissions, energy efficiency), social factors (workforce, diversity, supply chain), and governance factors (such as board independence, board diversity, shareholder rights, corporate ethics, etc.) accepted by stakeholders of economic system [1].

The shift in the economic system towards long-term sustainability has resulted in the creation of a novel social agreement for all economic participants. The European Union is taking steps in this direction and passing legislation to alter how businesses engage with sustainability.

Environmental, social, and governance (ESG) factors are playing an increasingly critical role in fostering sustainable development [2,3]. The United Nations established the Sustainable Development Goals, commonly known as the Global Goals, as a worldwide initiative aimed at eliminating poverty, safeguarding the environment, and ensuring that by 2030, all people can enjoy peaceful and prosperous lives [4]. Sustainable development involves a series of interconnected and interdependent processes across society, the environment, culture, and the economy, all aimed at enhancing overall well-being [5,6].

ESG has emerged as one of the most influential trends in recent decades [7,8]. However, the exploration of the link between a country's ESG metrics and its economic performance is a relatively new area of economic research. According to Ho and colleagues [9], the connection between ESG outcomes and economic growth remains a debated issue in the economic literature. They noted that there are three diametrically opposed opinions. Some authors believe that there is mutual connection and influence between economic growth and ESG performance, while other authors consider that there is no connection between them. Most authors believe that there is a partial and certain connection. Thus, with the implementation of good ESG factors, good management, and appropriate regulation, systematic market failure can be corrected, and productive and successful investments can be attracted that will contribute to faster economic growth. At the same time, the countries with higher GDP can invest in healthier working and living environments, more advanced social programs, and ensure better governance of institutions.

Leogrande and his co-author [10] examine how GDP growth influences the worldwide adoption of ESG principles, highlighting that the link between integrating ESG factors and GDP patterns is still ambiguous. Economists and scientists conduct comprehensive and deep analyses of the factors that influence economic growth. However, as we have already noted, the role of ESG is still an unknown and there are only pioneering attempts to research it [11].

It was the challenge of this study to aim to evaluate the contribution of specific ESG concept factors to economic growth in Serbia, Montenegro, Bosnia and Herzegovina, North Macedonia, and Albania, which are five Western Balkan countries. Then, for a better understanding, we compared the results from the analysis of the Western Balkan countries with a set of countries in Southeast Europe, which are members of the European Union and essentially coincide with the Western Europe countries. Therefore, the research purpose is to examine the impact of selected ESG factors to a country's annual GDP growth in the Western Balkan countries and other countries from Southeast Europe which are already members of the European Union. There are three sections in this paper. First, a review of the relevant literature is provided, followed by an explanation of the methodology used, an empirical analysis, and an interpretation and discussion of the results. Final thoughts and the materials consulted are provided at the conclusion.

2. Literature Review

The evaluation of environmental, social, and governance (ESG) factors is becoming increasingly prominent both in academic studies [12] and within the business sector [13]. ESG can be seen as a broader taxonomy that defines the so-called non-financial goals of an organization [14,15]. The reporting responsibilities of companies go beyond financial indicators [16]. There is an interrelationship between ESG performance and economic growth. ESG performance have influenced on the efficiency of markets, new investments, new advanced technologies, with positive impact to the growth and development. ESG creation and implementation is a key factor in creating sustainable business [17]. ESG was created in 2004 as a tool to help investors communicate material long-term risks [18,19]. It is not only humanity, but also businesses, that are exposed to the changes associated with

climate change [20]. The concept of ESG stems from responsible and ethical investing [21]. Companies can increase accountability and transparency by reporting on ESG issues in the right way [22]. ESG is also often associated with financial adequacy, which can be said to affect the financial performance or solvency of organizations in both positive and negative ways [23,24]. There is no doubt that a link can be identified between the ESG performance of companies and their financial performance [25]. However, ESG is not only linked to financial performance, but also to long-term competitiveness, transparency, and social responsibility [26].

The FT Lexicon offers a concise explanation of ESG: In capital markets, investors refer to "ESG" (environmental, social, and governance) as a broad term to evaluate corporate conduct and predict companies' future financial outcomes [27]. ESG elements represent a subset of non-financial performance indicators, addressing ethical concerns, sustainability practices, and corporate governance issues, such as minimizing a company's carbon footprint and establishing mechanisms for accountability. Considering ESG factors in investment decisions is now essential for promoting sustainable development and fostering long-term investments in sustainable economic activities and projects [28,29]. Due to its significance for economic growth, the notion of sustainable finance has gained worldwide attention from regulators [30], institutional investors, and asset managers [31]. The ability to address issues like the environment, equality, and geopolitical concerns, all of which are directly tied to the capability to do so, will depend on our ability to accomplish and maintain economic success [32]. The effectiveness of sustainable financial systems depends on the knowledge and awareness of ESG risk. Ziolo and his co-author [33] found that well-implemented ESG policies can significantly enhance an economy's ability to recover from crises, influencing both household and private sector behavior. They pointed out that ESG initiatives, including robust education systems, secure property rights, and effective governance, are essential in reducing an economy's vulnerability to negative economic shocks.

Several scholars propose that economic growth can be a catalyst for better ESG performance, positing that increased economic expansion can lead to significant improvements in ESG metrics. They argue that accelerated growth bolsters a country's capacity to maintain high levels of investment, thereby driving technological progress and encouraging innovation. Sustainable growth requires socially responsible investments that are worth exploring in depth [34,35]. Sustainable aspirations are closely linked to the strengthening of competitiveness and the innovation potential of an organization [36,37].

A wide range of studies has examined how specific ESG factors influence economic growth. Ho and colleagues [9] investigated the causal link between ESG performance and GDP growth in 118 countries between 1999 and 2015, focusing on three income brackets: low, middle, and high. They assessed three primary ESG indicators: CO_2 emissions, life expectancy at birth, and the Control of Corruption index. Their research revealed a one-way relationship from governance to growth across all nations, although the impact differed by income level, with ESG performance having a stronger effect on economic growth in low-income countries. In another study, Bostjancic [38] examined the relationship between a country's ESG rating and its GDP growth. By applying a fixed effects model to panel data from 124 countries over a 20-year period, Bostjancic introduced an innovative composite sovereign ESG measure. The findings revealed that ESG performance had only a marginal impact on a country's GDP growth [39,40].

Leogrande and Costantiello [10] conducted a global analysis on the link between GDP growth and ESG factors, utilizing data from 193 countries between 2011 and 2020. They employed both panel data with fixed effects and pooled ordinary least squares (OLS) models, incorporating variables from each ESG category. Their econometric results showed a positive correlation between GDP growth and the "S" factors in the ESG framework. The "G" factors had mixed results: while government effectiveness was positively correlated with GDP growth, Voice and Accountability showed a negative correlation. The "E" factors generally had a negative association with GDP growth. Additional research

indicated a positive relationship between ESG performance and GDP growth in the USA, whereas in Europe, this relationship was negative. In Asia, from 2013 to 2017, there was a positive link between financial development, ESG scores, and GDP growth. Sustainable financial systems are vital for advancing the sustainable development paradigm [41,42]. Pisano et al. [43] argue that traditional finance focuses solely on profit maximization, whereas sustainable finance pursues multiple goals, incorporating ESG criteria. According to the Financial Supervisory Authority of Norway (Finanstilsynet), a sharp and sudden rise in carbon prices by 2025 could result in a GDP decline of up to 4.4% over two years in Norway. However, they concluded that the financial impact would be "manageable" for Norwegian banks [44]. In a study of the significance of sustainable finance and investment in the Western Balkans, Barjaktarovic Rakocevic and colleagues [45] found that such investment is even more critical for this region. Western Balkan countries are the subject of the study since they are future EU members, and all the countries, except for Albania, in the period before the start of the transition processes were an integral part of the common federation, and thus, the postulates of the same economic system were valid in them. In addition, all countries are not yet part of the European Union. The region, with a population of under 20 million, is characterized by a relatively low level of economic development. In all six countries, GDP per capita remains below half of the EU average. Despite differences in their economic development, these nations have all shown positive average growth rates over the analyzed period. The strong financial sectors in these countries have the potential to significantly contribute to building sustainable, long-term economies in the region. Promoting the Green Agenda for the Western Balkans is a key strategic objective for the EU [29]. Furthermore, the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) includes central banks and supervisors from most Western Balkan countries, excluding Bosnia and Herzegovina. The NGFS seeks to promote best practices, improve environmental and climate risk management within the financial sector, and leverage mainstream finance to facilitate the transition to a sustainable economy [46–48].

These arguments have led us to propose the following hypotheses:

H1. *Environmental performance positively affects a country's annual GDP growth;*

H2. *Social performance positively affects a country's annual GDP growth;*

H3. *Governance performance positively affects country's annual GDP growth.*

3. Methodology and Data

Based on previous research [9,10,38], we decided that the economic model used in the empirical analysis should include separate ESG components and their potential impacts on GDP growth. The model is shown in the following three different equations, as follows.

$$\text{Annual growth of GDP}it = \alpha i + \beta 1\text{Renewable energy consumption}X1it + \beta 2 \ln \text{CO}_2 \text{ emissions}X2it + \beta 3\text{Labor force participation rate}X3it + \beta 4\text{Life expectancy at birth}X4it + \beta 5\text{Human rights index}X5it + \beta 6\text{Government Effectiveness}X6it + eit$$

where:

α = constant
β = coefficients of independent variables
X = vector of independent variables
e*it* = residual

This analysis primarily examines the annual percentage growth in GDP, which is calculated as the year-over-year increase in GDP at market prices, adjusted for constant local currency values. This measure is commonly used to assess economic activity, offering valuable insights into a country's economic health and living standards. Standardizing

economic growth metrics enables meaningful comparisons between different countries. The contribution of various sectors to economic growth is assessed by examining the increase in their value added, which provides a detailed overview of overall economic performance. Specific independent variables are used to analyze each component of the ESG framework, carefully chosen to reflect the different dimensions of environmental, social, and governance factors. To ensure clarity and accurate use of public information, the European Union has established an ESG taxonomy, with precise standards for each category. For the Environmental (E) aspect, "Renewable energy consumption as a percentage of total final energy consumption" is used, indicating the share of renewable energy in the overall energy mix.

Another key variable for the E component is "CO_2 emissions (kt)", which measures carbon dioxide emissions from fossil fuel combustion and cement production. These emissions are reported in kilotons and then transformed into their natural logarithm for the analysis.

Economic growth is closely connected to industrial production, which typically leads to higher energy consumption and increased CO_2 emissions. Therefore, it is expected that a rise in energy consumption will have a positive effect on GDP growth. Renewable energy consumption can drive economic growth by fostering technological innovations as well as reducing dependence on imported fossil fuels. In comparison with fossil fuels, the starting costs for renewables are higher but more cost-competitive in the long-term. Additionally, investment in the renewable energy sector can stimulate economic growth with creation of new jobs. On the other hand, higher CO_2 emissions influence climate change and can cause increasing environmental costs to infrastructure and agricultural production.

The Social (S) component is represented by variables such as the labor force participation rate and life expectancy at birth. The labor force participation rate, expressed as a percentage of the population aged 15–64, reflects the proportion of people actively participating in the workforce, making it a crucial indicator of a country's human capital development. The higher value of this variable means that more people are involved in economic activities with positive impact of the economic growth. Life expectancy at birth, which indicates the average number of years a newborn is expected to live based on current mortality rates, serves as an important measure of a nation's health and social development. In addition, the longer life expectancy at birth means that people may work longer with positive impact of the economic activities and growth.

For the Governance (G) component, the Human Rights Index (Civil Liberties Index) is employed. This index measures the extent to which individuals are protected from government abuses, such as torture, forced labor, and restrictions on property rights, movement, religion, expression, and association. It draws on evaluations from about 3500 country experts, supplemented by additional research, and is managed by the V-Dem Institute at the University of Gothenburg in Sweden. Another key variable within the G component is "Government Effectiveness", which assesses the quality of public services, the independence of the civil service from political pressures, the quality of policy formulation and implementation, and the government's credibility in its policy commitments. This variable is measured on a scale from −2.5 to 2.5, representing a standard normal distribution. These two variables imply better regulatory, business and governance policies with contribution for economic stability and growth.

The analysis is centered on five Western Balkan countries—North Macedonia, Albania, Montenegro, Bosnia and Herzegovina, and Serbia—excluding Kosovo due to data limitations. The data spans from 2013 to 2022 and is presented annually. For the years 2021 and 2022, due to limited information, the data for indicators, such as renewable energy consumption and CO_2 emissions, are assumed to remain consistent with 2020 levels (Table 1).

Table 1. Review of variables in the model.

Variables	Source
Dependent variable	
Annual growth of GDP	World Bank Database
Independent variables	
Renewable energy consumption as % of total final energy consumption	World Bank Database
CO_2 emissions (kt)	World Bank Database
Labor force participation rate	World Bank Database
The life expectancy at birth	World Bank Database
Human Rights Index (Civil Liberties Index)	V-Dem Institute
Government effectiveness	World Bank Database

Source: Own edition of the authors.

Building on previous research, this analysis also compares the Western Balkan countries with a broader group of Southeast European nations, including Croatia, Bulgaria, Greece, Romania, and Slovenia. These countries, as members of the European Union, are generally aligned with Western European standards. The clustering of these countries follows the methodology used by Leogrande and Costantiello [10], who grouped countries into three clusters based on a quantitative analysis of median GDP growth values (C1 = 5.3, C3 = 4.8, C2 = 4.12). Additionally, the clustering approach is consistent with the research of Ho and co-authors [9], who divided countries into three sub-samples according to the World Bank's income classification, reflecting different stages of economic development: high-income, upper-middle-income, and lower-middle-income/low-income nations [43].

Thus, according to our analysis of ESG risks, the data set includes in two clusters: the first countries of the Western Balkans, and the second, the other part of Southeast Europe (members of EU) (see Supplementary Materials).

The conclusions drawn from this analysis will apply only to them.

Given that the mentioned economic model includes both time and cross-sectional components, its assessment (i.e., the estimation of coefficients) requires a panel data method.

The starting point in any panel model estimation is to use the Hausman Test to select a fixed effect or random effect model. Based on the calculations of the Hausman Test, the *p*-value for the first cluster—the Western Balkan countries—is 0.0189, while for the second cluster—the other countries from Southeast Europe—the *p*-value is 0.0284. Therefore, we can say that at the 5% level of significance, the fixed effect model is more consistent. Thus, the fixed effects model will be appropriate for both clusters.

Other reasons why the fixed effects model is desirable in the analysis of economic systems are:

- it is very likely that the unobserved individual effects (representing the characteristics of the units) are correlated with the other regressors;
- it is highly likely that such a panel does not represent a random sample of interest.

4. Research Analysis and Discussion

4.1. Descriptive Statistics for Western Balkan Countries

In Table 2, the descriptive statistics of the variables for the Western Balkan countries is given.

The summary statistics in Table 2 highlight a few important observations. To begin with, both the mean and median GDP growth rates are quite consistent, with the lowest value at −0.15 and the highest at 0.13. Likewise, renewable energy consumption and labor force participation rates exhibit minimal variation across the dataset. In contrast, the standard deviation of 1.06 in CO_2 emissions, along with the moderate spread between the minimum and maximum values, suggests differences in environmental impact among the countries analyzed. Additionally, there is a distinct variation in life expectancy at birth across these nations.

Table 2. Descriptive statistics for Western Balkan countries.

	Annual GDP Growth	Renewable Energy Consumption	CO_2 Emissions	Labor Force Participation	Life Expectancy at Birth	Human Rights Index	Government Efectiveness
Mean	0.027251	0.310150	9.165755	0.642341	76.22405	4.412000	−0.139909
Median	0.032400	0.306850	8.861042	0.648920	76.20640	4.250000	−0.029691
Maximum	0.130435	0.493400	10.76517	0.732060	79.28200	6.400000	0.293970
Minimum	−0.153069	0.170500	7.673549	0.539110	72.78049	2.700000	−1.075679
Std. Dev.	0.039414	0.099035	1.065919	0.046208	1.409202	0.916658	0.325824
Skewness	−1.831334	0.105207	0.217874	−0.552315	0.179637	0.282150	−1.611148
Kurtosis	11.12125	1.394234	1.674570	2.773660	3.372238	2.295760	4.883072

Source: Own calculations of the authors.

4.2. Correlation and Regression Analysis for Western Balkan Countries

The below table shows the correlation and the regression analysis for the measured countries. In Table 3, the correlation analysis of the variables are given.

Table 3. Correlation analysis of variables in the model.

Variables	Annual GDP Growth	Renewable Energy Consumption	CO_2 Emissions	Labor Force Participation	Life Expectancy at Birth	Human Rights Index	Government Efectiveness
Annual GDP growth							
Renewable energy consumption	0.051256						
CO_2 emissions	−0.006736	−0.644546					
Labor force participation	0.126778	0.099726	−0.148663				
Life expectancy at birth	−0.073505	0.469910	−0.341759	−0.060740			
Human rights index	−0.055042	−0.034667	0.324411	−0.705202	0.392378		
Government efectiveness	0.030349	0.050019	−0.395841	0.651864	0.050162	−0.464168	

Source: Own calculations of the authors.

Correlation coefficients are computed to determine the nature of the relationship—positive or negative—between the dependent and independent variables mentioned earlier. The analysis shows that the correlation with the dependent variable is relatively weak. The signs of most coefficients are accurately identified. Notably, there is a moderate negative correlation between renewable energy consumption and CO_2 emissions, as well as between the Human Rights Index and labor force participation. This implies that higher labor force participation is associated with a smaller increase in the Human Rights Index. The regression analysis aims to examine the regression coefficients and understand the extent to which changes in the dependent variable are impacted by the independent variables in the model, while controlling for unobserved, time-invariant, and country-specific factors. Table 4 presents the regression analysis results for annual GDP growth in relation to the independent variables. The results suggest that these independent variables do not have a statistically significant impact on annual GDP growth.

Table 4. Regression analysis between annual growth of GDP and independent variables for Western Balkan countries.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	−0.542608	0.981214	−0.552997	0.5834
Renewable energy consumption	0.139723	0.185232	0.754311	0.4552
CO_2 emissions	0.132403	0.118332	1.118912	0.2700
Human rights index	0.017624	0.015142	1.163904	0.2515
Labor force participation	0.575552	0.351704	1.636470	0.1098
Life expectancy at birth	−0.014739	0.008139	−1.810968	0.0779
Government efectiveness	0.078969	0.051500	1.533376	0.1333
R-squared	0.174303	Mean dependent var	0.027251	
Adjusted R-squared	−0.037414	S.D. dependent var	0.039414	
S.E. of regression	0.040145	Akaike info criterion	−3.401119	
Sum squared resid	0.062852	Schwarz criterion	−2.980474	
Log likelihood	96.02798	Hannan-Quinn criter.	−3.240935	
F-statistic	0.823282	Durbin-Watson stat	2.749306	
Prob (F-statistic)	0.608762			

Source: Own calculations of the authors.

4.3. Descriptive Statistics for Other Countries from Southeast Europe

In Table 5, the descriptive statistics of the variables for Other Countries from Southeast Europe is given.

Table 5. Descriptive statistics for Other Countries from Southeast Europe.

	Annual GDP Growth	Renewable Energy Consumption	CO_2 Emissions	Labor Force Participation	Life Expectancy at Birth	Human Rights Index	Government Efectiveness
Mean	0.023672	0.230580	10.39861	0.690163	77.78620	0.902200	0.361010
Median	0.029205	0.220000	10.60348	0.680050	77.65000	0.900000	0.306570
Maximum	0.130411	0.341000	11.22778	0.766100	81.78780	0.940000	1.138621
Minimum	−0.093164	0.164000	9.431666	0.639090	71.46341	0.850000	−0.286919
Std. Dev.	0.040320	0.053902	0.694140	0.032729	3.018423	0.029849	0.432495
Skewness	−0.526307	0.856814	−0.180802	0.700571	−0.083816	−0.266402	0.432585
Kurtosis	4.487701	2.620149	1.324584	2.364005	1.587945	1.769795	2.103727

Source: Own calculations of the authors.

The summary statistics shows that there are no big differences between the value of the variables, except in life expectancy at birth, with a standard deviation of 3.018.

4.4. Correlation Analysis for Other Countries from Southeast Europe

In Table 6, the correlation analysis of the variables is given.

Compared to the Western Balkan countries, there are differences in the correlation between the life expectancy at birth and both the Human Rights Index (0.58) and government effectiveness (0.72).

Table 7 presents the regression analysis results for annual GDP growth in relation to the independent variables.

The model shows a 10% probability that the social component, through the indicators of life expectancy at birth and labor force participation, has a statistically significant impact on GDP growth. There is no significant influence of the variables from the E and G components on the annual growth of the GDP.

Table 6. Correlation analysis of variables in the model.

Variables	Annual GDP Growth	Renewable Energy Consumption	CO_2 Emissions	Labor Force Participation	Life Expectancy at Birth	Human Rights Index	Government Efectiveness
Annual GDP growth							
Renewable energy consumption	0.140132						
CO_2 emissions	−0.055860	−0.506450					
Labor force participation	0.128430	−0.290953	−0.490268				
Life expectancy at birth	−0.180581	−0.140190	−0.328371	0.139306			
Human rights index	−0.114906	−0.000302	−0.035243	−0.253023	0.582285		
Government efectiveness	0.019134	0.222262	−0.800351	0.404508	0.725679	0.365332	

Source: Own calculations of the authors.

Table 7. Regression analysis between annual growth of GDP and independent variables for other countries from Southeast Europe.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	−0.870837	1.692864	−0.514416	0.6099
Renewable energy consumption	0.421199	0.831637	0.506470	0.6154
CO_2 emissions	0.151745	0.141754	1.070482	0.2910
Human rights index	−0.034035	0.308985	−0.110152	0.9129
Labor force participation	0.786318	0.420286	1.870913	0.0689
Life expectancy at birth	−0.016938	0.010035	−1.687859	0.0994
Government efectiveness	0.069286	0.053755	1.288929	0.2050
R-squared	0.204897	Mean dependent var	0.023672	
Adjusted R-squared	0.001024	S.D. dependent var	0.040320	
S.E. of regression	0.040299	Akaike info criterion	−3.393431	
Sum squared resid	0.063337	Schwarz criterion	−2.972786	
Log likelihood	95.83576	Hannan-Quinn criter.	−3.233247	
F-statistic	1.005022	Durbin-Watson stat	2.465225	
Prob (F-statistic)	0.456400			

Source: Own calculations of the authors.

4.5. Discussion

The analysis does not conclusively establish that ESG variables directly influence GDP growth on Western Balkan countries, as there are likely multiple contributing factors at play. It is crucial to consider that the period of analysis includes 2019, 2020, and 2021, which were significantly impacted by the COVID-19 pandemic, resulting in a marked decline in GDP growth globally.

Concerning CO_2 emissions and their effect on GDP growth, Ho and co-authors [9] identified a bidirectional causal relationship. This indicates that economic growth and environmental quality are mutually influential. The nature of this relationship differs based on income levels: high-income countries typically experience a positive causal link from economic growth to improved environmental quality, while low-income countries show the reverse. For upper-middle-income nations, a bidirectional relationship between GDP and CO_2 emissions is evident [9].

Additionally, the study highlighted a connection between life expectancy and GDP per capita, suggesting that economic growth can be a predictor of life expectancy and, consequently, better health outcomes. Both social performance and economic growth are affected by external shocks, and austerity measures impacting social conditions could detract from economic growth. The research found a unidirectional causality from governance to economic growth, indicating that income levels may statistically influence the ESG–growth relationship.

Our findings corroborate the idea that a country's income level impacts the ESG–growth dynamic. In Southeast European countries within the EU, where GDP levels are higher, the Social (S) component of ESG appears to significantly affect GDP growth. This is in connection with Leogrande and Costantiello's [10] results which show a positive correlation between GDP growth and the "S" factors in the ESG framework. Additionally, there is a detectable relationship between ESG performance and GDP growth, it is nuanced and shaped by various influencing factors [9].

The study currently faces data limitations, which restrict its scope. Overcoming these challenges will require consistent data collection efforts, ensuring that ESG-related variables are reported uniformly. The small, open economies of the Western Balkans need to secure sustainable financing for green projects through bank loans, international green funds, and the issuance of green financial instruments. The global trend of increasing green and climate bond issuance reflects investors' growing preference for ESG-aligned investments.

There are strong incentives for these countries to support the transition from coal to renewable energy. Many still operate coal-fired power plants, and while financial backing for renewable energy has risen significantly, more steps are needed to create energy-efficient environments. Cross-border cooperation and the exchange of knowledge in developing new modeling methods and applying ESG principles are critical for further progress. In particular, sharing expertise and developing comprehensive guidelines for climate scenario analysis would significantly bolster capacity-building initiatives.

Ongoing research, which is regularly refined and updated, is essential for tracking ESG risks and informing future policy decisions. The model indicates that future studies should incorporate additional variables and conduct more thorough analyses of how different ESG factors influence various macroeconomic outcomes.

5. Conclusions

The paper of how ESG performance affects GDP growth is still quite limited. Globally, nations face the challenge of recognizing and adjusting to the increasing importance of integrating ESG strategies into their economic frameworks, especially in the face of geopolitical and economic uncertainties. Starting from these points, an analysis of the impact of individual ESG factors on economic development was made on the data of Western Balkan countries and other countries from Southeast Europe for the period from 2013 to 2022. According to the study's findings, each of the independent variables had no significant impact on the GDP's annual growth of the Western Balkan countries, but two of the variables, life expectancy at birth and labor force participation, are certainly correlated with the GDP growth of Southeast Europe countries, which are members of the European Union. Since the EU is putting efforts into the promotion of ESG principles at the company level, through different mechanisms, the results are also taking effect on national level.

Finance is acknowledged as a powerful force that may effect change. Global climate change offers serious environmental, social, and economic hazards for humanity. When making financial and investment decisions and implementing sustainable environmental initiatives, sustainable finance and investments, using ESG standards, are becoming increasingly important. However, the coming years will be crucial in this regard, as an increasing number of companies and economic stakeholders aim to align with ESG guidelines. The true impact of ESG on organizations will become more noticeable and measurable in the near future. Achieving strong ESG certification can yield economic advantages and position a company as a leader in its field. Consider how the implementation of ESG practices, such as improving energy management or adopting more responsible financial strategies, can enhance a company's operational efficiency. The Corporate Sustainability Reporting Directive (CSRD), which took effect in 2024, mandates that companies disclose both their financial performance and sustainability efforts. While not all companies are currently subject to this requirement, the reports generated offer valuable insights into the connection between corporate financial health and sustainability. Sustainability demands awareness, responsibility, and consistency—principles that also

apply to financial management. Acting irresponsibly or recklessly in financial decisions can place a company at significant risk. By ensuring ESG compliance, businesses can become more competitive and trustworthy, fostering stronger relationships within their industries. As more companies adopt sustainable practices, entire sectors can gradually transition toward greener operations. Ultimately, the overarching goal is to create a sustainable, clean, and valuable environment for everyone—not only for today but for future generations as well. By contributing to a healthier environment, companies can also enhance overall well-being and quality of life, as people tend to feel better and live more harmoniously when surrounded by cleaner, more beautiful surroundings. Future studies should investigate the relationship between ESG factors and other measures of national financial well-being, such as the genuine progress indicator (GPI) and the Index of Sustainable Economic Welfare (ISEW).

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