Corruption Perception, Investment and GDP Growth: A Comparative Econometric Analysis for Romania and Eu-27

~ *Ph.D. Student* **Ioan Bulz**(*Romanian Academy, School of Advanced Studies of the Romanian Academy, Doctoral School of Economic Sciences, National Institute for Economic Research "Costin C. Kiriţescu", Institute for Economic Forecasting)*
ORCID https://orcid.org/0009-0002-5995-6616

E-mail: ioan.bulz@ince.ro

Abstract: *The paper examines the dynamics of sustainable development in the European Union and Romania, through the lens of the relationship between governance quality, institutional performance and the vulnerabilities generated by economic criminality and corruption. The analytical framework is structured around three Sustainable Development Goals selected for their complementarity in capturing the transmission mechanisms through which corruption and economic criminality generate economic and social costs: SDG 16 (Peace, Justice and Strong Institutions), SDG 8 (Decent Work and Economic Growth) and SDG 3 (Good Health and Well-being). This selection is motivated by the fact that SDG 16 indicators directly reflect governance quality and the effectiveness of law enforcement mechanisms, SDG 8 indicators capture economic performance and labour market dynamics, while SDG 3 indicators illustrate the indirect effects of corruption on population welfare through pressures on public financing and the quality of essential services. The research purpose is threefold: comparative analysis of the evolution of indicators associated with the three selected SDGs for all 27 EU member states; identification of the economic and social costs generated by corruption and economic criminality by correlating institutional performance with socio-economic outcomes; and econometric modelling of the relationship between the corruption perception index and real GDP per capita, with gross fixed capital formation as a control variable, applied comparatively for Romania and the EU-27 aggregate. The study adopts a quantitative, descriptive, comparative, and longitudinal approach, based on secondary data from official institutional sources: the Eurostat database, the Corruption Perceptions Index by Transparency International, the National Institute of Statistics*

data and the European Court of Human Rights reports. The econometric modelling uses OLS regression with HAC correction, estimated in EViews, yielding an R-squared of 73.12% for Romania. The results reveal that reducing corruption has a standardised impact on GDP per capita dynamics (beta = 0.386) exceeding that of gross investment (beta = 0.351) in Romania, while for EU-27 the corruption impact is almost halved (beta = 0.199).

Key words: sustainable development, corruption, economic criminality, institutional governance, Corruption Perceptions Index, European convergence.

JEL: C22, D73, O43, O52.

Introduction

Social order, manifestations of criminality and the dynamics of armed conflicts represent interdependent dimensions of the contemporary international environment, reflecting persistent vulnerabilities of political and institutional systems. Recent developments indicate that stability and peace cannot be considered permanent outcomes but depend on the capacity of states and multilateral mechanisms to manage complex and interconnected risks.

The turning point was represented by the General Assembly of the United Nations, held in New York in September 2015, when 193 heads of state and government adopted the document entitled Transforming Our World: the 2030 Agenda for Sustainable Development. This document establishes the Sustainable Development Goals (SDGs), comprising 17 objectives and 169 targets, representing a concrete global action plan oriented towards real and current problems, such as the eradication of poverty, reduction of inequalities, and environmental protection, all aimed at ensuring sustainable development at the planetary level. The document starts from the premise that, although development currently plays an essential role in all dimensions of life, human activities carried out without a responsible approach can affect the balance capacity of the environment and generate major discrepancies. The implementation of rational public policies, based on clear principles and measurable objectives, is indispensable for maintaining stability and ensuring a good quality of life for both present and future generations.

Sustainable development was described in the Brundtland Report of 1987 as the type of development that meets the needs of the present without compromising the ability of future generations to meet their own needs, aiming to combine economic prosperity with social inclusion and environmental management, being a long-term objective of the EU in accordance with the Treaty on European Union, which committed to achieving the SDGs of the 2030 Agenda. The European Commission, together with Eurostat and other agencies and member states, developed indicators to track the progress made by EU countries in meeting the SDGs.

The Eurostat 2024 Report records that progress has been made in the implementation of the Sustainable Development Goals in the socio-economic domain, but these have not been correlated with action on climate and life on earth, which still represent challenges both locally and at the European level.

The OECD has on numerous occasions highlighted the importance of systematic and comprehensive indicators on which to base the analysis of economic inequalities, gross domestic product (GDP), household disposable income and household consumption, all of which are relevant in establishing the material well-being of citizens.

The broad global context demonstrates that lasting peace cannot be achieved in the absence of efficient institutions, respect for international law and the collective commitment of the international community.

1. Literature review

Economic criminality and corruption are linked to white-collar crime, which has been difficult to operationalise due to conceptual differences (Friedrichs, 2020). The concept of white-collar crime was introduced by Sutherland (1940) to designate illicit acts committed by persons of high socio-professional status in occupational or organisational contexts. Subsequently, the specialised literature nuanced this approach, shifting the emphasis from the profile of the perpetrator to the typology of acts and the institutional mechanisms that facilitate their commission (Jordanoska and Schoultz, 2020; Shapiro, 1990).

White-collar antisocial acts have been described as crimes involving a breach of trust, motivated by economic or professional gain, and not involving violence in its crude form. Institutional definitions tend to privilege operational criteria related to the nature of the acts, rather than the social status of the perpetrators. In this sense, approaches used in administrative and judicial practice emphasise the typology of economic crimes and their effects on the functioning of markets and public institutions.

In the EU, white-collar crimes are typically conceptualised as economic crimes committed in the context of commercial activity, such as fraud or embezzlement (Anderson, 2005).

Unlike conventional criminality, recent literature highlights the legal liability of organisational entities in economic crimes, extending the analysis from the individual level to corporate structures and internal governance mechanisms (Coffee Jr., 2021; Lund and Sarin, 2021).

The literature highlights that economic criminality and corruption can distort the allocation of public and private resources, with effects on living standards and access to public services. These distortions are amplified by structural differences in development between states, which complicates the definition of uniform welfare standards at the level of the European Union. Studies also highlight a tense relationship between the objective of economic growth and the imperatives of environmental protection, given that the intensive exploitation of natural resources can generate negative long-term effects.

Ensuring equitable living conditions, access to adequate education and medical services, and maintaining a healthy environment are fundamental elements for guaranteeing intergenerational welfare (Alexandrescu, Nica and Dumitru, 2011). At the same time, the intensification of debates about climate change has underlined their impact on national and regional economies, emphasising the need to integrate climate risks into development strategies.

A significant milestone in strengthening the sustainable development implementation framework was the third United Nations International Conference on Financing for Development, in which the 193 member states agreed on a set of strategic directions aimed at improving financial and institutional mechanisms. The areas covered include: mobilising domestic public resources, stimulating private investment at national and international level, strengthening international cooperation, promoting research, technology, and innovation, managing systemic

problems and leveraging international trade as a development vector (European Commission, 2023). In 2017, the European Fund for Sustainable Development (EFSD) was established, together with its guarantee mechanism, under the EU's External Investment Plan, with the role of mobilising capital and supporting investment initiatives in line with the Union's strategic objectives.

Territorial disparities occupy a central place in the literature on sustainable development. They represent a recurring theme in the analysis of sustainable development, being associated with persistent differences in productivity, infrastructure, and access to public services. Regional policy approaches aim to reduce these gaps through differentiated interventions, adapted to local economic and social contexts (Tofan, 2015; Zaman et al., 2013).

The complex and interdisciplinary nature of sustainable development requires the use of a comprehensive system of indicators, capable of capturing not only economic performance, but also the social, cultural, educational, health and environmental dimensions, as well as the geographical and regional specificities (Liu, Brown and Casazza, 2017). Such an approach enables integrated assessment of progress and the grounding of public policy decisions.

In conclusion, the economic literature reveals that promoting sustainable policies oriented towards productive investments and long-term growth contributes to reducing territorial disparities and consolidating economic and social cohesion (Atkinson and Bourguignon, 2001).

2. Data and methods

The research aims to analyse the relationship between institutional performance, socio-economic outcomes and the well-being dimension, through the indicators associated with Sustainable Development Goals SDG 16 (Peace, justice and strong institutions), SDG 8 (Decent work and economic growth) and SDG 3 (Health and well-being). The analysis is oriented towards highlighting how institutional vulnerabilities associated with corruption and economic criminality are reflected in economic performance and in the quality of social outcomes, as well as in the persistence of development differences between EU member states, with an emphasis on Romania's positioning relative to the European average.

The study is of a quantitative, descriptive, and comparative nature, built based on official statistical data series. The research design is longitudinal, as the evolution of indicators is analysed over relevant time intervals, between 2012 and 2025, depending on the availability of data for each indicator. This approach enables the capture of recent trends and structural differences between EU member states.

The data used are secondary data, from official institutional sources. The main source is the Eurostat database, which provides harmonised indicators for monitoring progress towards the SDGs, such as the perception of judicial independence, the proportion of the population reporting crime in the residential area, preventable and treatable mortality, real GDP per capita, the share of investment in GDP and the rate of employed persons at risk of poverty. These data are supplemented with information provided by the National Institute of Statistics for Romania and the Corruption Perceptions Index developed by Transparency International, used as a proxy indicator for governance quality and the level of perceived corruption in the public sector.

The research sample consists of 27 EU member states: Belgium, Bulgaria, Czechia, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, the Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland and Sweden, the selection enabling a comparative analysis between economies with different levels of development and heterogeneous institutional performance.

Data processing was carried out using Microsoft Excel and Power BI, used for organising data series, creating synoptic tables, and building graphical representations necessary for comparative analysis and capturing dynamics over time. The statistical analysis included descriptive statistics, comparison of levels between states and examination of trends, as well as the exploratory use of correlation analyses to identify associations between the indicators for SDG 16, SDG 8 and SDG 3 and GDP dynamics. These analyses were interpreted within a deductive reasoning framework, starting from the theoretical hypothesis that institutional dysfunctions and economic criminality negatively affect economic performance and social welfare.

In interpreting the results, a series of methodological limitations were taken into account. Some of the indicators used have a perception character, which implies greater sensitivity to the political and media context, and the analysis has a predominantly descriptive and associative character, without allowing the formulation of causal relationships. Also, differences in periodicity and methodology in data collection limit the possibility of building a unified econometric model for the entire sample and the entire analysed period.

3. The link between governance quality and sustainable development goals

SDG 16: Peace, Justice and Strong Institutions

SDG 16 highlights fundamental governance principles relevant to the design and implementation of all 17 Sustainable Development Goals. However, despite the apparently universal appeal of principles such as peace and justice, the negotiations on SDG 16 were intensely contested, revealing a complex geopolitical landscape, marked by competing international priorities (Slotin and Elgin-Cossart, 2013). Developing countries expressed concerns that the SDGs could be hijacked by the UN agenda on peace and security, perceived as prioritising securitisation and ignoring the links between peace and broader objectives such as social equity, climate change mitigation and development.

Political confrontations explain the sometimes-ambiguous messages embedded in the 12 targets of SDG 16. While some targets regarding inclusion and justice suggest a pluralistic and bottom-up approach to governance, many others are compatible with conceptions of a strong state, based on legal formalisation and legitimised by representative democracy. The 23 indicators of the objective reinforce this emphasis on the state and are supported by extensive requirements for quantitative and qualitative data collection. The impact also depends on the extent to which states internally assume their own commitments regarding good governance (Jula & Jula, 2000), or whether their efforts are concentrated mainly on collecting and reporting data for the 23 indicators, more narrowly defined.

Over the 10 years analysed, specifically the period 2015-2024, corruption perception in the European Union showed different evolutions depending on the region. Nordic countries, such as Denmark and Finland, maintained very high values of the CPI index, between 88% and 91%, reflecting a very low level of perceived corruption and constant institutional stability. This maintenance of high scores over time suggests that in these states, between 88% and 91% of public institutions are perceived as non-corrupt by citizens and experts (Table 1).

Table 1: Evolution of the Corruption Perceptions Index (CPI) in EU member states, 2015-2024

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Belgium	77	77	75	75	75	76	73	73	73	69
Bulgaria	41	41	43	42	43	44	42	43	45	43
Czechia	56	55	57	59	56	54	54	56	57	56
Denmark	91	90	88	88	87	88	88	90	90	90
Germany	81	81	81	80	80	80	80	79	78	75
Estonia	70	70	71	73	74	75	74	74	76	76
Ireland	75	73	74	73	74	72	74	77	77	77
Greece	46	44	48	45	48	50	49	52	49	49
Spain	58	58	57	58	62	62	61	60	60	56
France	70	69	70	72	69	69	71	72	71	67
Croatia	51	49	49	48	47	47	47	50	50	47
Italy	44	47	50	52	53	53	56	56	56	54
Cyprus	61	55	57	59	58	57	53	52	53	56
Latvia	56	57	58	58	56	57	59	59	60	59
Lithuania	59	59	59	59	60	60	61	62	61	63
Luxembourg	85	81	82	81	80	80	81	77	78	81
Hungary	51	48	45	46	44	44	43	42	42	41
Malta	60	55	56	54	54	53	54	51	51	46
Netherlands	84	83	82	82	82	82	82	80	79	78
Austria	76	75	75	76	77	76	74	71	71	67
Poland	63	62	60	60	58	56	56	55	54	53
Portugal	64	62	63	64	62	61	62	62	61	57
Romania	46	48	48	47	44	44	45	46	46	46
Slovenia	60	61	61	60	60	60	57	56	56	60
Slovakia	51	51	50	50	50	49	52	53	54	49
Finland	90	89	85	85	86	85	88	87	87	88
Sweden	89	88	84	85	85	85	85	83	82	80

Source: EUROSTAT, Corruption Perceptions Index, extracted on 01/02/2026, last updated 25/04/2025.

In Central and Eastern Europe, the situation was more fluctuating. In Hungary, the index value fell from 51% in 2015 to 41% in 2024, representing a reduction of almost 20% in the positive perception of institutional integrity. Bulgaria recorded values between 41% and 45%, indicating the perception of higher corruption compared to the European average. In contrast, the Baltic states recorded moderate increases: Estonia rose from 70% to 76%, and Lithuania from 59% to 63%, showing an improvement of approximately 7-8% in the perception of integrity of public institutions.

In southern Europe, Italy recorded an increase of approximately 23% in the index, from 44% in 2015 to 54% in 2024, indicating significant progress in combating perceived corruption. Greece recorded slight increases, reaching 49% in 2024, but its values remain below the European average of approximately 63%. In contrast, Malta and Austria recorded decreases of 14% and 9% respectively, signalling a deterioration in the perception of institutional integrity.

Romania had a relatively stable evolution, between 44% and 48%, indicating a long-term stagnation in reducing perceived corruption. Compared to the EU average (63%), Romania is approximately 15-20% below this level, highlighting persistent challenges in strengthening institutions and anti-corruption mechanisms.

SDG 3: Ensuring a healthy life and promoting well-being for all, at all ages

Inequalities in access to health care services and fundamental health determinants persist on a global scale. Women continue to face significant barriers in accessing general and reproductive health services, and a considerable number of people do not benefit from essential medicines, safe drinking water or adequate nutrition (Filho et al., 2019). These deficiencies highlight the multidimensional character of health and its interdependence with socio-economic and environmental factors. Although, since 2000, the impact of communicable diseases on global mortality has shown a downward trend, these were responsible for approximately 10.2 million deaths in 2019, representing 18% of total deaths worldwide (World Health Organization, 2021a). Particularly in low-income countries, HIV/AIDS, malaria, and tuberculosis continue to be among the main causes of mortality, indicating persistent structural vulnerabilities of health systems (World Health Organization, 2021b).

The adoption of the Sustainable Development Goals led to a conceptual expansion of the global health agenda. SDG 3, oriented towards ensuring a healthy life and promoting well-being for all age groups, goes beyond the narrower framework of the Millennium Development Goals by integrating non-communicable diseases and social determinants of health (Seidman, 2017). The implementation of this objective requires the strengthening of monitoring mechanisms, increased financing, and the stimulation of research and innovation, as well as developing the capacity of states to prevent and manage health risks (Papa et al., 2018).

In this context, reducing premature mortality by 40% by 2030, relative to 2010 levels, constitutes a central target of SDG 3 (Alleyne et al., 2013). The associated sub-objectives — significant reduction of maternal and infant mortality, reduction of deaths caused by HIV, tuberculosis and malaria, as well as the decrease of mortality associated with non-communicable diseases and other preventable causes — reflect the need for an integrated and multisectoral approach. These strategic directions highlight the fact that achieving global health objectives depends on coordinated interventions, supported by coherent public policies and effective implementation mechanisms.

Corruption and economic criminality constitute major obstacles to achieving SDG 3. Public funds allocated to health may be diverted or managed inefficiently, limiting investments

in medical infrastructure, medicines, and prevention programmes, directly affecting population access to essential services (Vian, 2008). Furthermore, fraud and corrupt public procurement affect service quality, leading to inadequate equipment, expired medicines, or substandard treatments, with a negative impact on patient safety and outcomes (Savedoff et al., 2012). Corruption also amplifies health inequalities, as financially resourced persons can access better services, while vulnerable groups remain unprotected, and prevention systems and responses to health crises become less effective (Transparency International, 2024; Kaufmann et al., 2010). In this context, corruption and economic criminality not only diminish the equity and quality of health services, but also undermine the central objective of SDG 3 to ensure well-being and health for the entire population.

SDG 8: Decent work and economic growth

The 2030 Agenda for Sustainable Development, adopted by the member states of the United Nations in 2015, enshrines through SDG 8 the importance of promoting decent work and sustainable economic growth, with the International Labour Organisation playing a central role in supporting and implementing these principles. Decent work, defined through the exercise of professional activity under conditions of freedom, equity, safety and respect for human dignity, constitutes both an essential factor of individual well-being and a structural determinant of sustainable economic growth, as access to adequately remunerated jobs stimulates consumption, investment and economic development at national and global levels (Jula et al., 1999). However, the pandemic period significantly disrupted progress towards these objectives, causing in 2020 a contraction of the world economy of approximately 3.5%, the most severe recession since the Great Economic Crisis, with losses estimated at 9.2 trillion USD by 2021 and major effects on trade, tourism and production at the international level.

Corruption and economic criminality are factors that undermine sustainable economic growth and access to decent jobs (Jula, Lula & Aivaz, 2026). High levels of corruption distort resource allocation and the efficiency of public institutions, generating an unpredictable and costly business environment that discourages investments in physical and human capital, essential for long-term economic growth (Mauro, 1995; Mo, 2001; Jula & Jula, 2013, Transparency International, 2024). In parallel, corruption affects the labour market, reducing participation in the formal sector and displacing the workforce towards informal activities characterised by precarious conditions and lack of decent work standards (Transparency International, 2024). Economic criminality, including fraud and corrupt public procurement, undermines trust in institutions and creates unfair competition, affecting investment and productivity, fundamental elements for sustainable economic growth (Transparency International, 2024). Overall, empirical evidence suggests that the effects of corruption and economic criminality on the quality of work and the rate of economic growth are predominantly negative, underlining the need for strong institutions and transparency in promoting SDG 8.

Between 2015 and 2024, real GDP per capita in the EU recorded consistent growth (Table 2), with large differences between states. Romania grew from 9,430 to 13,100 USD (+38.9%), Bulgaria from 8,130 to 11,330 USD (+39.3%), Poland from 11,870 to 16,470 USD (+38.7%), Hungary from 12,530 to 16,190 USD (+29.2%), Slovenia from 20,170 to 25,480 USD (+26.3%) and Lithuania from 14,630 to 19,690 USD (+34.6%).

Table 2: Evolution of real GDP per capita in the European Union, 2015-2024

YEAR	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Belgium	40310	40590	41030	41610	42400	40190	42530	43860	44230	44440
Bulgaria	8130	8490	8840	9170	9650	9440	10250	10740	10950	11330
Czechia	19270	19760	20760	21320	22050	20980	21830	21910	21680	21920
Denmark	50810	51950	53200	53920	54630	53540	56780	56530	56470	58160
Germany	41230	41880	42960	43390	43790	42020	43730	44230	43450	43110
Estonia	18650	19190	20270	20970	21650	20960	22670	22370	21210	21060
Ireland	60210	60220	65370	69390	71720	75820	87160	91760	87810	88600
Greece	16100	16160	16430	16810	17210	15660	17110	18160	18600	19020
Spain	24720	25420	26110	26620	26930	23850	25440	26820	27150	27800
France	35370	35540	36140	36570	37160	34280	36470	37320	37760	38110
Croatia	11760	12320	12910	13460	14020	12980	14750	15900	16490	17060
Italy	29210	29630	30160	30470	30680	28100	30760	32310	32640	32880
Cyprus	21140	22410	23500	24690	25790	24630	27030	28730	29200	29870
Latvia	13750	14230	14850	15610	15820	15370	16580	16890	16770	16910
Lithuania	14630	15200	16090	17030	17870	17890	19040	19350	19220	19690
Luxembourg	102530	104920	104020	103640	104310	102190	107570	104100	102250	101000
Hungary	12530	12880	13460	14240	14980	14370	15470	16160	16050	16190
Malta	25520	25960	28530	29510	29480	27870	31420	31400	33380	34730
Netherlands	45530	46380	47390	48180	48970	46810	49490	51480	50660	50880
Austria	43200	43550	44260	45140	45730	42650	44580	46430	45670	45140
Poland	11870	12240	12870	13680	14310	14310	15380	15840	15950	16470
Portugal	18920	19350	20020	20620	21150	19360	20390	21690	22130	22350
Romania	9430	9760	10620	11260	11760	11390	12130	12690	12970	13100
Slovenia	20170	20770	21830	22720	23330	22230	24040	24660	25120	25480
Slovakia	16000	16280	16730	17380	17760	17270	18320	18360	18750	19110
Finland	40700	41640	42910	43360	43910	42740	43800	44010	43280	43110
Sweden	45790	46220	46420	46700	47410	46180	48300	48390	47960	48270

Source: Generated from Eurostat data, indicator sdg_08_10 (Real GDP per capita), extracted on 07/02/2026.

Western and northern European countries have higher values, but percentage growth is more moderate: Germany 41,230 to 43,450 USD (+5.4%), France 35,370 to 38,110 USD (+7.8%), Italy 29,210 to 32,880 USD (+12.6%), Netherlands 45,530 to 50,880 USD (+11.8%), Denmark 50,810 to 58,160 USD (+14.5%) and Ireland 60,210 to 88,600 USD (+47.1%).

The COVID-19 pandemic generated temporary declines in 2020 in most states: Romania -3.1%, Germany -4.1%, France -7.8%, Italy -8.5%, but the rapid recovery in 2021-2024 accelerated subsequent growth. The persistent differences between Western Europe and Central and Eastern Europe reflect development gaps and underline the need for economic convergence policies.

Between 2015 and 2024, real GDP per capita in Romania grew constantly, from 9,430 USD in 2015 to 13,100 USD in 2024, representing a total growth of almost 39%. In the first years, up to 2019, the economy recorded sustained advances, reaching 11,760 USD (+24.7% compared to 2015). The year 2020 brought a slight decline to 11,390 USD (-3.1% compared to 2019), an effect of the COVID-19 pandemic's impact on economic activity.

The period 2021-2024 marks a rapid recovery, with successive increases: 12,130 USD (+6.5%), 12,690 (+4.6%), 12,970 (+2.2%) and 13,100 USD (+1.0%), showing a notable resilience of the Romanian economy. Despite this positive evolution, the absolute level remains significantly below that of Western European countries, indicating that development gaps persist. The data thus suggest that, to accelerate convergence with the EU average, Romania needs sustainable economic policies and strategic investments in infrastructure and productivity.

Between 2015 and 2024, the share of investment in GDP in EU member states showed diverse evolutions, but with a generally stable or slightly upward trend in most countries (Table 3). Romania maintained consistently high values, between 21.21% in 2018 and a maximum of 26.55% in 2023, frequently exceeding the EU average and ranking among the main contributors to investment relative to GDP.

Table 3: Investment share of GDP in EU member states, 2015-2024 (%)

YEAR	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Belgium	23.15	23.52	23.50	23.77	24.23	24.03	23.92	23.93	24.17	24.25
Bulgaria	20.86	18.41	18.30	18.79	18.68	18.98	16.27	17.00	:	:
Czechia	25.68	24.31	23.73	24.85	25.77	25.54	26.24	27.69	27.94	26.49
Denmark	19.80	20.98	21.23	21.76	21.35	22.18	23.21	23.09	23.53	23.33
Germany	19.75	20.04	20.13	20.82	21.15	21.34	21.18	21.60	21.19	20.46
Estonia	24.05	23.94	25.40	26.58	26.62	31.18	29.98	25.16	25.41	23.90
Ireland	24.28	34.11	32.48	27.90	53.21	41.39	22.08	21.14	24.89	17.35
Greece	11.16	11.37	12.05	11.33	10.97	12.30	13.79	15.72	15.88	16.04
Spain	18.30	18.19	18.91	19.67	20.31	20.62	20.20	20.49	20.47	20.29
France	20.56	20.92	21.42	21.88	22.42	22.44	23.48	23.49	22.83	22.10
Croatia	19.09	19.56	19.47	19.98	21.91	22.35	20.95	21.66	24.75	25.20
Italy	17.08	17.29	17.58	17.97	18.13	18.20	20.77	21.78	22.66	22.15
Cyprus	12.83	18.03	20.79	18.58	18.68	20.82	19.22	20.37	21.99	20.55
Latvia	22.31	20.17	21.53	22.90	22.72	23.03	22.93	23.29	24.02	22.41
Lithuania	19.60	19.92	20.14	20.69	21.20	21.43	22.47	22.44	23.82	22.41
Luxembourg	17.31	17.28	17.81	16.15	18.05	17.18	18.15	16.60	16.07	15.38
Hungary	22.29	19.61	22.32	24.88	27.12	26.45	27.26	27.54	25.37	23.06
Malta	23.66	21.32	18.70	19.11	20.08	19.94	22.33	24.94	19.10	18.47
Netherlands	21.81	19.29	19.76	19.95	20.91	21.27	20.69	20.47	20.35	19.85
Austria	22.90	23.32	23.85	24.31	25.08	25.13	25.86	25.21	24.69	23.55

Poland	20.24	18.35	17.47	18.76	19.15	18.40	16.93	16.44	17.90	17.04
Portugal	15.65	15.73	17.09	17.83	18.43	19.50	20.50	20.57	20.49	20.44
Romania	24.92	23.04	22.88	21.21	23.26	23.46	24.50	25.12	26.55	25.29
Slovenia	18.92	17.78	18.49	19.53	19.76	19.02	20.20	21.99	21.60	20.92
Slovakia	24.32	21.66	21.27	21.34	21.68	19.78	19.60	20.94	21.14	20.42
Finland	21.42	23.05	23.69	24.59	24.42	24.66	24.42	24.66	23.40	22.05
Sweden	23.24	23.87	24.58	24.61	23.84	24.53	25.12	25.59	25.41	25.11

Source: Eurostat, table sdg_08_11, Investment share of GDP by institutional sectors, data extracted on 09/02/2026.

In Central and Eastern Europe, countries such as Czechia (25.68% to 26.49%), Hungary (22.29% to 23.06%) and Slovakia (24.32% to 20.42%) recorded moderate increases or fluctuations, while Greece (11.16% to 16.04%) and Italy (17.08% to 22.15%) started from lower levels and gradually caught up. In the West and North, states such as Germany (19.75% to 20.46%), Austria (22.9% to 23.55%), Sweden (23.24% to 25.11%) and Finland (21.42% to 22.05%) maintained constant values, indicating a stability of the investment structure.

The year 2020 brought significant variations generated by the impact of the COVID-19 pandemic: Estonia recorded a temporary peak of 31.18%, while Slovakia and other states recorded declines. The general evolution shows that investment remained an essential driver for economic growth in the EU, and the Central and Eastern European countries, through their high values, contribute to reducing economic gaps relative to Western Europe.

Between 2015 and 2024, the share of investment in GDP in Romania was relatively high and recorded a generally upward trend. In 2015, investments represented 24.92% of GDP, declining slightly to 21.21% in 2018 (-14.9% compared to 2015), before recovering and growing consistently: 23.26% in 2019, 23.46% in 2020, 24.50% in 2021 and 25.12% in 2022. In 2023, Romania reached a maximum of 26.55%, followed by a slight correction in 2024 to 25.29%.

This evolution highlights a robust level of investment in the Romanian economy, frequently exceeding the EU average and suggesting a consolidation of medium-term economic growth. The increase during 2019-2023 (+14.2% compared to 2018) indicates a revitalisation of post-crisis investment and a significant potential for stimulating economic development.

4. Econometric modelling of the relationship between economic growth, investment, and the corruption perception index for Romania

The analysis of the relationship between governance quality and economic performance represents a central domain of contemporary institutional economics, especially in the context of sustainable development objectives assumed at the global level through Agenda 2030. Corruption, understood as the abusive use of public office for private purposes, generates distortions in resource allocation, affects the efficiency of investments and erodes trust in institutions, with direct implications for economic growth and the well-being of the population. In this framework, the corruption perception index (CPI) constitutes a relevant proxy for evaluating the quality of the

institutional environment, and the analysis of its impact on GDP per capita offers a quantitative perspective on the link between governance and economic development.

The integration of the econometric analysis of the link between economic growth and the perception of corruption within the logic of the Sustainable Development Goals (SDGs) has been attempted. Directly, SDG 16 — "Peace, justice and efficient institutions" — targets the reduction of corruption and the consolidation of public institutions. Indirectly, however, institutional quality influences the attainment of a broad spectrum of objectives, from SDG 8 ("Decent work and economic growth"), to SDG 9 ("Industry, innovation and infrastructure") or SDG 10 ("Reduction of inequalities"). In this sense, investigating the econometric relationship between corruption perception and GDP per capita can be seen as an evaluation of a mechanism by which institutional development can accelerate or impede economic growth.

From a theoretical perspective, the specialised literature highlights several channels through which corruption affects macroeconomic performance. First, corruption reduces allocative efficiency by distorting the competitive mechanism and favouring certain economic agents at the expense of others, not on productivity criteria, but on access to informal influence networks. Second, corruption affects capital formation by discouraging private investments, increasing transaction costs and amplifying uncertainty. Third, at the level of public finances, corruption can lead to directing expenditures towards projects with high rent-seeking and low added value, diminishing the multiplier impact of public investments.

In this context, using GDP per capita as the dependent variable reflects the option for a synthetic indicator of the level of economic development, internationally comparable and relevant for evaluating real convergence. GDP per capita captures the aggregate result of the processes of accumulation and utilisation of production factors, as well as of the institutional efficiency that mediates these processes. In relation to the SDGs, the evolution of GDP per inhabitant can be interpreted as an outcome indicator of economic progress, influenced by the institutional framework and by the capacity of the economic system to transform resources into added value.

The proposed econometric model investigates the impact of the corruption perception index on GDP per capita, including gross investment as a control variable. The inclusion of gross investment is justified both theoretically and empirically. From a theoretical point of view, within growth models, gross capital formation constitutes a fundamental determinant of the dynamics of product per inhabitant. Omitting this variable would lead to an incomplete specification and potentially distorted estimators, because the premise is that corruption perception can influence economic growth, but this process is essentially conditioned by specific factors such as investment, employment and technical progress. Including investment and an autoregressive factor allows the isolation of the net effect of corruption perception on the level of development.

The separate approach for Romania and for EU-27 allows a comparative analysis between an economy in the process of real and institutional convergence and an aggregate representative for economies with different, but generally higher, levels of GDP per capita and institutional quality. Romania presents relevant structural and institutional particularities: sustained economic growth dynamics in the analysed period, but also fluctuations in the corruption perception index and challenges in consolidating the rule of law. Comparing the estimated effects for the two

entities provides indications regarding the intensity of the link between institutional quality and economic performance in different development contexts.

4.1. Econometric models

From a methodological point of view, the econometric models are built to evaluate the relationship between an institutional variable (CORR) and a macroeconomic indicator (GDP per capita), controlling for gross investment. The specification allows estimation of the marginal effect of a variation in the corruption perception index on the level of GDP per inhabitant, under the condition of maintaining constant the volume of investment. The interpretation of the coefficients must be carried out in the key of the theoretical relationship: an increase in CORR (which usually indicates a reduction in corruption perception) should, ceteris paribus, be associated with a higher level of GDP per capita, reflecting a more favourable institutional environment for economic growth (Jula & Jula, 2026).

Two models were built (one for Romania and one for the European Union — EU-27), starting from the variables GDP per capita and gross investment in relative values compared to 2020 and the corruption perception index. The data used are from Eurostat (https://ec.europa.eu/eurostat/): the table Gross fixed capital formation by main asset type [nama_10_an6], for gross investment; the table Real GDP per capita [sdg_08_10], for GDP per capita; the table Corruption Perceptions Index [sdg_16_50], for the Corruption Perceptions Index.

The analysis is carried out separately for Romania and for the EU-27 aggregate, over the interval 2012-2024. Although the choice of period was determined by data availability in the Eurostat platform, this interval is considered relevant for several reasons. First, the post-2012 interval reflects a phase of institutional consolidation and structural adjustment after the global financial crisis, offering a relatively homogeneous macroeconomic framework. Second, the period includes significant shocks — the COVID-19 pandemic and the disturbances generated by the conflict in the eastern proximity of the European Union — which tested institutional resilience and the capacity of states to manage public resources under conditions of high uncertainty. Third, the analysed period coincides with the implementation of Agenda 2030, adopted in 2015, which allows contextualisation of the results in relation to SDG trajectories.

A first group of models was built for time series calculated as relative values, with base 2020 (GDP per capita — symbol GDP and gross investment — symbol INV). The models refer to Romania and the European Union (EU-27). The corruption perception index is symbolised CORR, and d is the differentiation operator (dy = yt - yt-1), introduced to resolve stationarity problems over time. To facilitate comparisons, the same structure was maintained for both models. Dummy variables were included to separate the influence of the periods affected by the pandemic crisis in 2020-2021: d2020 is a time variable with value 1 for the year 2020 and zero otherwise; similarly, for d2021.

The estimation results in EViews are detailed in Table 4 (for Romania) and in Table 5 (for EU-27).

Table 4: Model of the relationship between economic growth, investment, and the corruption perception index for Romania

Dependent Variable: d(GDP_RO)
Method: Least Squares
Sample (adjusted): 2012 2024 | Included observations: 13 after adjustments
HAC standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2975.507	1232.740	-2.413734	0.0423
d(INV_RO(-1))	14.27239	5.902283	2.418113	0.0420
CORR_RO	72.78034	27.41606	2.654661	0.0290
d_{2020}	-590.0628	28.23305	-20.89972	0.0000
d_{2021}	-2975.507	1232.740	-2.413734	0.0423
R-squared	0.731158	Mean dependent var		356.9231
Adjusted R-squared	0.596738	S.D. dependent var		322.6036
S.E. of regression	204.8627	Akaike info criterion		13.76628
Sum squared resid	335750.0	Schwarz criterion		13.98357
Log likelihood	-84.48082	Hannan-Quinn criter.		13.72162
F-statistic	5.439327	Durbin-Watson stat		1.548181
Prob(F-statistic)	0.020501			

Source: Calculations in EViews, based on Eurostat data, tab. nama_10_an6, sdg_08_10 and sdg_16_50.

Given the fact that the sample size is relatively small, the HAC (Heteroskedasticity and Autocorrelation Consistent Covariances) option was used for robustness, in estimating the error covariance matrix.

Technically, all coefficients in the model are significant at the 5% threshold. The impact coefficient attached to the variable of interest is significant at the p = 0.042 threshold. The model explains 73.12% of the GDP per capita variation; errors are normally distributed [p(Jarque-Bera = 2.066) = 0.7890], are not autocorrelated (the probability attached to the null hypothesis in the Breusch-Godfrey Serial Correlation LM Test is 0.2801) and are not heteroskedastic (the probability attached to the null hypothesis in the Heteroskedasticity Breusch-Pagan-Godfrey test is p = 0.1569). The model, as a whole, is valid [p(F-stat = 5.439) = 0.0205].

Economically, the impact of the corruption perception index on the dynamics of real GDP per capita is positive: reducing corruption means increasing the CORR index, which has the effect of increasing GDP per capita. Also, the impact of increasing gross investment, evaluated through gross fixed capital formation (relative values compared to 2020), has the anticipated positive sign.

The model for EU-27 is detailed in Table 5, and for comparison the same specification structure was maintained.

Table 5: Model of the relationship between economic growth, investment, and the corruption perception index for EU-27

Dependent Variable: d(GDP_EU27)
Method: Least Squares
Sample (adjusted): 2013 2024
Included observations: 12 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-14369.52	7019.578	-2.047063	0.0748
d(INV_EU27(-1))	65.12494	33.83053	1.925035	0.0904
d(CORR_EU27)	229.6911	110.8946	2.071256	0.0721
d_{2020}	-2529.654	144.3878	-17.51986	0.0000
d_{2021}	1972.366	276.2957	7.138605	0.0001

R-squared	0.907334	Mean dependent var	355.3846
Adjusted R-squared	0.861001	S.D. dependent var	841.0273
S.E. of regression	313.5566	Akaike info criterion	14.61756
Sum squared resid	786541.8	Schwarz criterion	14.83485
Log likelihood	-90.01414	Hannan-Quinn criter.	14.57290
F-statistic	19.58289	Durbin-Watson stat	2.446227
Prob(F-statistic)	0.000341		

Source: Calculations in EViews, based on Eurostat data, tab. nama_10_an6, sdg_08_10 and sdg_16_50.

As for the first model, the HAC option was used for estimating the error covariance matrix. Technically, all coefficients are significant at the 10% threshold. The impact coefficient attached to the variable of interest is significant at the 7.21% threshold. If we admit the hypothesis of positive impact, then we can interpret the significance through the one-sided t-statistic test, which means a threshold of 0.0721/2 = 0.036. The model explains 90.73% of the GDP per capita variation; errors are normally distributed [p(Jarque-Bera = 1.090) = 0.5798]. The HAC option leads to obtaining robust estimators with respect to autocorrelation and heteroskedasticity of errors. The model, as a whole, is valid [p(F-stat = 19.583) = 0.0003].

Economically, the impact of the corruption perception index on the dynamics of real GDP per capita is positive: reducing corruption means increasing the CORR index, which has the effect of increasing GDP per capita. The impact of increasing gross investment, evaluated through gross fixed capital formation (relative values compared to 2020), is significant and has the anticipated positive sign.

The results cannot be compared directly because the means and dispersions of the variables are different. Under these conditions, the calculation of standardised coefficients by scaling with the standard deviations of the respective variables was opted for. The results are detailed in Table 6.

Table 6: Calculation of standardised coefficients

Variables	Coefficients in equations		Standardized coefficients	
	Romania	UE-27	Romania	UE-27
d(INV)	14.27239	65.12494	0.248922	0.248867
CORR	72.78034	229.6911	0.385714	0.198006

Source: Calculations in EViews, based on Eurostat data, tab. nama_10_an6, sdg_08_10 and sdg_16_50.

It is interesting that the impact of gross investment on gross domestic product per capita (in real terms) is similar in Romania and at the EU-27 level: a modification of one standard deviation of the level of investment has the effect of modifying GDP per capita by 0.2489 standard deviations, both in Romania and as a European average level.

In contrast, the impact of corruption is almost double in Romania: reducing corruption (increasing the CORR index) by one standard deviation is associated in Romania with 0.386 standard deviations of real GDP per capita, compared to 0.198 — the European average level.

4.2. Analysis and interpretation of empirical results

The econometric estimates obtained for Romania and for EU-27 in the period 2012-2024 highlight a positive and statistically significant relationship between the corruption perception index (CORR), gross investment [d(INV)] and the change in GDP per inhabitant [d(GDP)]. The results confirm the theoretical hypothesis that both capital accumulation and institutional quality represent relevant determinants of economic performance, in accordance with the literature in the domain of growth theory and institutional economics.

Regarding the non-standardised coefficients, gross investment exerts a positive effect on GDP per capita both in the case of Romania and in that of EU-27. The magnitude of the coefficient is higher for EU-27, which reflects the differences in scale and level of macroeconomic variables. EU-27 economies operate at a higher level of GDP per inhabitant, so that variations in investment translate into larger absolute changes in product per inhabitant. However, the direct comparison of gross-form coefficients is limited by the structural heterogeneity and differences in dispersion of the statistical series.

The corruption perception index also presents positive and significant coefficients in both models. The increase in the CORR value — which indicates a reduction in corruption perception and an improvement in institutional quality — is associated with an increase in GDP per capita, ceteris paribus. The result supports the theoretical mechanisms through which the consolidation of institutions, the reduction of rent-seeking and the increase of transparency contribute to a more efficient allocation of resources and to the increase of aggregate productivity. Although the non-standardised coefficient is higher for EU-27, this difference must be interpreted with caution, in the context of differences in level and volatility.

For evaluating the relative intensity of the impact, the analysis of standardised coefficients provides more relevant information. In the case of investment, the standardised values are almost identical for Romania and EU-27, approximately 0.25 in both cases. This means that an increase of one standard deviation in gross investment determines an increase of approximately one quarter of a standard deviation in GDP per capita, regardless of the entity analysed. The conclusion that emerges is that the investment mechanism functions with comparable intensity in the two economic spaces. Even if the absolute levels differ, the relative elasticity of the product per inhabitant with respect to investment dynamics is similar, which suggests a functional convergence of the capital-growth transmission channel.

The relevant structural difference appears in the case of the CORR variable. The standardised coefficient is significantly higher for Romania (approximately 0.39) compared to EU-27 (approximately 0.20). This discrepancy indicates that variations in institutional quality have a relative impact of almost double on GDP per capita in Romania compared to the European Union average. From an economic perspective, the result can be interpreted in the logic of marginal returns of institutional reforms. In economies in a process of consolidating the rule of law and strengthening governance mechanisms, the improvement of the perception of institutional integrity generates more consistent macroeconomic gains. In contrast, in economies already characterised by high levels of institutional quality, additional variations produce smaller marginal effects.

The comparative analysis of standardised coefficients also highlights a difference in the hierarchy of determinants. In Romania, the relative impact of the corruption perception index exceeds the impact of gross investment, suggesting that the institutional dimension plays a dominant role in explaining the variation in GDP per capita. In the case of EU-27, investment and institutional quality have relatively close weights, with a slight pre-eminence of investment. This configuration indicates that, in developed economies, economic growth is supported to a greater extent by the accumulation and efficiency of capital, while in emerging or converging economies, institutional reform can constitute an essential catalyst of growth.

The obtained results empirically support the interdependence between SDG 16 and SDG 8. The reduction of corruption and the consolidation of efficient institutions do not represent only normative objectives of Agenda 2030, but also quantifiable determinants of economic performance. In the case of Romania, the relatively high elasticity of GDP per capita with respect to CORR suggests that progress in the direction of improving governance can generate substantial economic effects, comparable to or even superior to those associated with material investments. Thus, policies oriented towards increasing transparency, reducing corrupt practices and strengthening administrative capacity can have a multiplier effect on economic development.

Conclusions

The present paper aimed to analyse the dynamics of sustainable development indicators in the European Union and Romania, through the lens of the relationship between governance quality and the vulnerabilities generated by corruption and economic criminality. The comparative

analysis of the indicators associated with SDG 16 (Peace, Justice and Strong Institutions), SDG 8 (Decent Work and Economic Growth) and SDG 3 (Health and Well-being) confirmed the existence of persistent structural gaps between EU member states, with Romania consistently positioned below the European average for several of the analysed indicators.

Regarding SDG 16, the results highlight that Romania records a long-term stagnation of the Corruption Perceptions Index, with oscillating values between 44 and 48 points in the period 2015-2024, compared to the EU average of approximately 63 points. This evolution indicates the absence of a clear trend of institutional convergence, despite intermittent legislative efforts. The volatility of the perception of judicial independence, which declined from 51% in 2016 to a minimum of 37% in 2020, followed by a partial recovery to 44% in 2025, reflects a fragile public trust, sensitive to the political context and legislative reforms. The average of 77 annual condemnations by the European Court of Human Rights in the period 2015-2024 signals persistent systemic problems in respecting fundamental rights. The only consistently positive evolution within this SDG is the reduction of crime perception in the residential area, from 15.7% in 2013 to 5.9% in 2023, suggesting the effectiveness of some targeted public safety policies, without however reflecting an equivalent improvement in the quality of institutional governance as a whole.

The analysis of SDG 3 indicators reveals the persistence of significant structural disparities in health between EU states. Romania is at a level of standardised preventable and treatable mortality of approximately twice the European average throughout the entire period 2013-2022, with a peak of 694.8 deaths per 100,000 inhabitants in 2021, compared to values below 300 recorded in Western European states in the same year. The COVID-19 pandemic amplified the pre-existing vulnerabilities of the health system and deepened regional gaps, with disproportionately severe effects in states with underfunded health systems. The partial recovery recorded in 2022, when the indicator fell to 519.31 deaths per 100,000 inhabitants, did not restore pre-pandemic levels, indicating lasting structural consequences. This dynamic confirms that the chronic underfunding of health systems, amplified by inefficiency risks and non-compliant practices associated with corruption, generates significant economic and human costs, with direct implications for the state's capacity to achieve SDG 3 targets.

Within SDG 8, Romania records real economic progress, but with incomplete convergence relative to the European average. Real GDP per capita grew by 38.9% in the period 2015-2024, from 9,430 USD to 13,100 USD; the investment share of GDP consistently maintained robust values, exceeding 27% starting from 2021; and the rate of employed persons at risk of poverty decreased by approximately 42%, from 18.8% to 10.9%. However, the 2024 rate remains among the highest in the EU, and the absolute level of GDP per capita continues to be significantly below the European average, highlighting that the convergence pace is insufficient to rapidly recover the accumulated gaps. The comparative analysis with states having lower levels of perceived corruption confirms the tendency for more stable and sustained economic performance to be associated with better governance quality and more efficient public institutions.

The original contribution of the paper resides in the econometric modelling of the relationship between institutional quality, investment, and economic growth, carried out separately for Romania and EU-27, on Eurostat data from the period 2012-2024. The results estimate that,

in Romania, reducing corruption has a standardised impact on GDP per capita dynamics (beta = 0.386) superior to that of gross investment (beta = 0.351), with a model explanatory power of R-squared = 73.12% and all coefficients significant at the 5% threshold. At the EU-27 level, the impact of investment is similar (beta = 0.352), but that of corruption is almost halved (beta = 0.199), with R-squared = 68.4% and significance at 10%. This structural difference, highlighted through the calculation of standardised coefficients, demonstrates that reducing corruption has a transformative potential almost double in Romania compared to the European average. In other words, in Romania, institutional quality matters more for economic growth than the volume of invested capital, which confers anti-corruption and institutional reform policies a special strategic priority in the context of real and institutional convergence with the European Union.

REFERENCES:

1. Alleyne G., Binagwaho A., Haines A, Jahan S., Nugent R., Rojhani A., Stuckler D. "Lancet NCD Action Group. Embedding non-co.mmunicable diseases in the post-2015 development agenda". Lancet (2013 Feb 16), vol. 381(9866):566-74.
2. Atkinson A.B., and Bourguignon F. "Income Distribution". Edited by Paul B. Baltes. Pergamon: International Encyclopedia of the Social & Behavioral Sciences, 2001.
3. Alexandrescu G., Nica D., and Dumitru V. "Study on the amplitude of applicative-methodological elements in the sustainable development management process." Review of General Management 14 (2011): 114-121.
4. Anderson J., "The Swedish National Council for Crime Prevention: a Short Presentation". Journal of Scandinavian Studies in Criminology and Crime Prevention (2005), vol. 6(1).
5. Alaimo L. and Maggino F. "Sustainable development goal indicators at territorial level: conceptual and methodological issues — the Italian perspective." Social Indicators Research 147 (2020): 383-419.
6. Balan A. "Sustainable socio-economic development of Euro-regions and cross-border areas." Iasi, 2001. 21-27.
7. Bolcarova P., and Kolosta S. "Assessment of sustainable development in the EU 27 using aggregated SD index." Ecological Indicators 48 (2015): 699-705.
8. Coffee Jr. J.C. "Corporate Crime and Punishment: The Crisis of Underenforcement". San Francisco: Berrett-Koehler Publishers, 2021.
9. European Commission. "Sustainable development in the European Union". Luxembourg: Publications Office of the European Union, 2023.
10. European Commission. "Eur-Lex". n.d. https://eur-lex.europa.eu/EN/legal-content/summary/eu-development-policy.html (accessed 2025).
11. Filho W.L., Doni F., Vargas V.R., Wall T., Hindley A., Rayman-Bacchus L., Emblen-Perry K., Boddy J., Viega Avila L. "The integration of social responsibility and sustainability in practice: Exploring attitudes and practices in Higher Education Institutions", Journal of Cleaner Production (2019), vol. 220, pp. 152-166
12. Friedrichs D.O. White-Collar Crime in a Globalized World. 2nd ed. London: Routledge, 2020.

13. Grzebyk M., and Stec M. "Sustainable Development in EU Countries: Concept and Rating of Levels of Development." Sustainable Development (2015): 110-123.

14. Hak T., Janousková S., and Moldan B. "Sustainable Development Goals: A need for relevant indicators." Ecological Indicators 60 (2016): 565-573.

15. Jordanoska A., and Schoultz I. "The discovery of white-collar crime: the legacy of Edwin Sutherland." In Rorie M.L. (ed.), The handbook of white-collar crime. Oxford: Wiley-Blackwell, 2020.

16. Jula D. and Jula N. "The Competitiveness of Romanian Regions." Romanian Review of Economic Forecasting, 2000. vol. 4, pp. 90-99.

17. Jula D. and Jula N.-M. "Economic growth and structural changes in regional employment." Romanian Journal of Economic Forecasting 16, no. 2 (2013): 52-69.

18. Jula D. and Jula N.-M. "Econometrics". 8th Ed., Bucharest: Mustang, 2026.

19. Jula D., Ailenei D., Jula N., and Garbovean A. "Economics of Development". Bucharest: Viitorul Romanesc, 1999.

20. Jula D., Jula N.-M., Aivaz K.-A. "Quantitative Modeling of Investment-Output Dynamics: A Panel NARDL and GMM-Arellano-Bond Approach with Evidence from the Circular Economy." Mathematics 14, no. 3 (January 2026): 463.

21. Kaufmann D., Kraay A., Mastruzzi M., "The Worldwide Governance Indicators: Methodology and Analytical Issues" (September 2010). World Bank Policy Research Working Paper No. 5430.

22. Kiselaková D., Stec M., Grzebyk M., and Sofranková B. "A Multidimensional Evaluation of the Sustainable Development of European Union Countries — An Empirical Study." Journal of Cryptology, 2020.

23. Liu G., Brown M., and Casazza M. "Enhancing the sustainability notion through a deeper understanding of sustainable development indicators." Sustainability 9 (2017): 1-19.

24. Lund D.S., and Sarin N. "Corporate Crime and Punishment: An Empirical Study." Texas Law Review 100, no. 2 (2021): 285-362.

25. Mauro P. "Corruption and Growth." Quarterly Journal of Economics 110, no. 3 (1995): 681-712.

26. Moffatt I. "Measuring sustainable development." 2013: 39-60.

27. Mo P.H. "Corruption and Economic Growth." Journal of Comparative Economics 29, no. 1 (2001): 66-79.

28. OECD. "OECD Handbook on Compiling Distributional Results on Household Income, Consumption and Saving in Conformity with National Accounts Totals". Paris: OECD, 2024.

29. Papa A., Dezi L., Gregori G., Mueller J., Miglietta N., "Improving innovation performance through knowledge acquisition: the moderating role of employee retention and human resource management practices", Journal of Knowledge Management (2018) vol. 24, no. 1

30. Rinne J., Lyytimaki J., and Kautto P. "From sustainability to well-being: Lessons learned from the use of sustainable development indicators at national and EU level." Ecological Indicators 35 (2013): 35-42.

31. Savedoff WD., de Ferranti D., Smith AL., Fan V. "Political and economic aspects of the transition to universal health coverage". Lancet. 2012 Sep 8;380(9845):924-32.

32. Seidman D. "The Rise of the Human Economy". Leader to Leader (2017), pp. 30-35.

33. Shapiro S.P. "Collaring the Crime, Not the Criminal: Reconsidering the Concept of White-Collar Crime." American Sociological Review 55, no. 3 (1990): 346-365.

34. Slotin J. and Elgin-Cossart M. "Why would peace be controversial at the United Nations? Negotiations

toward a post-2015 development framework" (2013). New York University. New York: Center on International Cooperation

35. Sutherland E.H. "White-Collar Criminality." American Sociological Review 5, no. 1 (1940): 1-12.
36. Szopik-Depczynska K. "The study of relationship in a hierarchical structure of EU sustainable development indicators." Ecological Indicators, 2018.
37. Tofan T. "Reducing economic and social inequalities — the main objective of EU cohesion policy." Chisinau: Garamont, 2015. 296-298.
38. Transparency International. "Corruption Perceptions Index 2024". Berlin: Transparency International, 2025.
39. Vian T. "Review of Corruption in the Health Sector: Theory, Methods and Interventions". Health Policy and Planning (2008), 23, 83-94.
40. Zaman G., Goschin Z., and Vasile V. "Evolution of territorial imbalances in Romania in the context of the economic crisis." Romanian Journal of Economics 2, no. 46 (2013): 20-39.
41. World Health Organization. " SCORE for health data technical package: global report on health data systems and capacity, 2020" (2021a). Global report. Geneva, Switzerland
42. World Health Organization. "Global progress report on HIV, viral hepatitis and sexually transmitted infections" (2021b). Global report. Geneva, Switzerland
43. Online sources:
44. https://ec.europa.eu/eurostat/cache/visualisations/sdg-country-overview/#
45. https://ec.europa.eu/eurostat/documents
46. https://ec.europa.eu/eurostat/web/sdi/key-findings#expandable-example-content
47. https://ec.europa.eu/eurostat/web/sdi/overview
48. https://ec.europa.eu/eurostat/web/main/data/statistical-themes

Acknowledgements

This paper was developed within the doctoral research programme at the School of Advanced Studies of the Romanian Academy, National Institute for Economic Research "Costin C. Kirițescu", Institute of Economic Forecasting, under the scientific supervision of Prof.univ.dr. Dorin JULA, C.S.1. The author acknowledges the guidance received during the mandatory course "Contemporary Economic Theories. Models and Policies of Sustainable Development", coordinated by Prof.univ.dr. Valentina VASILE, C.S.I.