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Implementation of Sustainable Development Goals in European and Western Balkans Countries

Velibor Jovanović Gavrilović[1]

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Abstract: *Sustainable development is one of the key topics in contemporary discussions on development. Over time, the concept has evolved from a vague vision of development centered on environmental issues to a comprehensive development paradigm that includes economic, social and environmental aspects. The Sustainable Development Goals (SDGs) of the UN, which are the focus of this paper, reflect that broader, modern approach to sustainable development. The paper aims to measure the progress of the countries of the EU and the Western Balkans in terms of achieving SDGs. For this purpose, the composite SDG Index, developed by the Bertelsmann Stiftung and the Sustainable Development Solutions Network, was used. This index is decomposed into three pillars - economic, social and environmental, in order to monitor and analyze the achieved results more easily. Conducted research reveals the weak points in the implementation of SDGs and indicates the priority directions of action.*

1. INTRODUCTION

The world has been facing serious economic, social and environmental challenges for a long time. In response to those challenges, the concept of sustainable development was defined, which represents a universal development paradigm applicable to all countries, regardless of their level of development. The idea of sustainable development has evolved. In the beginning, the emphasis was placed on the problems of the natural environment (excessive exploitation of natural resources and environmental pollution), then the focus was shifted to social issues (poverty, inequality), and finally, a comprehensive approach to sustainable development was affirmed, which advocates the simultaneous realization of economic, social and environmental goals (Hajian & Kashani, 2021). The win-win-win approach, in which all three dimensions of sustainable development are combined, and possible conflicts are reduced to a minimum, enjoys wide support today.

Sustainable development is a development that lasts, rests on sound economic foundations, and is socially just and environmentally suitable. Sustainability in the context of sustainable development does not mean commitment to the *status quo*, but preservation of development opportunities. Sustainable development is not development in the present at the expense of the future, but development that implies responsible behavior towards both current and future generations. A country that wants to follow the path of sustainable development must minimize activities whose costs fall on the burden of future generations.

A comprehensive approach to sustainable development, which also respects the interests of both current and future generations, has its roots in the famous World Commission on Environment and Development – WCED (1987) report. In it, sustainable development is defined as "development

[1] Center for the Development of Economic Science, Bulevar oslobođenja 108, 11000 Belgrade, Serbia

that meets the needs of the present without compromising the ability of future generations to meet their own needs" (p. 43).

The holistic understanding of sustainable development, which includes the economic, social and environmental dimensions, was also expressed in the 2030 Agenda for Sustainable Development, adopted in September 2015 by 193 countries of the world (United Nations, 2015). The aforementioned agenda includes a set of 17 universally applicable, integrated Sustainable Development Goals (SDGs) which are focused on improving the current situation in areas that are of key importance for humanity and the planet by 2030.

Defining SDGs certainly contributes to the affirmation of the idea of sustainable development in the global framework. These goals represent a roadmap for determining development agendas and national policies of individual countries, as well as for their international cooperation.

Monitoring progress in achieving SDGs is given considerable attention in the economic literature by both statisticians and researchers. National statistical institutes are mostly occupied with the development of comprehensive sets of indicators for monitoring the implementation of SDGs, while researchers from the academic sphere and non-governmental organizations are primarily focused on creating composite indices for measuring progress in achieving sustainable development (Hametner & Kostetckaia, 2020). When it comes to statistical institutes, we should mention that Eurostat has developed an official set of indicators for monitoring progress in the implementation of SDGs in EU countries (Eurostat, 2017). The selection of indicators is updated every year. The EU SDG indicator set serves as a basis for creating Eurostat's annual monitoring report on progress towards the SDGs in an EU context. The latest 2023 Report is based on a set of 100 indicators selected for their statistical quality and policy relevance (Eurostat, 2023). Although the list of specific indicators is useful when looking at the progress of SDG implementation, the abundance of indicators makes it difficult to compare them across countries, as well as to assess trends at the national level. Composite indices, which combine individual indicators into one number comparable across countries, are simpler and easier to interpret. Among the more recent studies that rely on composite indices to compare the performance of European and other countries in terms of achieving SDGs, we will mention: Campagnolo et al. (2018) who use the FEEM sustainability index to assess the future dynamics of indicators of sustainable development under different scenarios, Miola and Schiltz (2019), who compare the results of applying three methods of measuring SDGs performance marked as «simple mean», «distance measure» and «progress measure», Hametner and Kostetckaia (2020), who proposed an absolute measure of the progress of countries towards the SDGs, OECD (2022), which constructed a composite index based on the UN global SDGs indicators.

This paper aims to review the progress of the countries of the European Union and the Western Balkans in terms of achieving SDGs. For this purpose, the composite SDG Index, developed by the Bertelsmann Stiftung and the Sustainable Development Solutions Network (SDSN) (Sachs et al., 2023), is used, which is among the most prominent composite indices for measuring the performance of national economies in achieving the SDGs (Hametner & Kostetckaia, 2020). For the mentioned index, data are available from 2016, when the implementation of the COR began. We will decompose the SDG index into three pillars - economic, social and environmental to more easily monitor and analyze the achieved results.

The main research questions we will try to answer are:

- **Research question One:** What regional differences exist among EU members when it comes to achieving SDGs and what is the position of the countries of the Western Balkans?
- **Research question Two:** In which dimension is the delay in the implementation of the SDGs most pronounced and are there differences between the EU and the countries of the Western Balkans?
- **Research question Three:** Has there been a convergence in the performance of European subregions in terms of achieving SDGs in total and by individual clusters of goals?

The paper is structured in five sections. Part 2 is devoted to the methodology used in this research. In Part 3, the obtained results are presented and discussed. Section 4 indicates directions for future research. Section 5 summarizes the conclusions reached in the paper.

2. METHODOLOGY

The 2023 SGD Index, which is the starting point in this research, includes 97 global indicators selected in consultation with experts and grouped into 17 goals (Sachs et al., 2023). The aggregation of indicators into goals is justified from a conceptual aspect and corresponds to the need to monitor progress by goals (Papadimitriou et al., 2019). Reliable and publicly available data published by international organizations (such as the World Bank, WHO, and ILO), as well as research centers and non-governmental organizations were used to increase the availability of data.

The procedure for calculating the SDG Index includes three steps. First, the lower and upper limits for each indicator are determined. Explicit/implicit SDGs targets (e.g. zero poverty), science-based targets (e.g. zero CO_2 emissions no later than 2050), or the average of the five countries with the best performance are taken as the upper limit. The lower limit is set at the 2.5^{th} percentile of distribution by indicators, in order to eliminate the influence of extreme values that can distort the results of the composite index. The distribution of each indicator is censored so that all values that exceed the upper limit have a score of 100, and values below the lower limit have a score of 0. Then, each variable is normalized on a scale from 0 to 100 using the mini-max method, where 0 indicates the worst, and 100 optimal performance, in order to ensure comparability of data across indicators. The SDG Index score expresses the country's achievements on the SDGs in percentages. The difference between 100 and the SDG Index score of a given country is the distance, expressed in percentage points, that needs to be overcome in order to reach optimal performance in achieving SDGs. Finally, the scores for each goal are determined as the arithmetic mean of the indicators for that goal and the average scores for all 17 goals are calculated in the same way (Lafortune et al., 2022). Applying the arithmetic mean indicates equal weights for the respective components. At the level of goals, this is justified by the fact that all goals have equal importance as part of the 2030 Agenda. At the level of indicators, equal weights have been kept because the alternatives are considered less satisfactory, although due to the unequal number of indicators within the different objectives they effectively have different weights ("implicit weighting") (Papadimitriou et al., 2019).

Based on Van Norren (2017), SDGs clustering was carried out in three categories - economic, social and environmental, each of which contains 5 objectives. The remaining two goals have a specific status because they can be considered as factors that enable the realization of other goals, rather than goals *per se*. Accordingly, Goal 17, which relates to a global partnership for sustainable development, is presented in Figure 1 as the framework within which development

takes place, while Goal 16, which concerns peace, access to justice and effective institutions, forms the core of the circle of goals.

By clustering the goals into categories, a clear connection between SDGs and the concept of sustainable development is established, and it facilitates their understanding and analysis. Nevertheless, it carries the danger of disintegration of sustainable development, which is fully covered through SDGs, with great efforts. Presenting SDGs within a circle, as it is done in Figure 1, at least visually, solves a potential problem, because, despite the clustering of goals, their connection is seen and a holistic approach to sustainable development is affirmed.

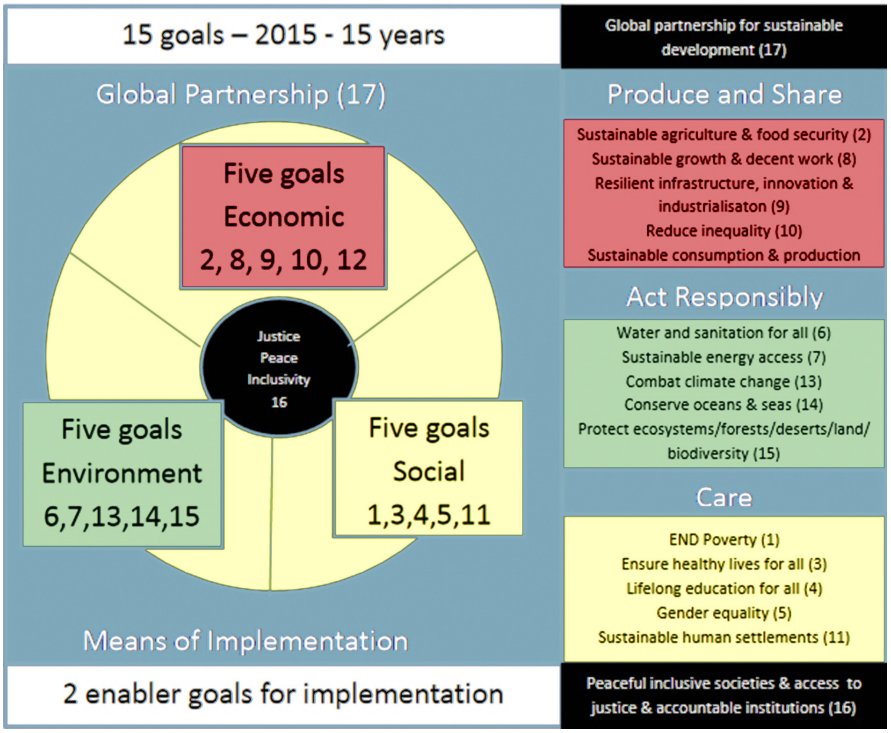

Figure 1. Clustering of SDGs
Source: Van Norren, 2017

3. RESULTS AND DISCUSSION

The empirical analysis covers 27 EU members and 5 countries of the Western Balkans, whose position is observed and evaluated in a global framework among 166 countries of the world for which relevant data are available. In general, European countries record the best results in the world according to the SDG index. All 20 countries at the top of the list are from Europe, most from the EU. The worst-placed country in the observed sample - Montenegro, ranks 67th in the world.

Among European countries from the EU and the Western Balkans, there are significant differences in SDG performance observed at the level of individual countries, subregions and groups of goals. The average SDG Index score (weighted by the number of inhabitants) for EU countries in 2022 is 81.1 (see Table 3), which is significantly above the world average in the same year of 66.7. The best results, as shown in Table 1, were recorded by Finland (86.8), followed by Sweden (86.0) and Denmark (85.7), and the worst by Cyprus (72.5), Bulgaria (74.6) and Malta (75.5). The gap in the level of the SDG Index in the world is indicated by the comparative data related to the three countries from the bottom of the list - South Sudan (38.7), the Central African

Republic (40.4), and Chad (45.3) (Sachs et al., 2023). Among the countries of the Western Balkans, Serbia has the best result according to the SDG Index, which is better placed than some EU countries (Lithuania, Malta, Bulgaria, Cyprus), and Montenegro has the worst.

Table 1. The 2022 SDG Index of EU and WB countries: rank and score

Rank	Country	Score					
		SDG Index	Economic Goals	Social Goals	Environmental Goals	Goal 16	Goal 17
1	Finland	86.8	80.5	95.1	85.8	92.5	75.6
2	Sweden	86.0	79.5	95.5	82.5	88.5	85.8
3	Denmark	85.7	79.7	94.8	81.7	93.8	82.1
4	Germany	83.4	79.7	92.3	76.6	89.5	84.4
5	Austria	82.3	79.5	93.4	77.3	87.9	71.1
6	France	82.0	79.7	94.2	75.2	76.1	73.1
8	Czechia	81.9	79.3	90.6	80.9	84.2	68.6
9	Poland	81.8	80.4	88.5	79.2	77.4	72.6
10	Estonia	81.7	74.1	90.6	81.4	91.0	67.3
12	Croatia	81.5	78.8	86.8	85.2	72.1	59.4
13	Slovenia	81.0	77.3	90.0	78.4	80.5	68.2
14	Latvia	80.7	71.4	89.3	86.3	82.1	54.4
16	Spain	80.4	76.9	93.8	74.3	79.2	63.0
17	Ireland	79.3	75.5	92.4	74.6	89.1	61.2
18	Portugal	80.0	75.9	92.6	74.2	80.9	65.9
19	Belgium	79.5	79.5	92.8	67.2	85.8	67.4
20	Netherlands	79.4	77.0	94.5	67.1	86.7	70.8
22	Hungary	79.4	80.8	86.3	81.2	69.1	54.1
23	Slovak Republic	79.1	79.4	85.3	79.7	77.8	59.0
24	Italy	78.8	77.3	86.9	76.0	72.9	65.2
28	Greece	78.4	74.3	87.5	78.3	71.1	60.8
33	Luxembourg	77.6	71.3	95.8	63.8	89.7	73.4
35	Romania	77.5	76.4	80.8	81.2	73.4	51.3
36	Serbia	77.3	78.0	82.8	73.9	65.9	83.5
37	Lithuania	76.8	66.8	88.6	76.9	84.8	59.5
41	Malta	75.5	74.0	88.6	70.4	64.9	54.1
44	Bulgaria	74.6	68.6	80.8	76.3	68.5	71.9
47	Bosnia and Herzegovina	74.0	69.4	72.5	79.5	66.2	84.7
54	Albania	73.5	67.8	81.1	75.7	60.7	65.6
59	Cyprus	72.5	68.1	86.2	67.9	74.7	46.9
60	North Macedonia	72.5	68.4	72.9	78.4	73.9	72.7
67	Montenegro	71.4	62.4	78.9	68.7	78.5	85.7

Source: Sustainable Development Report, 2023; own calculations

For the analysis of subregional differences, EU countries are classified into five groups, as presented in Table 2, which also includes the Western Balkans. Aggregate values for the observed European subregions are weighted by the number of inhabitants and presented in Table 3. The best performances are recorded by the countries of Northern Europe with an average SDG Index score of 86.1. Western Europe follows with 81.9, then Central and Eastern Europe for which the corresponding data is 80.0, then Southern Europe with a score of 79.4, and, finally, the Baltic countries with 79.1. The Western Balkans, as expected, has the worst performance and record an average SDG Index score of 75.0.

Table 2. Grouping of selected European countries into subregions

Baltic States	Central and Eastern Europe	Western Balkans	Northern Europe	Southern Europe	Western Europe
Estonia	Bulgaria	Albania	Denmark	Cyprus	Austria
Latvia	Czechia	Bosnia and Herzegovina	Finland	Greece	Belgium
Lithuania	Croatia	Montenegro	Sweden	Italy	France
	Hungary	North Macedonia		Malta	Germany
	Poland	Serbia		Portugal	Ireland
	Romania			Spain	Luxembourg
	Slovak Republic				Netherlands
	Slovenia				

Source: Adapted from Lafortune et al., 2022

Observed by groups of goals, the average score for economic objectives at the EU level in 2022 is 78.3 (see Table 3). According to the achieved results, as presented in Table 1, Hungary, Finland and Poland stand out, having gone more than 80% of the way to the desired result, while Lithuania, Cyprus and Bulgaria are the furthest from it (below 70%). Among the countries of the Western Balkans, Serbia is ranked best, followed by several EU members, and Montenegro is the worst.

Table 3. The 2022 SDG Index Score: EU and European subregions

	Score					
	SDG Index	Economic Goals	Social Goals	Environmental Goals	Goal 16	Goal 17
European Union	81.1	78.3	90.8	76.5	80.3	70.6
Baltic States	79.1	69.8	89.3	80.9	84.9	59.6
Central and Eastern Europe	80.0	78.5	86.0	80.0	75.7	64.6
Western Balkans	75.0	72.4	78.7	75.9	66.5	79.2
Northern Europe	86.1	79.8	95.2	83.1	90.9	82.2
Southern Europe	79.4	76.7	90.0	75.3	75.7	63.9
Western Europe	81.9	79.3	91.9	74.6	84.3	70.0

Source: Own calculations based on Sustainable Development Report, 2023

At the level of subregions (see Table 3), in terms of achieved economic goals, Northern Europe leads the way - 79.8, followed by Western Europe - 79.3, Central and Eastern Europe - 78.5, Southern Europe - 76.7 and the Baltic countries - 69.8. The Western Balkans recorded a score of 72.4 for the economic group of objectives, which puts it in a better position than the Baltic States in the year under review.

As for social goals, the average score for EU countries in 2022 is 90.8. Luxembourg, Sweden and Finland are ranked the best, having gone more than 95% of the way to the desired performance in the social domain. At the bottom of the list of EU countries are Bulgaria and Romania, whose score is slightly above 80. Among the countries of the Western Balkans, Serbia records the best results in the cluster of social goals, and Bosnia and Herzegovina the worst.

The order by subregions is somewhat different concerning economic goals, i.e. Northern Europe still leads with a score of 95.2, followed by Western Europe - 91.9, Southern Europe - 90.0, Baltic countries – 89.3, and Central and Eastern Europe - 86. The Western Balkans recorded a score of 78.7. It is evident that Central and Eastern Europe have a relatively worse position in terms of social than economic goals.

The average score for the cluster of environmental goals in the EU in 2022 is 76.5. The best results were achieved by Latvia, Finland and Croatia, which covered more than 85% of the way to the desired goal. At the bottom of the list is Luxembourg with a score of only 63.8. Of the countries of the Western Balkans, the best results in this domain are recorded by Bosnia and Herzegovina, and the worst by Montenegro.

Performance in terms of achieving environmental goals by subregion is as follows: Northern Europe - 83.1, Baltic countries - 80.9, Central and Eastern Europe - 80.0, Southern Europe - 75.3 and Western Europe - 74.6. The Western Balkans has a score of 75.9, which is above that achieved in Western Europe and Southern Europe.

As expected, the EU countries record better results in terms of achieving the SDGs overall and by individual groups of goals - economic, social and environmental, than the countries of the Western Balkans. Within the EU, an above-average SDG Index score is characteristic of Northern and Western Europe, while other subregions lag behind the average. Observed by groups of goals, the EU has the best performance in terms of social goals, and the worst in environmental goals. In the face of multiple crises, most high-income countries have been able to mitigate adverse socio-economic effects through the application of automatic stabilizers, as well as additional spending and recovery plans, but limited progress has been made in the domain of environmental goals. Luxembourg, the Netherlands and Belgium contributed the most to the relative lagging behind of Western Europe in terms of environmental goals, especially in the fight against climate change. In the case of Southern Europe, which also stands out for its relatively poor environmental score, below-average results are recorded by Cyprus, Malta, Portugal and Spain, and the lag is most evident in the preservation of oceans and seas. Crisis conditions indicated a limited fiscal space for interventions in less developed economies, which had a negative impact on related goals and indicators. The Western Balkans, like the EU countries, lead the way when it comes to the cluster of social goals but record the worst results in the group of economic goals, where all countries except Serbia were below the average in this subregion.

It is evident that Northern Europe occupies a leading position among European subregions, whether one looks at the overall SDG Index score or the scores for individual groups of goals. This can be related to the specific socio-economic model characteristic of these countries, the so-called Scandinavian welfare model, which has proven to be superior in achieving SDGs (Janković Šoja et al., 2016).

Goal 16 recognizes the vital role of peace, justice and strong institutions in achieving sustainable development. The weighted average for the mentioned goal in the EU area in 2022 is 80.3. The best performances in terms of the implementation of Goal 16, as shown in Table 1, are recorded by Denmark and Finland with a score of 93.8 and 92.5 respectively, and the worst by Malta, Bulgaria and Hungary whose scores are 64.9, 68.5 and 69.1 respectively. Among the countries of the Western Balkans, Montenegro (78.5) and North Macedonia (73.9) stand out for their good results, while Albania (60.7) is at the bottom.

At the subregional level, according to Table 3, the order of achievements in the realization of Goal 16 is as follows: Northern Europe - 90.9, Baltic countries - 84.9, Western Europe - 84.3, and Southern Europe and Central and Eastern Europe, which have the same score - 75.7. The Western Balkans, with a score of 66.5, lags behind the EU average, as well as each of its subregions.

Goal 17 underlines the need for global cooperation in achieving the set SDGs. The weighted average for the mentioned goal at the EU level in 2022 is 70.6. According to the achieved results in the observed group of countries, Sweden stands out, followed by Germany and Denmark, where all three countries have passed more than 80% of the way to the maximum value of 100. Cyprus has the worst performance, with a score of only 46.9.

The subregional distribution of scores for Objective 17 within the EU shows that the leading place is still occupied by Northern Europe - 82.2. It is followed by Western Europe - 70.0, Central and Eastern Europe - 64.6, Southern Europe - 63.9 and the Baltic countries 59.6. The Western Balkans recorded a score of 79.2, which ranks it second among European subregions. However, when comparing the performance of the countries of the Western Balkans and the EU, one should be careful, because some indicators, such as official development aid, refer only to developed economies. Also, among the countries of the Western Balkans, there are differences in the availability of data for certain indicators within Goal 17, which is reflected in the final result, so the possibilities of comparison within this subregion are limited.

By far the lowest score at the level of the EU and all subregions, excluding Northern Europe, was registered for Goal 17, which is very important for the achievement of all other goals, especially in the current turbulent times marked by geopolitical tensions and climate change, including the rise in energy and food prices that it particularly affects the most vulnerable countries and population groups.

The COVID-19 pandemic, the war in Ukraine and other crises have adversely affected the progress of SDGs implementation in Europe and the world. Even before 2020, global progress on SDGs was too slow to meet the goals set by 2030. The value of the SDG index for the world as a whole increased from 63.8 in 2015 to 66.0 in 2019, which is an increase of only 0.55 p.p. average per year. With the onset of the pandemic, progress almost stopped, and by 2022 it amounted to an average of 0.23 p.p. As for the EU, the value of the SDG Index increased from 79.2 in 2015 to 80.4 in 2019, i.e. by 0.3 p.p. average per year. By 2022, that growth further slowed down to 0.2 p.p. The results show that halfway to 2030, convergence has occurred on European soil, with subregions that started with a lower SDG Index score, such as the Baltic countries, Central and Eastern Europe and Southern Europe (within the EU), and The Western Balkans achieved faster growth. From 2015 to 2022, the score of Northern European countries, for example, increased by 0.10 p.p. average per year, and the Western Balkans by 0.44 p.p. However, the pace of convergence is slow. If the growth dynamics in the countries of the Western Balkans were to remain at the current level, these countries would need 25 years to reach the current SDG Index score of Northern Europe (Own calculations based on Sustainable Development Report, 2023).

Multiple crises have led to a slowdown in progress in the implementation of all three groups of goals at the EU level, with the deceleration being the most pronounced in environmental goals. Convergence at the level of European subregions was manifested only in the cluster of economic objectives, through a faster increase in performance in subregions with a lower initial score. Thus, for example, from 2015 to 2022, the score of the countries of Northern Europe in terms of economic goals increased by only 0.04 p.p. average per year, and in the Western Balkans by as much as 1.1 pp. In the case of social and environmental goals, there are no signs of convergence, that is, the *status quo* is more or less preserved, with the fact that in the countries of Central and Eastern Europe, a slight lag is noticeable in both groups of goals (Own calculations based on Sustainable Development Report, 2023).

The average weighted score for Objective 16 did not change at the EU level in the period from 2015 to 2022. As for Goal 17, the polycrisis acted to accelerate the growth of the corresponding score, which increased from 0.30 p.p. in the period 2015-2019. to 0.94 p.p. on average annually until 2022. At the subregional level, when it comes to Goal 16, there are slight tendencies of the Baltic and Southern European countries catching up with the leading European countries, while the Western Balkans, as well as Central and Eastern Europe, are lagging. In contrast, with Goal 17, the convergence process is visible, but slow to materialize. (Own calculations based on Sustainable Development Report, 2023).

4. FUTURE RESEARCH DIRECTIONS

The SDG Index, that we have analyzed in this paper, has the potential for further modifications and improvements. So, for example, instead of the arithmetic mean, when constructing this index, the geometric mean could be used as an alternative method of aggregation, which does not allow compensability between the variables, i.e. that a high score on one variable can completely neutralize low scores on other variables. Also, in parallel with the SDG Index, other composite indices can be used to measure performance in achieving the SDGs, especially those that monitor the absolute progress of individual countries over time (instead of their relative position in relation to the other countries included in the analysis), with a comparison of the obtained results. In addition, performance measurement in the implementation of the SDGs can serve as a starting point for creating policies aimed at achieving the desired goals and as an indicator of the effectiveness of earlier decisions.

5. CONCLUSION

Since the adoption of the SDGs, there has been a growing interest in measuring progress in their implementation, especially by constructing composite indices. Using the SDG Index, the paper analyzed the performance of the EU and its subregions, as well as the Western Balkans in terms of achieving the set goals. Starting from *research question one*, it was shown that among the European subregions in the implementation of the SDGs the countries of Northern Europe and Western Europe are leading with an above-average SDG Index score, while the other subregions lag behind the average. The worst position in the European environment is occupied by the Western Balkans with an average SDG Index score that is, however, significantly above the world average. It was also established that the lag in the implementation of SDGs at the EU level is most pronounced in environmental goals, and in the countries of the Western Balkans in economic goals, thus providing an answer to *research question two* posed in the paper. Regarding *research question three*, the analysis reveals that there has been a convergence in the performance of the European subregions in terms of achieving SDGs overall and in the cluster of economic objectives, but the pace of convergence is very slow. The fact that the lowest score at the level of the EU and all subregions (excluding Northern Europe) is recorded for Goal 17, which is very important for the achievement of all other goals, is worrying. Strengthening multilateral cooperation in the European, but also wider, world framework is necessary to shape a safer future and trace the path to dynamic and sustainable development.

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