

## ROMANIA'S PROGRESS IN IMPLEMENTING SUSTAINABLE DEVELOPMENT GOAL 8 OF THE 2030 AGENDA. A STATISTICAL ASSESSMENT

Ciprian IFTIMOAEI<sup>1</sup>, Ionuț-Cristian BACIU<sup>2</sup>,  
Robert-Vicențiu GABOR<sup>3</sup>

---

**Abstract:** Initially, sustainable development was regarded as a response to the ecological crisis caused by the intensive industrial exploitation of resources and ongoing environmental degradation, emphasizing preserving environmental quality. Over time, the concept has broadened to encompass the complex notion of quality of life, integrating social, cultural, political, and economic dimensions. At its core, sustainability recognizes the dependence of human activities on the environment and its resources. Key elements such as health, social security, and macroeconomic stability are vital for ensuring a high quality of life. The 2030 Agenda for Sustainable Development, titled *Transforming our World*, was adopted by the UN General Assembly on September 25, 2015, with the support of leaders from 193 countries. This framework updates the vision of sustainable development through 17 Sustainable Development Goals (SDGs) and 169 specific targets. Romania, as one of the signatories, has been implementing its National Sustainable Development Strategy (2018-2030) since 2018. This work adopts an exploratory perspective to examine the progress made in achieving SDG 8 – Decent Work and Economic Growth – on global, European, and national levels. To analyze Romania's progress toward SDG 8, we will employ descriptive statistical methods and principal components analysis. The data, spanning the years 2008-2023, are sourced from the National Institute of Statistics and Eurostat. The findings of this study aim to support the assessment and monitoring of Romania's achievements under SDG 8 and to inform strategies and public policies that promote decent work and economic growth.

**Keywords:** Agenda 2030, sustainable development, work, employment, unemployment, economic growth

**Résumé :** Initialement, le développement durable était considéré comme une réponse à la crise écologique causée par l'exploitation industrielle intensive des ressources et la

---

<sup>1</sup> Associate Professor PhD at the Faculty of Political and Administrative Sciences, “Petre Andrei” University of Iasi, Deputy-Director of the Iasi County Department of Statistics within National Institute of Statistics, Ciprian.Iftimoaei@iasi.insse.ro.

<sup>2</sup> Expert of the Iasi County Department of Statistics within National Institute of Statistics, Teaching Assistant PhD at the Faculty of Philosophy and Social-Political Sciences, “Al. I. Cuza” University of Iasi, Ionut.Baciu@iasi.insse.ro

<sup>3</sup> Teaching Assistant PhD at the Faculty of Geography and Geology, “Al. I. Cuza” University of Iasi, gaborvicentiu@gmail.com

dégradation continue de l'environnement, avec un accent particulier sur la préservation de la qualité environnementale. Au fil du temps, le concept s'est élargi pour inclure la notion complexe de qualité de vie, intégrant des dimensions sociales, culturelles, politiques et économiques. Au cœur de ce concept, la durabilité reconnaît la dépendance des activités humaines vis-à-vis de l'environnement et de ses ressources. Des éléments clés tels que la santé, la sécurité sociale et la stabilité macro-économique sont essentiels pour garantir une qualité de vie élevée. L'Agenda 2030 pour le Développement Durable, intitulé *Transformer notre monde*, a été adopté par l'Assemblée générale des Nations Unies le 25 septembre 2015, avec le soutien des dirigeants de 193 pays. Ce cadre actualise la vision du développement durable à travers 17 Objectifs de Développement Durable (ODD) et 169 cibles spécifiques. La Roumanie, en tant que signataire, met en œuvre depuis 2018 sa Stratégie nationale de développement durable (2018-2030). Ce travail adopte une approche exploratoire visant à examiner les progrès réalisés dans l'accomplissement de l'ODD 8 – Travail décent et croissance économique – aux niveaux mondial, européen et national. Pour analyser les progrès de la Roumanie vers l'atteinte de l'ODD 8, nous utiliserons des méthodes statistiques descriptives et une analyse en composantes principales. Les données, couvrant les années 2008-2023, proviennent de l'Institut national de la statistique et d'Eurostat. Les résultats de cette étude visent à soutenir l'évaluation et le suivi des progrès de la Roumanie dans le cadre de l'ODD 8 et à orienter les stratégies et politiques publiques visant à promouvoir un travail décent et une croissance économique.

**Mots clés :** Agenda 2030, développement durable, travail, emploi, chômage, croissance économique

**Rezumat:** Inițial, dezvoltarea durabilă a fost considerată o soluție la criza ecologică cauzată de exploatarea industrială intensivă a resurselor și de degradarea continuă a mediului, aducând în atenție necesitatea prezervării acestuia. În timp, conceptul de dezvoltare durabilă s-a extins, incluzând și noțiunea complexă de calitate a vieții, integrând dimensiuni sociale, culturale, politice și economice ale acesteia. În esență, dezvoltarea durabilă recunoaște impactul activităților umane asupra mediului înconjurător și resurselor acestuia. Elemente cheie precum sănătatea, securitatea socială și stabilitatea macroeconomică sunt esențiale pentru a asigura o calitate ridicată a vieții. Agenda 2030 pentru Dezvoltare Durabilă, intitulată *Transformarea lumii noastre*, a fost adoptată de Adunarea Generală a Națiunilor Unite pe 25 septembrie 2015, cu sprijinul liderilor din 193 de țări. Acest cadru actualizează viziunea asupra dezvoltării durabile prin 17 Obiective de Dezvoltare Durabilă (ODD) și 169 de ținte specifice. România, în calitate de semnatară, implementează din 2018 propria Strategie Națională pentru Dezvoltare Durabilă (2018-2030). Lucrarea de față propune o perspectivă exploratorie cu scopul de a evidenția progresul realizat în îndeplinirea ODD 8 – Muncă decentă și creștere economică – la nivel global, european și național. Pentru a analiza progresul României în atingerea ODD 8, vom folosi analiza statistică descriptivă și analiza componentelor principale. Datele, care acoperă perioada 2008-2023, provin de la Institutul Național de Statistică și Eurostat. Rezultatele acestui studiu au o contribuție la monitorizarea și evaluarea progreselor României în realizarea ODD 8 și la calibrarea strategiilor și politicilor publice care urmăresc ca obiective munca decentă și creșterea economică.

**Cuvinte cheie:** Agenda 2030, dezvoltare durabilă, muncă, ocupare, șomaj, creștere economică

## **1. Brief history of the 2030 Agenda for Sustainable Development**

The sustainable development paradigm implies a balanced approach to development based on economic growth, and social welfare, considering the need to protect the environment. Current interpretations of sustainable development raise issues of respect for human rights, poverty reduction in all its forms, population health, promotion of gender equality, social justice, inclusive policies, and international cooperation for the future of humanity and the planet (Iftimoaei & Gabor, 2021).

The adoption of the *2030 Agenda for Sustainable Development* was preceded by a series of international conferences and agreements that brought to the world's attention the consequences of human activity on the environment. The first such international conference, the Human Environment Conference, was organized by the United Nations in Stockholm in 1972. The proceedings of the conference were finalized with the adoption of a *Declaration* containing 26 principles for sound environmental management. These principles formed the basis for a political dialogue between policymaker from developing countries regarding the consequences of industrialization and economic growth on humans and natural environment. The preamble to the *Declaration* states that „The protection and improvement of the human environment is a major issue which affects the well-being of peoples and economic development throughout the world; it is the urgent desire of the peoples of the whole world and the duty of all Governments”.

*The Stockholm Conference* was followed by an *Action Plan for the Human Environment* focused on the development of decent settlement in the regions with population growth and the need to increase health services. Decent habitats mean providing fresh water for everyone, ensuring fertile soil for agriculture, providing energy resources taking into account the necessity of ensuring a sustainable balance between human activities and natural environment protection. One of the significant outcomes of the Stockholm Conference was the creation of the United Nations Environment Programme (United Nations, 2024).

The impact of industrialization on the environment was taken up again and deepened in 1987 when the United Nations set up the *World Commission on Environment and Development*, chaired by the Prime Minister of Norway, Gro Harlem Brundtland. The commission's work emphasizes that development is not just about economic growth and financial profit. What is important is that the results of economic activities benefit as many people as possible. Development does not mean the unrestricted exploitation of natural resources. However, it must also include concerns about protecting the human environment and measures to alleviate the negative consequences of economic activities. *The Brundtland Commission* is credited with offering the most widely recognized definition of sustainable development to date: „meeting the needs of the present without compromising the ability of future generations to meet their own needs.” (United Nations Brundtland Commission, 1987).

The conclusions of the Stockholm Conference were revisited and strengthened during the *United Nations Conference on Environment and Development*, commonly referred to as the „Earth Summit,” held in Rio de Janeiro in 1992. The Rio Conference Report emphasizes that human beings are central to sustainable development, which fundamentally entails promoting economic growth for social well-being while maintaining the Earth's ecological balance. The Rio Conference also adopted Agenda 21, which provides local governments/public administrations with a framework for drawing up their sustainable development strategies, programs and measures. Agenda 21's main strands are the fight against poverty and social exclusion, the production of sustainable goods and services and the protection of the natural environment (Iftimoaei, 2021).

An important step in the history of sustainable development is marked by the *Millennium Declaration* adopted by the United Nations in September 2000. This document outlines the following global priorities: alleviating poverty, fighting hunger, providing education for all children, fostering gender equality, lowering child mortality rates, ensuring maternal access to healthcare worldwide, preventing and addressing HIV/AIDS, tuberculosis, and malaria, and building partnerships to achieve the Millennium Development Goals. The *Millennium Declaration* also proposed a partnership based on solidarity whereby rich countries provided resources to fund sustainable development programs in poor and developing countries (United Nations, 2000).

A decade after the Rio Declaration, the *World Summit on Sustainable Development* (2002) adopted the *Johannesburg Plan of Implementation*. In September 2005, the World Summit in New York assessed progress in implementing the Millennium Declaration Goals. Subsequently, the Sustainable Development Goals Tracker, which replaced the Millennium Declaration Goals, was launched at the Rio+20 United Nations Conference on Sustainable Development in 2012 (United Nations, 2002).

Agenda 2030 for Sustainable Development was launched at the 70th session of the UN General Assembly on September 25, 2015, when 193 heads of state and government unanimously adopted this strategic document, which proposes to increase the resilience of communities and cities in the context of climate change and the social, demographic, economic and political transformations that mark the world in the 21st century. The year 2015 was full of events on sustainable development: the *Third UN World Conference on Disaster Risk Reduction*, which adopted the *Sendai Framework for Action for Disaster Risk Reduction 2015-2030*; the *Third International Conference on Financing for Development* followed by the adoption of the *Addis Ababa Action Agenda*; the 2015 *United Nations Climate Change Conference* which finalized the *Paris Climate Agreement* (United Nations, 2015).

Since January 1st, 2016, the Sustainable Development Goals of the 2030 Agenda have started to be implemented by the signatory countries, which have developed strategies and policies in line with the targets for each goal and indicators to measure progress. Since its adoption, the European Union has

established itself as a global leader in achieving the Sustainable Development Goals. As a member state of the UN and the EU, Romania has expressed its adherence to the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda and has endorsed the EU Council Conclusions, adopted on June 20, 2017, „A sustainable future for Europe: the EU response to the 2030 Agenda for Sustainable Development” (Departamentul de Dezvoltare Durabilă/ Sustainable Development Department, 2018).

Among the 17 Sustainable Development Goals of the 2030 Agenda is SDG 8 - Decent Work and Growth, which will be discussed in this paper. Essentially, SDG 8 aims to achieve economic growth through the creation of well-paid jobs, improved labour productivity, opportunities for employment, eradication of forced labour, eradication of in-work poverty, including for people in need, young people neither working nor learning, through education and training in line with a globalized labour market impacted by the development of digital technologies (Chigbu & Nekhwevha, 2023).

## **2. Literature review**

Achieving the SDG 8 of ensuring productive employment and decent work for all men and women by 2030 requires recognizing the intrinsic value and associated costs of social reproduction processes (Rai *et al*, 2019). According the authors, SDG 8 draws heavily from the ILO's Decent Work agenda, which is centred around four fundamental standards: freedom from forced labour, the eradication of child labour, freedom from workplace discrimination, and the right to form unions and engage in collective bargaining. These standards have emerged from long-standing negotiations among diverse stakeholders, including corporate entities, states, trade unions, NGOs, women's organizations, and new labour movements representing the informal sector.

Kreinin & Aigner (2021) analyse SDG 8 from a critical approach, considering it as phenomena, institutions, and ideologies, and concludes that it fails to meet strong sustainability criteria. The authors propose a new framework for SDG 8, titled „Sustainable Work and Economic Degrowth” aligning it with strong sustainability principles and the latest scientific research. Their research adopted an integrated systems approach to advancing the SDGs' overarching aim of securing a sustainable future for present and future generations. The contributions of this work include innovative indicators to assess societal dependence on economic growth and measures to guarantee welfare based on growth economic models.

In a comparative research dedicated to SDG 8, Lapinskaitė & Vidžiūnaitė (2020) assess the state of SDG 8 in G20 countries between 2013-2018. The study consists in a comparative literature review, qualitative data analysis, content analysis, comparison, and grouping. The TOPSIS method is utilized to rank G20 countries based on key SDG 8 indicators. The analysis reveals that Japan achieved the best progress in environment protection and notable economic growth during

the study period, followed by the United States and South Korea. Conversely, Argentina, Brazil, and South Africa ranked lowest among the G20 countries.

Carlsen, L. (2021) proposes a „partial ordering-based analysis” of key indicators related to SDG 8 compliance across the 27 European Union member countries. The analysis focuses on five main indicators: real GDP (GDP), the investment share of GDP by institutional sectors (INV), the percentage of young people neither in employment nor in education or training (NEET), the employment rate (EmpR), and the long-term unemployment rate (LtUR). The results provide clear insights into the general economic and employment conditions within the EU, as well as detailed comparisons of investment patterns and employment trends.

In exploratory research on the concept of SDG8 and its relevance to economic development in the EU, Skvarciany & Astike (2022) are using a Multiple Criteria Decision-Making (MCDM) approach. In the same research the CRITIC method was used to assign weights to criteria, identifying the most critical indicators. The COPRAS method was then applied to rank countries based on their progress toward SDG8. The CRITIC analysis highlighted the annual growth rate of real GDP per employed person as the most significant indicator among SDG8 targets. The COPRAS results identified Germany (100 points) and France (91 points) as the most advanced countries in implementing SDG8. Conversely, Latvia (59 points) and Finland (56 points) were the least advanced in achieving the goal. These findings provide insights into the varying levels of progress across EU member states regarding SDG8 implementation.

Bieszk-Stolorz, B., & Dmytrów, K. (2023) provided research regarding a statistical and geographical comparison of SDG 8 implementation within the European Union (EU) from 2002 to 2021, with particular attention to the impact of the COVID-19 pandemic. The study evaluates the progress of the 2030 Agenda for Sustainable Development objectives both collectively and individually. The analysis employs COPRAS, Dynamic Time Warping (DTW), and hierarchical clustering methods. This methodology allows the assessing of the SDG 8’ implementation, and identifying clusters of countries based on progress trends. Nordic countries demonstrate the highest levels of SDG8 implementation, while Greece, Spain, Italy, Romania, and Slovakia show the lowest levels. Some less-developed countries (e.g., Czechia, Poland, and Malta) showed significant improvement, whereas some well-developed nations (e.g., France, Luxembourg, and Portugal) experienced minimal or no improvement. The analysis shows that no clear geographical diversity was observed in the changes over time in SDG8 implementation. The overall conclusion is that the COVID-19 pandemic led to a decline in SDG8 implementation across the EU.

### **3. Global and European progress on the implementation of SDG 8**

The implementation of the targets associated with SDG 8 has been severely affected by the COVID-19 pandemic and its economic consequences. Even in a world without pandemics or other crises, achieving the SDGs would have been difficult. What is important is the progress in achieving the SDGs-associated targets for each country signatory to the 2030 Agenda. Despite all the negative consequences, the COVID-19 pandemic has been an opportunity to accelerate scientific and technical discoveries (Blanco *et al.*, 2022).

World economies have not yet fully recovered from the global health crisis, further amplified by military conflicts in some parts of the world. The war unleashed by Russia against Ukraine in March 2022 and the reactivation of the conflict in the Middle East following the terrorist attacks by Hamas against the population of Israel in September 2023, with regional and global reverberations, jeopardize the implementation of the 2030 Agenda's Sustainable Development Goals. Grain supply chains are crucial for achieving SDGs 1 and 2, which aim to reduce poverty in all its forms and combat hunger worldwide. Ukraine is a significant grain exporter to countries on the African continent. At one point, after the outbreak of Russian aggression, there was a UN fear of a global food crisis. Ukraine's exports from its Black Sea ports have decreased considerably since the beginning of the war. The Istanbul Agreement of July 2022 on the export of Ukrainian grain to the Black Sea was in operation for some time but was not extended by Russia when it expired. In the meantime, Ukraine benefits from other grain transportation routes, including through Romania.

*The Sustainable Development Goals Report 2023* states that global real GDP per capita growth will slow down. The precarious economic situation in many countries will lead to an increase in unemployment and informal work. Youth unemployment will continue to challenge public employment strategies and policies. At the same time, the pandemic has accelerated the development of the digital economy which provides well-paid jobs for those employees who have the digital skills to meet the growing demands of employers for an increasingly skilled workforce (Iftimoaei & Vevera, 2024).

In the year of adoption of Agenda 2030, globally, the incidence of informal work was 58.6%, and in the pre-pandemic year 2019, it was 57.8%. The health measures imposed by the management of the COVID-19 pandemic have reduced economic activity and, consequently, decreased employment concomitant with an increase in informal work. In 2022, global informal labour reached 58.0%. In absolute terms, this means there are about 2 billion informal jobs globally. People in informal work are socially and economically vulnerable because they do not benefit from social and health insurance contributions. According to *The Sustainable Development Goals Report 2023*, in 2022, globally, nearly 1 in 4 young people (23.5% or 289 million) were not in employment, education or training, compared to a 2015 baseline of 22.2%. The global unemployment rate fell significantly in 2022, dropping to 5.4% from 6.6% in 2020 as economies began to

recover from the pandemic crisis. This rate was lower than the pre-pandemic level of 5.5% in 2019. Estimated global unemployment in 2022 affected 192 million people. Global unemployment is projected to fall further to 5.3% in 2023, equivalent to 191 million people (United Nations, 2024).

Since adopting the 2030 Agenda, the European Union has taken a global leadership role in implementing sustainable development goals. To achieve this, it has integrated the values, principles, and objectives of the 2030 Agenda into European strategies and policies, created tools to monitor and assess progress voluntarily reported by member countries, and adopted discussion papers for a comprehensive, unified, and consensual approach to implementing the Sustainable Development Goals (European Commission, 2017).

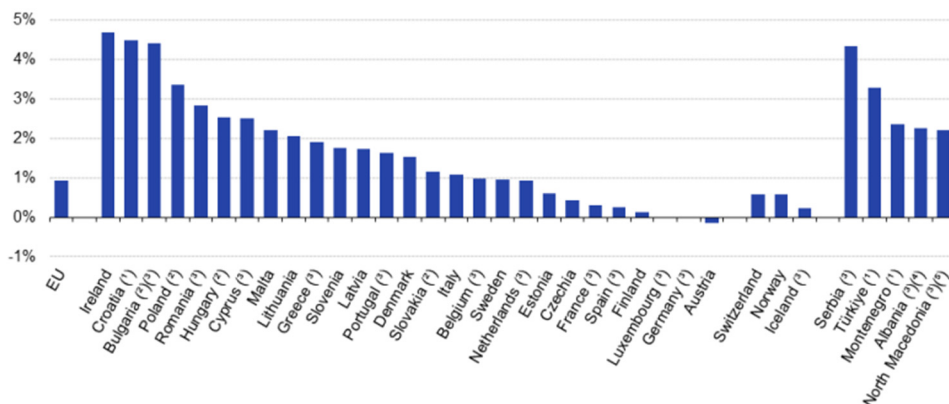
The European Consensus is grounded on poverty eradication as the overarching development goal, integrating concerns related to economic growth, environmental protection, peace and security, and humanitarian aid (European Commission, 2017). Of the 156 countries reporting progress on the SDGs, seven EU-27 member countries rank among the top 10 countries in the Global SDG Index, while all EU-27 member countries are among the top 50 countries (European Commission, 2019).

Economic growth is a goal shared by all EU-27 member countries. The standard of living of European citizens depends mainly on the performance of national economies. However, it is not automatically reflected in the indicators that describe economic growth: gross domestic product per capita and the actual growth rate of gross domestic product per capita. In other words, gross domestic product is not a measure of social welfare. Some European countries have enjoyed a sustained rate of growth in Gross Domestic Product but continue to experience high levels of poverty, including in-work poverty, resulting in a high degree of social polarization and persistent economic inequality (European Commission, 2024).

Figure 1 depicts the dynamics of real GDP per capita from 2018-2020. According to Eurostat, Romania ranks among the top EU-27 Member States with an average increase in real GDP per capita over the period. During all this time, the relative poverty rate in Romania has not fallen below 22%. Romania is developing economically without social welfare. Economic growth between 2018-2023 needs to be more inclusive.

Economic growth in the EU-27 Member States must go hand in hand with increased employment by providing equal opportunities for women and men and socio-professional integration of people with disabilities, migrants, and other groups of people from disadvantaged groups in the labour market. Decent work means creating equal and fair opportunities for all people and access to well-paid jobs, education, and training facilities in the context of an increasingly digitalized economy.





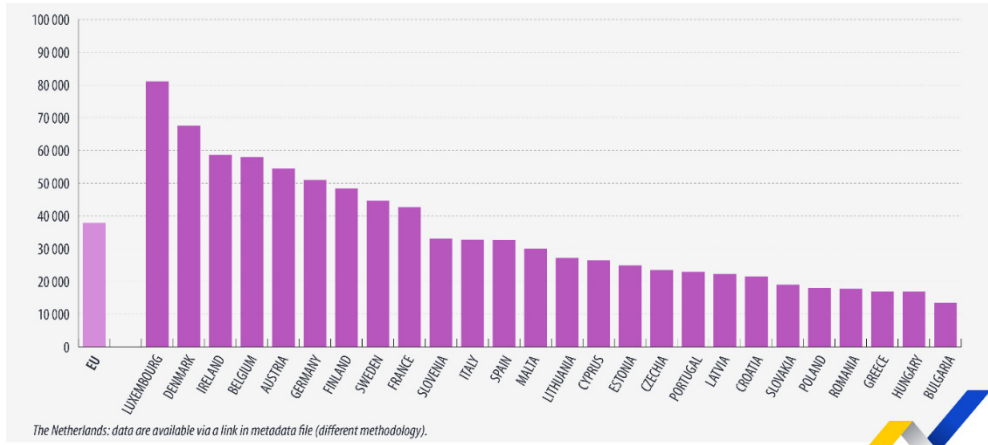
**Figure 1.** Change in real GDP per capita, by country, 2018-2023  
(average annual growth rate in %)

**Source:** Eurostat, <https://ec.europa.eu/eurostat>, 2024

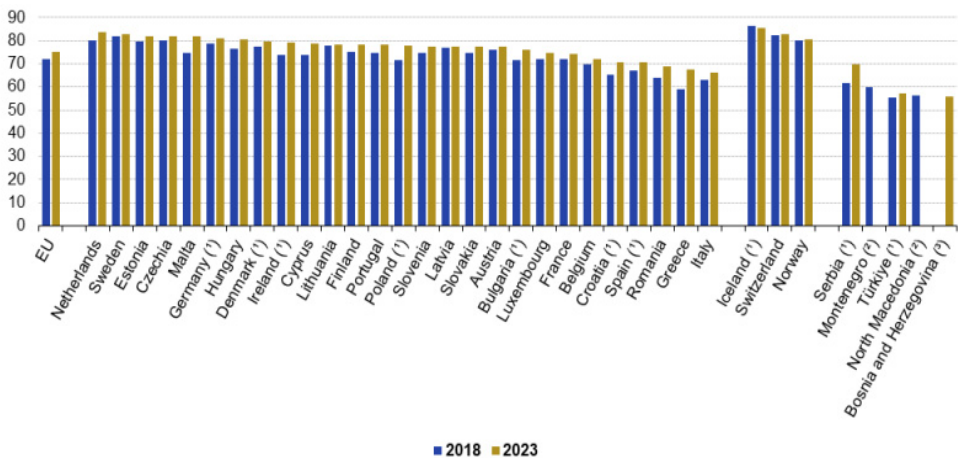
Eurostat (figure 2) shows that Romania has surpassed countries such as Bulgaria, Hungary, and Greece regarding wage level (adjusted average annual wage). In 2023, the adjusted average annual wage in Romania was 17,739 Euro 2023, exceeding the values in Hungary (16895 Euro) and Greece (17013 Euro) and approaching the wage level in Poland (18,054 Euro). However, in 2023, working poverty in Romania was 15%, the highest level in the EU-27, which means a high degree of economic inequality among working people. According to data from the Romanian Ministry of Labour at the request of EconoMedia, 1.5 million employees in Romania were paid a minimum wage of 3,000 lei and almost 349,000 more with a minimum wage of 4,000 lei. At the beginning of 2023, Romania had more than 5.6 million active employees, which means that more than a third of employees are paid the minimum wage (Reștea, 2023).

High employment rates contribute to developing an inclusive society, which reduces poverty and economic inequalities between social groups, local communities and regions in the EU-27 Member States. Figure 3 shows that all EU-27 Member States improved their employment performance in 2023 when the EU employment rate reached a record high of 75.3%, an increase of 3.4 percentage points compared to 2018 when it was 71.9%.

All European countries are experiencing difficulties engaging young and disadvantaged people in the labour market. According to Eurostat, the EU's NEET rate for 15-29-year-olds has improved since 2013 and reached 11.2% in 2023, the lowest on record. If this positive trend continues, the EU is expected to reach the NEET rate target of 9% by 2030.



**Figure 2.** Average annual full-time salary per employee (in Euro), 2023  
**Source:** Eurostat, <https://ec.europa.eu/eurostat>, 2024



**Figure 3.** Employment rate, by country, 2018 and 2023  
 (% of population aged 20 to 64)  
**Source:** Eurostat, <https://ec.europa.eu/eurostat>, 2024

In all European countries, women do not benefit from facilities for balancing work and domestic activities, including raising and educating children. People with disabilities who want to work face a lack of assistive technologies and reasonable accommodation in the workplace. Although many EU Member States complain about labour shortages, there is insufficient concern about attracting people into the labour market who are not working but are available to work and/or looking for work.

#### 4. Research methodology, data and results

The National Institute of Statistics has developed indicators to assess Romania's progress towards the Sustainable Development Goals. The collaboration between the Department for Sustainable Development and the National Institute of Statistics has materialized in the realization of a multi-disciplinary statistical data aggregator, which has the role of supporting the substantiation of public policies at the central and local levels, monitoring and evaluating the implementation of the *National Strategy for Sustainable Development of Romania* (România Durabilă/ Sustainable Romania, 2024).

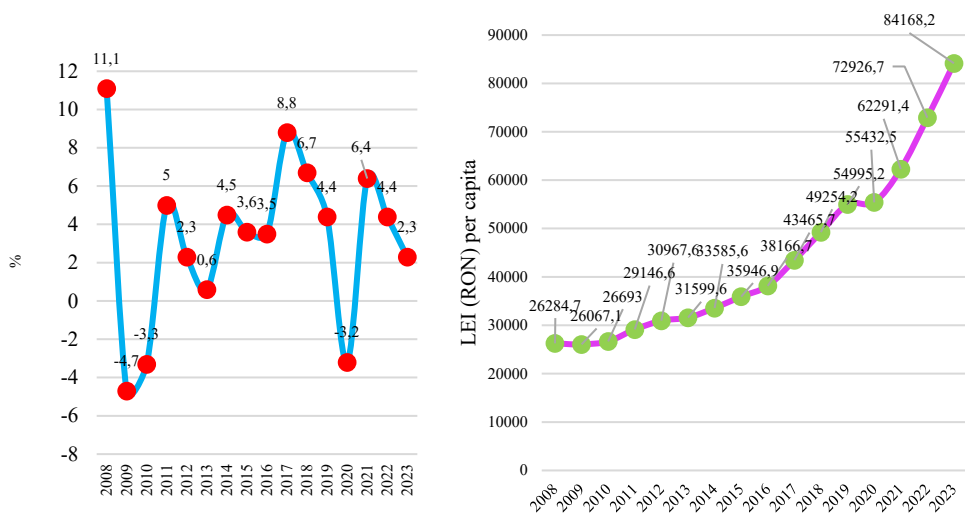
In this study, we used the following variables to analyze the implementation of Sustainable Development Goal 8 of the 2030 Agenda, which we extracted from the National Institute of Statistics-*TEMPO Online* platform:

- *Real Gross Domestic Product (GDP)* per capita is an indicator used to assess the level of economic development and the standard of living. A percentage increase in GDP indicates an improvement in the average standard of living of the population. This indicator is significant from an economic perspective, as GDP reflects the monetary value of final goods and services produced in a country over a given period.
- *Annual growth rate of real GDP per capita* expresses the growth rate of this product relative to the population and is calculated as the percentage change from the previous year.
- *Employment rate of tertiary-educated persons* represents the share of the employed population with tertiary education in the total number of persons with tertiary education.
- *Youth employment rate (age group 15-24)* indicates the proportion of the employed population in a given age group (x) to the total population in the same age group.
- *In-work poverty rate* reflects the disposable income per adult-equivalent below the poverty line, which is 60% of the median disposable income per adult-equivalent after social transfers. According to National Institute of Statistics, the total disposable income of a household is calculated by summing the income of all household members with the income generated by the household as a whole: all earned income (employees' wages and salaries and self-employment income), private income from investments and property, inter-household transfers; all social transfers received in cash, including old-age pensions.
- *Growth rate of labour productivity per person employed* highlights the effectiveness of the labour expended in the production process. This indicator is calculated by gross value added over the total number of persons employed. The employed population includes all persons engaged in productive activities, as defined by national accounts, and includes employees and own-account workers. The indicator is the growth rate of

labour productivity per person employed, expressed as a percentage change over the previous year.

- *Nominal average net monthly average nominal earnings on research and development activity in enterprises* are calculated by deducting compulsory social security contributions and related tax from the average gross monthly wage earnings. The result is divided by the average number of employees and months in a year.

These variables are included in the *European Union's Sustainable Development Goals (SDGs)* set of indicators. They are used to monitor the progress of SDG 8 - Decent work and economic growth. This goal is part of the European Commission's priorities embedded in initiatives such as the *European Green Deal* and *An Economy that Works for People*. The processed data is taken from the National Institute of Statistics – *TEMPO Online* and Eurostat for 2008-2023.

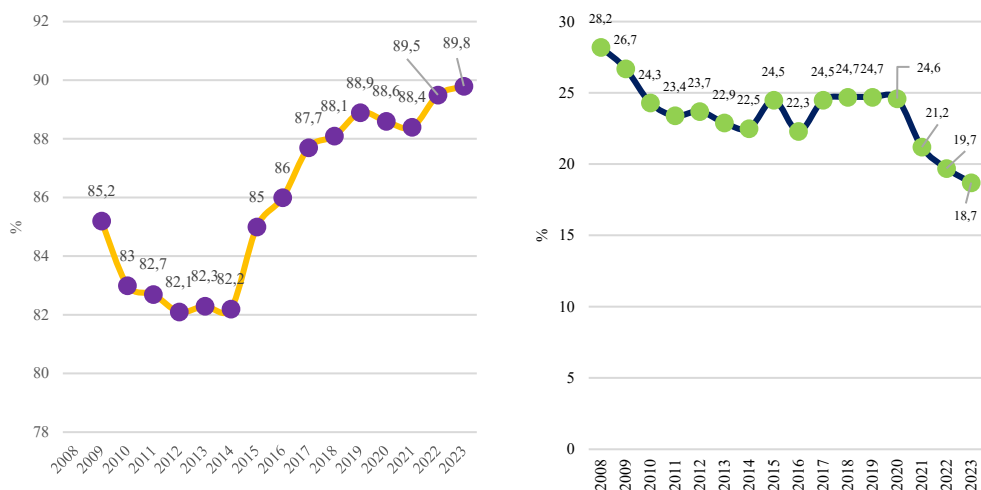


**Figure 4.** Annual growth rate of real GDP per capita (left) and the nominal value of GDP per capita over the period 2008-2023 (right) in Romania  
**Source:** own processing based on INS – TEMPO Online database

As can be seen in figure 4, the annual growth rate of real GDP per capita had a negative evolution in 2009, 2010 (consequences of the global economic crisis), and 2020 (due to the coronavirus pandemic), while in the other years it had a positive trend, with a maximum increase of 11.1% in 2008 compared to the previous year (due to the accession to the European Union). The nominal value of GDP per capita in Romania also shows a steady increase since 2011 (after the economic crisis). In 2023, the value of real GDP per capita is 84168.2 lei.

Employment is essential for ensuring an adequate standard of living while providing a stable framework for the realization of individual goals and aspirations. It also contributes to economic development, quality of life, and social inclusion.

Increasing employment by bringing into the labour market people who are difficult to employ (people with disabilities, marginalized, socially excluded) is essential for an inclusive society oriented towards the well-being of as many people as possible. Sustainable development also requires a change in approach from increasing employment to the quality of employment (decent working conditions and incomes above the poverty line).



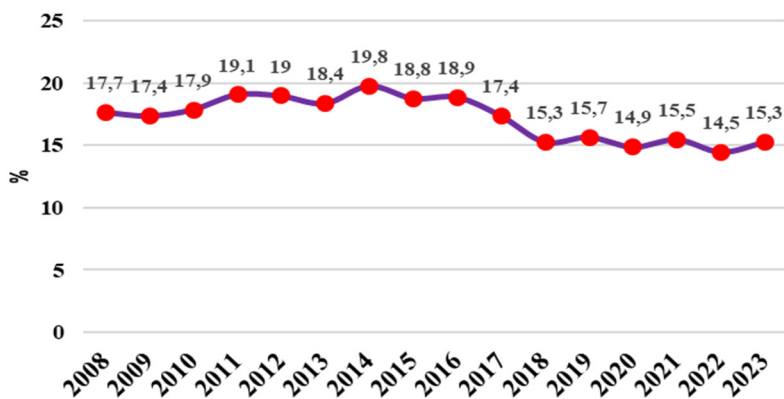
**Figure 5.** Employment rates of tertiary-educated (left) and of young people aged 15-24 in 2008-2023 (right) in Romania  
**Source:** own processing based on INS – TEMPO Online database

As for the employment rate of people with higher education in Romania (figure 5), we note that it has recorded values of over 85% since 2015, with an increasing trend every year. In 2023, the employment rate of people with higher education (89.8%) in Romania is above the European Union average (87.3%).

The employment rate of young people in Romania's 15-24 age group shows a downward trend from 2019 (from 24.7% to 18.7% in 2023). Romania is in second last place in the European Union, just above Greece. The differences between Romania and other EU Member States can be explained by factors such as limited access to suitable jobs for young people, insufficient alignment between the skills acquired in education and labour market requirements, and limited opportunities for apprenticeships or internships. In contrast, Northern and Western European countries, with the highest employment rates in this category, offer better-structured policies for integrating young people into the labour market.

The European Union's ambitious target is to reach an employment rate of 78% for 20-64-year-olds by 2030. To support this goal, the Action Plan proposes

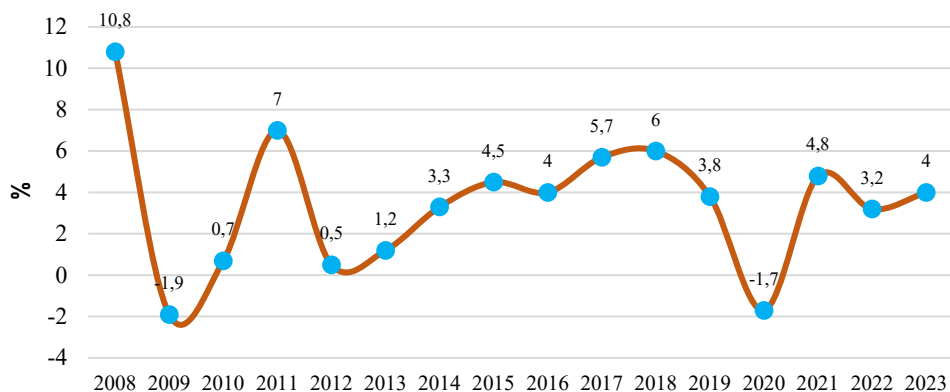
halving the employment gap compared to 2019 and reducing the rate of NEETs (those not in employment, education, or training) aged 15-29 to 9% by 2030. These measures underline the EU's commitment to a more inclusive labour market and increasing job opportunities.



**Figure 6.** In-work poverty rate in Romania, 2008-2023

**Source:** own processing based on INS – TEMPO Online database

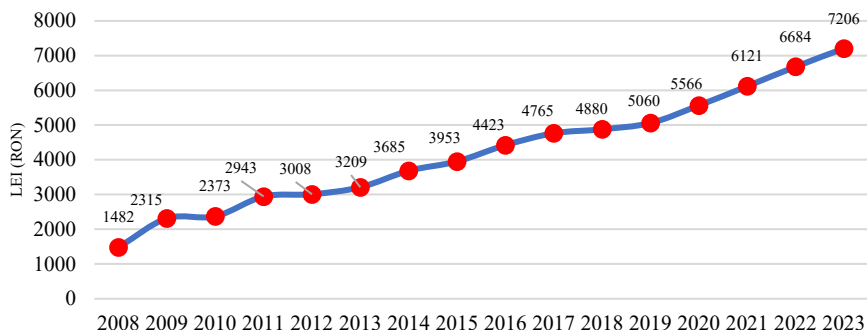
The in-work poverty rate (Figure 6) has been on a downward trend since 2016 in Romania. Thus, from 18.9% it reached 15.3% in 2023. However, compared to the EU average (8.12%), the gap is significant. Factors contributing to in-work poverty are the following: low wages; poor working conditions; high cost of living; lack of social protection; lack of adequate qualifications hindering access to well-paid jobs as well as regional inequalities (major disparities between regions). The impact of in-work poverty influences social instability, economic inequality, limits consumption and investment.



**Figure 7.** Growth rate of labour productivity per person employed in Romania 2008-2023

**Source:** own processing based on INS – TEMPO Online database

The growth rate of labour productivity per person employed in Romania (figure 7) had negative values in 2009 compared to 2008, and in 2020 compared to 2019, the reasons being the economic and health crises.



**Figure 8.** Average net monthly earnings in Research & Development activity in Romania for the period 2008-2023

**Source:** own processing based on INS – TEMPO Online database

The monthly average net wage in Research&Development activity in enterprises (figure 8) has had an upward trend in all these years, and in 2023 the value is 7206 lei.

To characterize the evolution of the implementation of Sustainable Development Goal 8 of Agenda 2030 at the level of the countries of the European Union, we used the Principal Component Analysis (PCA) method. This is a descriptive method of multidimensional data analysis and is applied in the study of the relationship between quantitative variables (Culic, 2004; Pintilescu, 2022). Euclidean distance is used to calculate the distance between two points. The following objectives are pursued:

- highlighting statistical links between the variables;
- emphasizing similarities/differences between the statistical units analysed according to all the variables recorded;
- justification of similarities/differences between units in terms of the variables.

The PCA highlights a system of factorial axes that concentrate the information contained in the initial table. In the first step, we apply standardization of variables. After data processing, we obtained the following results on the statistical variables: correlation matrix, calculated value of chi-square and KMO statistics, variance of the variables, eigenvalues and variance explained by each factorial axis, coordinates of the variables on the factorial axes, graphical representations. We obtained next results:

**Table 1.** KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.531
Bartlett's Test of Sphericity	Approx. Chi-Square	33.181
	df	10
	Sig.	.000

**Source:** own processing with SPSS

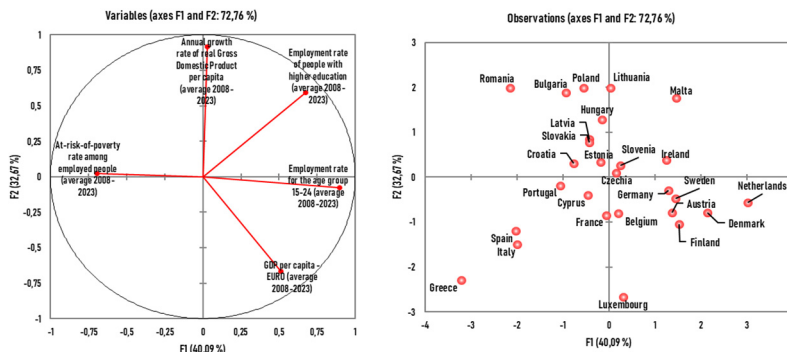
We obtain that the Correlational Matrix of the variables is significantly different from an Identity Matrix ( $\chi^2 = 33.181, p = .000$ ). With a 95% probability, there are statistically significant relationships between the variables analysed. In the same time, we obtain  $KMO = .531 > .500$  value that indicate a reliable factor analysis. The eigenvalues corresponding to the five factorial axes and the inertia explained by each axis are shown in Table 2.

**Table 2.** Values and inertia explained by factorial axes (Total Variance Explained)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.973	39.451	39.451	1.973	39.451	39.451
2	1.668	33.352	72.802	1.668	33.352	72.802
3	0.721	14.423	87.226			
4	0.394	7.873	95.099			
5	0.245	4.901	100			

**Source:** Principal Component Analysis – own processing with SPSS

The first two factor axes explain 72.8% of the total inertia. According to Benzecri's criterion, these two factorial axes are interpreted. The graphical representations allow us to visualize the position of the variables in the factorial axis system. Interpreting the obtained graphs makes it possible to identify the direction and intensity of the links between the variables.

**Figure 9.** Position of variables and statistical units on the first two factorial axes

**Source:** Principal Component Analysis – own processing with XLSTAT



The first horizontal factor axis indicates a positive correlation between the annual growth rate of real GDP per capita, the employment rate of tertiary-educated persons, the employment rate of 15-24-year-olds, real GDP per capita and a negative correlation between these and the working poverty rate. The second factorial axis shows a positive correlation between the annual growth rate of real GDP per capita, the in-work poverty rate, the employment rate of those with tertiary education and a negative correlation between these variables and the employment rate of young people aged 15-24 and real GDP per capita.

Suppose we refer to the statistical units (European Union countries). In that case, the first factorial axis highlights countries such as the Netherlands, Denmark, and Austria with a high average employment rate of young people aged 15-24 years, high average real GDP per capita for the period analysed, as well as the lowest values of the poverty rate of those in work. At the opposite pole is Greece, which has low average values for the variables analysed. Malta stands out with the highest value of the employment rate of people with tertiary education (87.7%).

The second factorial axis highlights Luxembourg with the highest average GDP per capita (€ 83632) in the European Union from 2008-2023. Romania, Poland, Lithuania and Bulgaria have the lowest values. In terms of the annual growth rate of real GDP per capita, these countries are characterized by higher average growth rates than more economically developed countries. This is explained by the fact that Romania, Poland, Lithuania, and Bulgaria are emerging economies, meaning they have a higher growth potential, as the level of economic development and real GDP per capita are still below the EU average.

## **5. Concluding remarks**

Of the 17 Sustainable Development Goals included in the 2030 Agenda, SDG 8 – *Decent Work and Economic Growth* - occupies a central place and is the subject of this study. SDG 8 aims to promote economic growth by creating well-paid jobs, increasing labour productivity, expanding employment opportunities for diverse groups, eliminating forced labour, and reducing in-work poverty. It also aims to support people in need, young people who are neither employed nor involved in education, through vocational training initiatives adapted to a globalized labour market influenced by digital transformations.

In order to monitor the progress made by Romania, we used some of the indicators of Sustainable Development Goal 8 of the 2030 Agenda: real GDP/capita; annual growth rate of real GDP/capita; employment rate of tertiary educated people; employment rate of young people (age group 15-24); working poverty rate; growth rate of labour productivity per person employed; average net monthly nominal average net wage growth per R&D activity in enterprises. The values of these indicators highlight the important progress made by Romania. However, significant challenges remain, such as reducing working poverty, increasing the participation of women and young people in the labour market and improving working conditions. Sustained strategies for education, digitization and sustainability are essential to achieve the targets set in the 2030 Agenda.

In this study, using principal component analysis, we have highlighted the statistical relationships between the variables analysed for 2008-2023. The first factorial axis shows a positive correlation between the annual growth rate of real GDP per capita, the employment rate of tertiary-educated persons, the employment rate of young people aged 15-24 years and real GDP per capita. There is also a negative correlation between these variables and the in-work poverty rate. The second factorial axis indicates a positive correlation between the annual growth rate of real GDP per capita, the in-work poverty rate and the employment rate of tertiary-educated persons. In contrast, the statistical link with the employment rate of young people (15-24 years old) and real GDP per capita is negative.

As far as the EU countries are concerned, the Netherlands, Denmark and Austria have the highest youth employment rates (15-24 years old), a high average real GDP per capita over the period and the lowest in-work poverty rates. Malta also stands out with the highest employment rate of people with tertiary education (87.7%). Luxembourg has the highest average GDP per capita in the European Union from 2008-2023 (€83,632), while Romania, Poland, Lithuania and Bulgaria have the lowest. However, regarding the annual growth rate of real GDP per capita, these countries have higher average values than more economically developed countries. This is explained by their status as emerging economies, which gives them a higher growth potential, given that their economic development and real GDP per capita are still below the EU average.

Our study has some research limitations in that not all indicators for monitoring and evaluating the targets associated with Sustainable Development Goal 8 of the 2030 Agenda were included. Therefore, this may affect the accuracy and applicability of the findings.

## References

1. Bieszk-Stolorz, B., & Dmytrów, K. (2023). Decent Work and Economic Growth in EU Countries—Static and Dynamic Analyses of Sustainable Development Goal 8. *Sustainability*, 15(18), 13327, 7. <https://doi.org/10.3390/su151813327>.
2. Carlsen, L. (2021). Decent work and economic growth in the European Union. A partial order analysis of Eurostat SDG 8 data. *Green Finance*, 3(4), 483-494. <https://doi.org/10.3934/GF.2021022>
3. Chigbu, B. I., & Nekhwevha, F. (2023). Exploring the concepts of decent work through the lens of SDG 8: addressing challenges and inadequacies. *Frontiers in Sociology*, 8, 1266141. <https://doi.org/10.3389/fsoc.2023.1266141>
4. Culic, I. (2004). *Metode avansate în cercetarea socială*. Editura Polirom.
5. Departamentul de Dezvoltare Durabilă/ Sustainable Development Department. (2018). *Strategia națională pentru dezvoltarea durabilă a României 2030*. <https://durabila.smart-ideas.ro/public/uploads/files/Romania-Sustainable-Development-Strategy-2030-en.pdf>, last accessed December 2024.
6. European Commission. (2024). *Sustainable Development Goals*. [https://international-partnerships.ec.europa.eu/policies/sustainable-development-goals\\_en](https://international-partnerships.ec.europa.eu/policies/sustainable-development-goals_en), last accessed December 2024
7. European Commission (2024). *EU approach to SDGs implementation*. [https://commission.europa.eu/strategy-and-policy/sustainable-development-goals/eu-approach-sdgs-implementation\\_en](https://commission.europa.eu/strategy-and-policy/sustainable-development-goals/eu-approach-sdgs-implementation_en), last accessed December 2024

8. European Commission. (2019). *Factsheet: Towards a Sustainable Europe by 2030*. [https://commission.europa.eu/document/a47339bc-124c-446b-b286-aa4dc0f6fc90\\_en](https://commission.europa.eu/document/a47339bc-124c-446b-b286-aa4dc0f6fc90_en), last accessed December 2024.
9. European Commission. (2017). *European Consensus on Development in 2017*. [https://international-partnerships.ec.europa.eu/policies/european-development-policy/european-consensus-development\\_en](https://international-partnerships.ec.europa.eu/policies/european-development-policy/european-consensus-development_en), last accessed December 2024
10. Eurostat. (2024). *SDG 8 - Decent work and economic growth*. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=SDG\\_8\\_-\\_Decent\\_work\\_and\\_economic\\_growth](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=SDG_8_-_Decent_work_and_economic_growth), last accessed December 2024
11. United Nations. (2024). *Paris Agreement on Climate Change*. <https://unfccc.int/process-and-meetings/the-paris-agreement>, last accessed December 2024.
12. Iftimoaei, C., Vevera, A.-V. (2024). Enabling digital education: from official statistics to public policy. *International Conference on Virtual Learning*, vol. 19, 247-262. <https://doi.org/10.58503/icvl-v19y202421>
13. Iftimoaei, C., & Gabor, V. R. (2021). Identity And Gender Equality In Romania A Quantitative Assessment From The Perspective Of The 2030 Agenda For Sustainable Development. *Scientific Annals of The „Alexandru Ioan Cuza” University, Iași. New Series Sociology and Social Work Section*, 14(2), 169-195. <https://doi.org/10.47743/asas-2021-2-666>
14. Iftimoaei, C. (2021). Social economy in the context of sustainable development. *Revista Economie Socială*, 1(1), 57-69. <https://alaturidevoi.ro/wp-content/uploads/2021/09/Revista-Economie-Sociala-nr.-1.pdf>
15. Institutul Național de Statistică/ National Institute of Statistics. (2024). TEMPO – Online. <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>, last accessed December 2024.
16. Kreinin, H., & Aigner, E. (2021). From „Decent work and economic growth to Sustainable work and economic degrowth: a new framework for SDG 8”. *Empirica*, 49(2), 281-311. <https://doi.org/10.1007/s10663-021-09526-5>
17. Martín- Blanco, C., Zamorano, M., Lizarraga, C., & Molina-Moreno, V. (2022). The Impact of COVID-19 on the Sustainable Development Goals: Achievements and Expectations. *International Journal of Environmental Research and Public Health*, 19(23), 16266. <http://dx.doi.org/10.3390/ijerph192316266>
18. Pintilescu, C. (2022). *Analiza statistică a datelor în SPSS și în R*. Editura Sedcom Libris.
19. Reștea, K. (2023). Câți români trăiesc cu salariul minim în România și care sunt domeniile în care se câștigă acestea, *Platforma EconoMedia* <https://economediamedia.ro/analiza-cati-romani-traiesc-cu-salariul-minim-in-romania-si-care-sunt-domeniile-in-care-se-castiga-acestea.html>, last accessed December 2024.
20. Lapinskaitė, I., & Vidžiūnaitė, S. (2020). Assessment of the sustainable economic development goal 8: decent work and economic growth in g20 countries. *Sciendo. Economics And Culture*, 17(1), 116-127 <https://doi.org/10.2478/jec-2020-0011>
21. United Nations. (2024). *The Sustainable Development Goals Report*. <https://unstats.un.org/sdgs/report/2024/The-Sustainable-Development-Goals-Report-2024.pdf>, last accessed December 2024
22. United Nations. (2015). *Sustainable Development Goals*. <https://www.un.org/sustainable-development/development-agenda>, last accessed December 2024

21. United Nations. (2000). World Summit on Sustainable Development, 26 August-4 September 2002, Johannesburg, <https://www.un.org/en/conferences/environment/johannesburg2002>, last accessed December 2024
22. United Nations. (1972). *United Nations Millennium Declaration*. <https://www.ohchr.org/en/instruments-mechanisms/instruments/united-nations-millennium-declaration>, last accessed December 2024.
23. United Nations. (1972). *United Nations Conference on the Human Environment*, 5-16 June 1972, Stockholm, <https://www.un.org/en/conferences/environment/stockholm1972>
24. Rai, S.M., Benjamin, Brown, B.D, Ruwanpura, K.N. (2019). SDG 8: Decent work and economic growth – A gendered analysis. *World Development*, Volume 113, 368-380. <https://doi.org/10.1016/j.worlddev.2018.09.006>
25. România Durabilă. (2024). *Agregator de date statistice în domeniul dezvoltării durabile*. <http://agregator.romania-durabila.gov.ro>, last accessed December 2024.
26. Skvarciany, V., & Astike, K. (2022). Decent work and economic growth: Case of EU. *12th International Scientific Conference Business and Management*, May 12–13, 2022, Vilnius, Lithuania. <https://doi.org/10.3846/bm.2022.916>