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Socio-Economic Development Management System in The Context of Achieving the Sdg8 and Sdg9: Evidence from Ukraine

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Abstract

The COVID-19 pandemic has posed significant management challenges globally, impacting the path towards achieving sustainable development goals, as outlined in the UN 2030 Agenda for Sustainable Development. This study aims to manage an in-depth analysis of the real impact of the COVID-2019 pandemic on socio-economic development, particularly focusing on the achievement of global Sustainable Development Goals 8 and 9, which are closely related to it. Utilizing primary research methods, the study engages in managing the analysis of indicator dynamic changes and comparative study to assess the impact of the COVID-19 pandemic on achieving goals progress. Effective management strategies are critical in evaluating the development trajectory in the post-pandemic period. Despite the limited statistical data, effective management of the available information revealed that, for many indicators, the rates of their decline in 2020 for Ukraine were managed to be kept lower than for other Eastern European countries. The results for 2021 showcased a managed gradual recovery of positive dynamics in the context of achieving Sustainable Development Goals 8 and 9, underscoring the pivotal role of adept management in navigating through the pandemic's socioeconomic impacts.

Keywords: *Sustainable Development Goals, Socio-Economic Development, Management, COVID-19 Pandemic, Ukraine, Eastern Europe Countries, SDG8, SDG9*

INTRODUCTION

The 2030 Agenda for Sustainable Development, adopted in 2015, represents a strategic document that delineates the direction of global community efforts in management for progressive development. It addresses management challenges in overcoming poverty, tackling climate change, promoting the creation of a clean environment, and achieving social equality (Long, 2015). Within this framework, 17 Sustainable Development Goals (SDGs) were established to guide the management of these global issues. By 2017, the UN had developed and approved a comprehensive set of indicators, managed through ongoing revision, clarification, and supplementation processes, to monitor progress towards these goals. As of 2021, this framework included 348 indicators, with 231 being unique and 17 utilized across multiple SDGs, showcasing the management complexity in monitoring these goals (SDG, 2030).

In managing its commitment to sustainable development, Ukraine, along with other UN member states, has actively developed and implemented policies and procedures reflective of its national context. Between 2016-2017, Ukraine held a series of open discussions to adapt the SDGs to its national development specifics, resulting in a managed System of Tasks, Targets, and Indicators encompassing 183 SDG indicators across 86 tasks (Sustainable Development, 2017). Over 160 regulations, detailing approximately 4.3 thousand planned measures, were enacted, demonstrating the extensive management efforts aimed at implementing the relevant SDG targets (WHO, 2023).

The global management of the economic system faced unprecedented challenges with the declaration of the COVID-19 pandemic by the WHO in March 2020. The pandemic's impact led to comprehensive management responses worldwide, including the declaration of states of emergency, movement restrictions, employment and business disruptions, and the limitation of citizens' rights and freedoms. Despite management efforts to

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combat COVID-19 through restrictive measures, mass vaccination, and government support for businesses, the persistence of the virus and the risk of new strains continued to pose significant management challenges (WHO chief, 2023). The COVID-19 pandemic has notably impacted the management of national economies and the global pursuit of the SDGs. This study aims to assess the pandemic's real impact on socioeconomic development in relation to sustainable development goals, with a management focus on global SDG8 and SDG9 as they pertain to Ukraine's socio-economic development. The study will manage the analysis of target indicators' dynamics, their directional changes during the pandemic, and their alignment with planned trends, highlighting the critical role of effective management in achieving the SDGs amidst global challenges.

Management of the process of achieving SDGs has remained a priority for international institutions and researchers, especially in light of the COVID-19 pandemic's widespread impact. This emphasis on management underscores the necessity for comprehensive analysis and effective management strategies to address the pandemic's effects on global and national levels, aiming for the successful realization of the SDGs. The significance of effectively managing the monitoring and achievement of SDGs has been amplified in the last four years due to the COVID-19 pandemic's rapid spread. Management practices in this regard have been pivotal, with global and country-specific analyses being conducted to evaluate the pandemic's impact on socio-economic development and sustainable development goals. This situation necessitates robust management strategies to mitigate the pandemic's negative effects on national economies and, consequently, on the prospects of achieving the SDGs. Thus, this investigation not only aims to assess the real impact of the COVID-2019 pandemic but also underscores the importance of strategic management in aligning the dynamic changes in target indicators with the planned trends for SDG8 and SDG9, which are crucial for Ukraine's socio-economic development. Management efforts in monitoring and achieving the SDGs require an adaptive, responsive approach to global crises such as the COVID-19 pandemic. The management of resources, policies, and strategies to combat the pandemic's effects involves a complex interplay of international cooperation, national policy adaptation, and community engagement. Effective management of these efforts is essential to ensure that the progress toward achieving sustainable development goals remains on track despite the challenges posed by the pandemic.

The management of the response to the COVID-19 pandemic and its impact on the achievement of sustainable development goals highlights the need for a coordinated, well-managed approach to global health crises, socioeconomic challenges, and environmental sustainability efforts. The lessons learned from managing the pandemic's impact can inform future strategies for achieving the SDGs, emphasizing the critical role of management in navigating global challenges towards a more sustainable, equitable future.

LITERATURE REVIEW

The damaging pandemic's impact on achieving sustainable development goals and in the context of economic growth and overcoming social problems have been recorded in all countries. Olaomo et al. (2021), Odey et al. (2021), Kuzior et.al., (2023) Ekwebelem et al. (2021), Fagbemi (2021), Bwire (2022), Abdool Karim (2021) Bochko etl. al. (2022) presented the analysis results on the example of African countries. It was established that the current countries' development trajectory does not guarantee the effective achievement of the SDGs by 2030. The economic impact of the pandemic turned out to be quite significant. The scholars found that the most critical results were the partial or complete cessation of most economic and social activities, including a drop in agricultural production, decreased exports, and restrictions on the tourism business. This led to the loss of livelihoods related to employment and other sources of income, weakening food supply chains. The reduction of contact of the population with medical institutions led to an increase in morbidity and mortality, including the development of other diseases, particularly measles and malaria. The main conclusion of the presented reports is that to achieve the necessary progress in the continent's development, it is essential to coordinate efforts both at the domestic and international levels to ensure adequate financing of the countries' health care system and to implement a stabilising fiscal policy. However, the most significant challenges are growing inequality, problems of hunger and poverty. The study of Moyer, et.al. (2022) presents estimates of progress in achieving SGD1 for different countries of the world for the period up to 2050. The authors stated that, under the most unfavourable conditions, significant problems of poverty growth are expected in 17 countries of the world, mainly in South Asia and sub-Saharan Africa.

Suriyankietkaew and Nimsai (2021) proposed strategies and policies for economic recovery in Southeast Asia. Their results are based on the data processing collected through a semi-structured interview with probing methods. These ideas harmonise relevant measures with international sustainable development policy. According to the authors, this will contribute to countries' balanced and transformational growth and increase regional stability. The need to attract additional sources of funding, in particular through the implementation of investment programs, to reduce financial losses in Asia-Pacific Countries with Special Needs is reflected in the report. Emphasis was also placed on strengthening the development of digital financial technologies mainly.

Ukraine is also paid considerable attention to monitoring SDGs' achieving. Outcomes are in the monitoring reports on SDGs developed by the State Statistics Service of Ukraine (SSSU) with the cooperation of UNICEF in Ukraine and the UN Resident Coordinator Office. It contains the analysis results of the dynamics of the target indicators defined in and their compliance with the target values of these indicators. The positive thing is that the information is presented at the country's level and in regional statistics. However, these documents contain only "dry" statistical information without its analysis, mainly the reasons for deviations from the basic values of indicators and the necessary measures to eliminate the negative consequences. Also, in 2020, the "Voluntary National Review of Sustainable Development Goals" was prepared. In addition to statistical data, it describes the measures for deviations from the planned development trajectory. A separate block identifies areas for action for the next decade, which are based on discussions and consultations with a wide range of experts: civil servants, scientists, experts from UN agencies in Ukraine, business circles, the public, and the expert community. They reflect generalised recommendations to improve monitoring procedures and the system of relevant indicators.

Given some differences between the national system of sustainable development indicators and the Global Indicator Framework for Sustainable Development Goals, these reviews do not give an idea of the relevance of Ukraine's sustainable development progress to the Global Indicator Framework and make it difficult to compare results and trajectories with other countries' achievements. It should also be noted that in the works of domestic scholars, these issues were also given insufficient attention. Therefore, assessing trends and results in achieving the SDGs for Ukraine following the Global Indicator Framework is an urgent issue.

METHODOLOGY

The goals of sustainable development are interrelated. Analysis of the achievement of all target indicators identified in is time-consuming due to their vast number. Therefore, in our study, we limit ourselves to analysing those relevant to SDG8 and SDG9 and reflecting the country's socio-economic development. The main research method is to analyse the dynamics of change in indicators, including the COVID-19 pandemic, to assess its impact on progress in achieving the goals. Our review has used data from the SSSU (State Statistics, 2023), data from the Metadata repository for SDG Indicators (SDG indicators, 2023), Business and economic data for 200 countries (The Global Economy, 2023), data from the Industrial Analytics Platform (Industrial Analytics Platform, 2023), data for monitoring the SDG9, located on UNIDO Statistics Data Portal (UNIDO, 2023), a databank of the World Bank (DataBank, 2023), the statistical portal of ILO (ILOstat, 2023), Data portal of UN Statistics Division (United Nations, 2023) and others. To assess Ukraine's progress towards SDG8 and SDG9, we have compared the values of indicators with the corresponding indicators of other Eastern European countries: Bulgaria, the Czech Republic, Hungary, Poland, Romania, and Slovakia. These countries are members of the EU. According to the data of the World Bank (2021), as of 2021, most of these countries belonged to the category of countries with High-income industrial economies, except for Bulgaria, which has the status of a country with a Middle-income economy, and Ukraine, which belongs to countries with the level of the Lower middle-income economy. For research, we have chosen the period from 2016 to 2021. In some cases, due to the lack of relevant statistics, we have limited ourselves to 2020. The selected period covers the pre-pandemic period from 2016 to 2019 and the COVID-19 pandemic from 2020 to 2021.

RESULTS AND DISCUSSIONS

The Sustainable Development Report of 2022 offers a promising insight into Ukraine's progress towards sustainable development, particularly in the wake of the pandemic's challenges. With a Statistical Performance

Index (SPI) value of 75.7 in 2021, Ukraine surpassed the Eastern European average of 71.6, marking a notable achievement in its sustainable development efforts. This positioning at 37th out of 163 countries in the overall ranking underscores the effectiveness of Ukraine's management strategies in navigating the complex terrain of sustainable development amidst and following the pandemic. The moderate increase in the achievement levels of SDG8 (Decent Work and Economic Growth) and SDG9 (Industry, Innovation, and Infrastructure) compared to the previous year indicates a resilient recovery strategy from the pandemic crisis. It suggests that the management and implementation of policies geared towards economic recovery and innovation have begun to yield positive outcomes. This is further evidenced by Ukraine's performance relative to its Eastern European counterparts. Despite generally having lower overall sustainable development indicator values, Ukraine demonstrated the highest growth rate of this indicator in 2021. This achievement is depicted in the comparative analysis (Figure 1), highlighting Ukraine's dynamic management approach towards enhancing its sustainable development trajectory.Compared to selected Eastern European countries (Table 1),

Table 1. SDG Overall score (Statistical Performance Index)

Country Name	2016	2017	2018	2019	2020	2021
Bulgaria	72.39	73.01	73.34	73.90	74.25	74.28
Czech Republic	79.10	79.48	79.85	80.00	80.39	80.41
Hungary	77.65	78.02	78.27	78.59	78.76	78.85
Poland	79.38	80.63	80.20	80.57	80.19	80.47
Romania	76.64	76.58	77.15	77.47	77.57	77.58
Slovakia	76.95	77.73	77.81	78.01	78.47	78.39
Ukraine	72.29	73.41	74.24	74.97	75.33	75.71

(Source: Authors own research)

Ukraine has mostly lower overall sustainable development indicator values, but in 2021 it has the highest growth rate of this indicator (Figure 1).

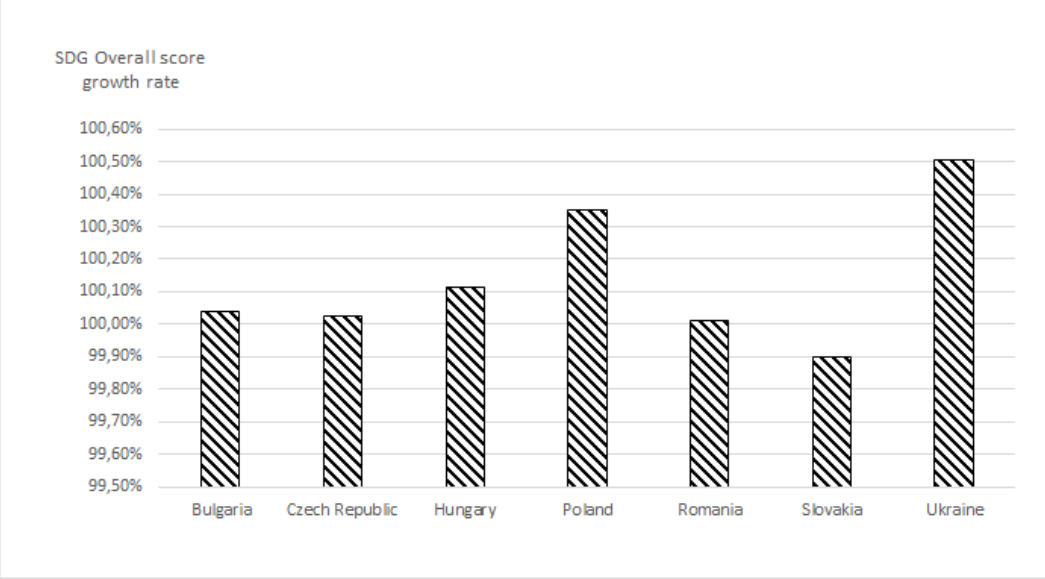

Figure 1. Countries' SDG Overall score growth rate in 2021

(Source: Authors own research)

The GDP determines the country's economic situation and measures well-being. Interethnic comparisons usually operate on this indicator, calculated per capita. Table 2 and Table 3 contain the growth rates of indicators per capita and per employee. For Table 2, current data for 2021 at the time of the study are not available.

Table 2. The per capita GDP growth rate at constant 2015 prices in US Dollars, per cent

Country Name	2016	2017	2018	2019	2020
Bulgaria	3.73	3.48	3.42	4.80	-3.68
Czech Republic	2.37	4.95	2.96	2.80	-5.97
Hungary	2.45	4.52	5.60	4.80	-4.44
Poland	3.26	4.93	5.44	4.84	-2.43
Romania	5.38	8.10	5.27	4.95	-3.30
Slovak Republic	1.81	2.87	3.70	2.53	-4.40
Ukraine	2.92	2.99	3.97	3.81	-3.45

(Source: Authors own research)

Table 3. The annual output growth rate per worker (GDP constant 2010 US Dollars), per cent

Country Name	2016	2017	2018	2019	2020	2021
Bulgaria	4.20	-0.90	3.00	1.20	-0.70	5.50
Czech Republic	0.50	3.50	1.90	2.30	-4.30	4.30
Hungary	-1.20	2.50	4.30	3.90	-3.60	3.60
Poland	1.60	3.20	4.70	4.40	-2.50	3.80
Romania	5.80	4.70	4.50	4.30	-2.00	13.30
Slovak Republic	-0.70	1.40	2.20	1.90	-2.80	2.20
Ukraine	3.10	3.40	3.40	3.30	-0.20	3.60

(Source: Authors own research)

According to the Tables, COVID-19 led to a decline in the GDP values for all countries in 2020. In general, in 2020, the GDP of the European Union decreased by 6.0% compared to 2019. In 2021, real GDP per capita reached 27,810 euros, 5.4% more than the previous year and slightly below 2019 (Sustainable development in the European Union, 2022). It should be noted that this growth was mainly due to household expenditures. The resumption of economic activity in Ukraine in 2021 led to an increment in GDP, which appropriately led to an increase in the value of this indicator per worker. However, this indicator was one of the lowest among the studied countries.

Employment is an important socio-economic development goal, especially for women, people with disabilities, young people, older people, and migrants. According to data from the International Labour Organization (ILOStat, 2023), in 2021, the global unemployment rate fell to 6.2%, but this value exceeds the pre-pandemic level of 5.4%. According to the forecast of this institution, the unemployment rate will remain above the level of 2019, at least until 2023. In 2021, 4.3% of working hours worldwide were lost compared to the fourth quarter of 2019, equivalent to a deficit of 125 million full-time jobs. Table 4, Table 5 and Table 6 contain data on the unemployment rate dynamics.

According to the above data, from 2016 to 2018, the unemployment rate in the EU countries in Eastern Europe tended to decline. One of the reasons for this decrease was the increasing participation of older workers and women in the labour force. However, in 2020 and 2021, there was an increase in the indicator's value, despite the employment support measures implemented in the EU. At the same time, in 2020, the increase in the unemployment rate was near 120%, while in Ukraine, this value was 115%.

Table 3. The annual output growth rate per worker (GDP constant 2010 US Dollars), per cent

Country Name	2016	2017	2018	2019	2020	2021
Bulgaria	4.20	-0.90	3.00	1.20	-0.70	5.50
Czech Republic	0.50	3.50	1.90	2.30	-4.30	4.30
Hungary	-1.20	2.50	4.30	3.90	-3.60	3.60
Poland	1.60	3.20	4.70	4.40	-2.50	3.80
Romania	5.80	4.70	4.50	4.30	-2.00	13.30
Slovak Republic	-0.70	1.40	2.20	1.90	-2.80	2.20
Ukraine	3.10	3.40	3.40	3.30	-0.20	3.60

(Source: Authors own research)

Table 4. The unemployment rate, total, per cent

Country Name	2016	2017	2018	2019	2020	2021
Bulgaria	7.6	6.2	5.2	4.2	5.1	5.3
Czech Republic	4.0	2.9	2.2	2.0	2.5	2.8
Hungary	5.1	4.2	3.7	3.4	4.2	4.0
Poland	6.2	4.9	3.9	3.3	3.2	3.4
Romania	5.9	4.8	4.2	3.9	5.0	5.6
Slovak Republic	9.7	8.1	6.5	5.8	6.7	6.8
Ukraine	9.5	9.3	8.8	8.2	9.5	9.9

(Source: Authors own research)

Table 5. The unemployment rate, male per cent

Country Name	2016	2017	2018	2019	2020	2021
Bulgaria	8.1	6.3	5.7	4.5	5.4	5.5
Czech Republic	3.4	2.3	1.8	1.7	2.2	2.3
Hungary	5.1	3.8	3.5	3.4	4.1	3.9
Poland	6.1	4.9	3.8	3.0	3.1	3.3
Romania	6.6	5.6	4.7	4.3	5.3	6.0
Slovak Republic	8.8	7.9	6.1	5.6	6.4	6.7
Ukraine	11.1	10.8	10.0	8.5	9.8	9.5

(Source: Authors own research)

Table 6. The unemployment rate, female, per cent

Country Name	2016	2017	2018	2019	2020	2021
Bulgaria	7.0	6.0	4.7	4.3	4.8	5.0
Czech Republic	4.7	3.6	2.8	2.4	3.0	3.4
Hungary	5.1	4.6	4.0	3.5	4.5	4.2
Poland	6.2	4.9	3.9	3.6	3.3	3.4
Romania	5.0	4.0	3.5	3.4	4.7	5.0
Slovak Republic	10.8	8.4	7.0	6.0	7.1	7.0
Ukraine	7.7	7.7	7.4	7.9	9.1	10.1

(Source: Authors own research)

The upward trend in the unemployment rate in Ukraine in 2021 has continued. Due to strict The management of unemployment and support for small and medium-sized businesses (SMBs) in Ukraine in 2021 faced significant challenges due to the continuation of strict quarantine measures, which impeded many workers from

resuming their employment. According to the State Statistics Service of Ukraine, 2023, the unemployment rate notably increased, especially among young people under 25, whose employment prospects were particularly volatile due to their lack of work experience and proper qualifications. This demographic is more likely to find employment under temporary contracts or in the service sector, highlighting a need for targeted management strategies to enhance their employment opportunities.

The management efforts to support employment during the pandemic have yielded mixed results. While the unemployment rate was lowest among individuals aged 30-34, likely due to the pandemic-induced growth in the IT industry—including online commerce, web application development, and digital technology services—those in the 40-49 age group experienced the highest level of employment, attributed to their significant work experience and qualifications. Conversely, individuals over the age of 60 faced the highest employment challenges, exacerbating concerns regarding SDG1, which focuses on reducing absolute poverty and enhancing social protection for vulnerable populations. SMBs encountered severe disruptions, with a 16% increase in the number of entrepreneurs halting their operations in 2020 compared to 2019. This situation was exacerbated by an increasing tax burden and changes in the taxation system, compelling many entrepreneurs to cease operations due to financial strain, despite the implementation of management measures such as reduced penalties for late tax payments, a moratorium on conducting tax audits, deferrals in personal income tax payments, and exemptions from the single social contribution for certain entrepreneur categories during the quarantine period. In response to these challenges, the state introduced the "Affordable Loans 5-7-9%" program to support SMB development, demonstrating a proactive management approach to mitigating the pandemic's impact on this critical sector. Within the first three working days of 2021, applications for this program amounted to UAH 800 million, indicating significant interest and potential relief for SMBs. However, the absence of comprehensive statistics hinders a deeper analysis of the pandemic's impact on SMB development, underscoring the need for improved data management and analysis to inform targeted support strategies. These insights reveal the critical importance of strategic management in addressing the multifaceted challenges posed by the pandemic to unemployment rates and SMB sustainability in Ukraine. Effective management strategies and support measures are essential to navigate the economic and social challenges, enhancing resilience and recovery efforts towards sustainable development goals.

Unemployment among women in Ukraine is higher than for men, although there is a reverse trend for EU countries. Although women are increasingly becoming highly skilled and even superior to men in terms of education, the impact of childcare responsibilities remains a significant factor in reducing women's employment. Women also often work part-time. It should be noted that similar problems occur in EU countries. In 2021, 30.2% of women aged 20 to 64 did not work because they cared for children or disabled adults, while among men, there was 8.5%. 28.3% of employed women worked part-time compared to 7.6% of employed men (Eurostat Statistics, 2022). According to the SSSU (State Statistics, 2023), the number of informally employed citizens aged 15-70 in 2021, compared to 2020, decreased by 219.4 thousand people and amounted to 3.1 million or 19.3 % of all engaged citizens. However, such a reduction is not the result of public employment policy but a consequence of the removal or cessation of economic activity of many enterprises, especially small and medium-sized ones, and, consequently, the dismissal of informally employed persons. Among women, the share of those engaged in the economy's informal sector was 16.2%, and among men – 22.1%. The most common informal employment was in agriculture, forestry, fisheries (46%), and construction (17%).

A safe and healthy working environment is an essential condition for decent work. In Ukraine, significant efforts are being made to ensure the necessary occupational health and safety standards. Statistics on non-fatal and fatal occupational injuries per 100,000 workers are presented in Table 7. The lack of available data in total volume doesn't allow us to analyse the EU countries, so this table contains only data for Ukraine.

Table 7. Non-fatal and fatal occupational injuries per 100,000 workers

Indicator	2016	2017	2018	2019	2020
Non-fatal occupational injuries per 100.000 workers, total	51.8	53.3	49.1	53.5	85.1

Non-fatal occupational injuries per 100.000 workers, male	80.0	83.6	76.8	81.9	81.6
Non-fatal occupational injuries per 100.000 workers, female	27.5	27.8	25.6	39.1	88.1
Fatal occupational injuries per 100.000 workers, total	4.5	3.8	3.6	5.5	5.4
Fatal occupational injuries per 100.000 workers, male	8.9	7.3	7.0	11.0	9.7
Fatal occupational injuries per 100.000 workers, female	0.8	0.8	0.7	0.8	0.7

(Source: Authors own research)

According to Table 7, in 2020, there will be a significant increase in the number of non-fatal occupational injuries among workers and women. The number of fatal occupational injuries without fatalities per 100,000 workers decreased by 2019, after which 2019 there was an increase in such cases. In 2020, there also was decreasing the indicator values. The leading causes of injuries among workers in accidents are organisational reasons: admission to work without training and testing of knowledge on labour protection, violation of labour and industrial discipline, failure to comply with labour protection instructions, and failure to perform official duties. Also among the causes are psychophysical, manufactured, natural, environmental, and social causes. The reason for the relatively high value of the indicator is that the main number of cases is in the construction and agriculture sectors, where employment remained high during the pandemic. This also explains that the indicator's value for men significantly exceeds that of women, as male workers dominate these activities. According to the SSSU, in 2020, the average number of days of incapacity for work compared to 2019 decreased by almost half and amounted to 27.2 days.

According to Eurostat data (2022), in the EU countries in 2019, fatal workplace accidents were 1.7 per 100,000 employees. The value was 0.2 among women compared to the corresponding value of 3.1 for men. At the same time, there is a gradual decrease in these indicators. The riskiest in this aspect is the mining sector of the economy.

The development of the social sphere, particularly in health care and education, is of great importance in ensuring sustainable economic growth. Indicators reflecting the countries' total spending on health care and education are shown in Table 8 and Table 9.

Table 8. Health: Current expenditure (% of GDP)

Country Name	2017	2018	2019	2020	2021
Bulgaria	7.5	7.3	7.1	8.1	7.3
Czech Republic	7.1	7.5	7.8	7.2	7.6
Hungary	6.8	6.5	6.4	6.9	6.7
Poland	6.6	6.3	6.4	6.5	6.3
Romania	5.2	5.6	5.7	5.2	5.6
Slovakia	8.1	6.9	7.1	6.7	6.7
Ukraine	7.44	7.5	7.1	7.0	7.7

(Source: Authors own research)

Table 9. Education: Government expenditure (% of GDP)

Country Name	2017	2018	2019	2020	2021
Bulgaria	4.5	4.1	4.1	…	4.1
Czech Republic	4.1	4.3	5.8	5.6	3.9
Hungary	4.7	4.6	3.6	4.7	4.7
Poland	4.9	4.9	4.8	4.6	4.6
Romania	3.1	3.1	3.1	3.9	3.1
Slovakia	4.2	4.6	4.6	…	3.9

Ukraine	5.9	5.9	5.0	5.4	5.4

(Source: Authors own research)

Table 10. Manufacturing value added as a proportion of GDP, per cent

Country Name	2016	2017	2018	2019	2020	2021
Bulgaria	13.8	13.7	13.8	13.4	12.3	12.3
Czech Republic	24.4	25.2	24.9	25.3	24.7	25.4
Hungary	19.8	19.6	19.2	18.6	18.1	18.7
Poland	17.8	17.3	17.5	17.4	16.6	17.2
Romania	19.9	20.0	19.7	18.7	17.6	17.7
Slovak Republic	19.0	18.7	20.1	21.0	18.5	19.0
Ukraine	12.1	12.3	12.1	11.8	11.5	11.6

(Source: Authors own research)

Table 11. Manufacturing value added per capita

Country Name	2016	2017	2018	2019	2020	2021
Bulgaria	1012	1036	1077	1100	970	1023
Czech Republic	4430	4803	4883	5100	4691	4960
Hungary	2602	2693	2774	2827	2619	2911
Poland	2307	2358	2516	2617	2431	2669
Romania	1872	2034	2108	2100	1910	2045
Slovak Republic	3156	3185	3555	3814	3201	3402
Ukraine	251	265	269	273	258	270

(Source: Authors own research)

We conclude that for Ukraine, the indicator's value decreased in 2020, but in 2021 it increased. However, it remained lower than in the pre-pandemic period. This is in line with trends in the world economy. Production in Ukraine was stagnant due to unstable demand, disruption of world trade, and tight domestic economic policies.

Compared to other Eastern European countries, the rate of decline in 2020 was the lowest, but its growth in 2021 is also among the lowest (Figure 2). Thus, in 2021, production activity increased, but only Poland and Hungary reached the level of 2019. Consequently, the recovery remains incomplete and uneven.

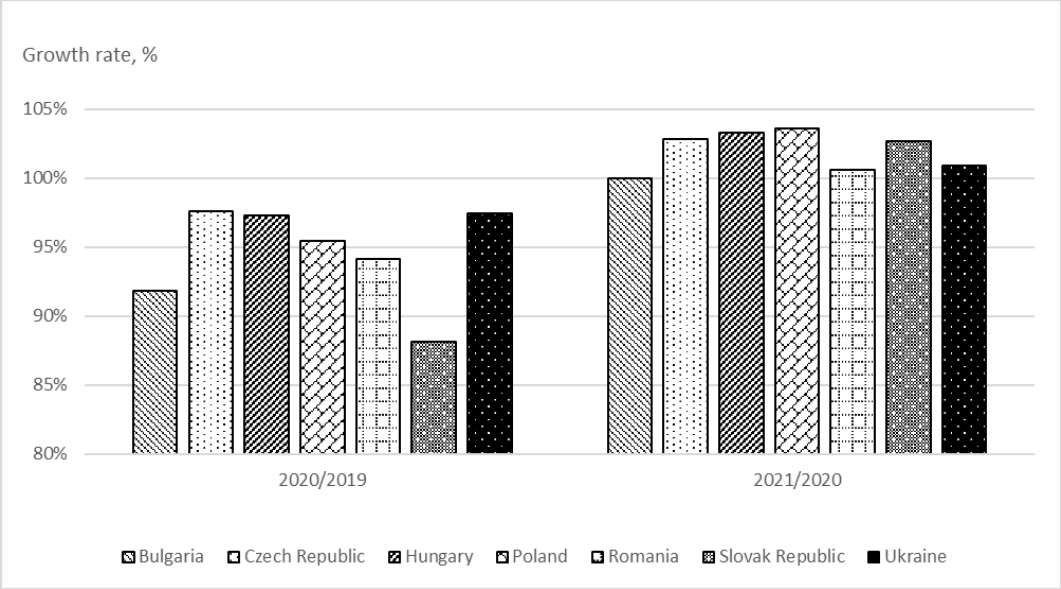

Figure 2. Countries' manufacturing value-added growth rate as a proportion of GDP during the pandemic

(Source: Authors own research)

Table 11 pictures that appropriate indicator values in Ukraine were significantly lower than in the EU countries. Still, the rate of decline in 2020 was also lower than in other Eastern European countries (Figure 3). This also confirms the thesis that countries with more developed economies have suffered more from the effects of the pandemic, but economic recovery in these countries is faster.

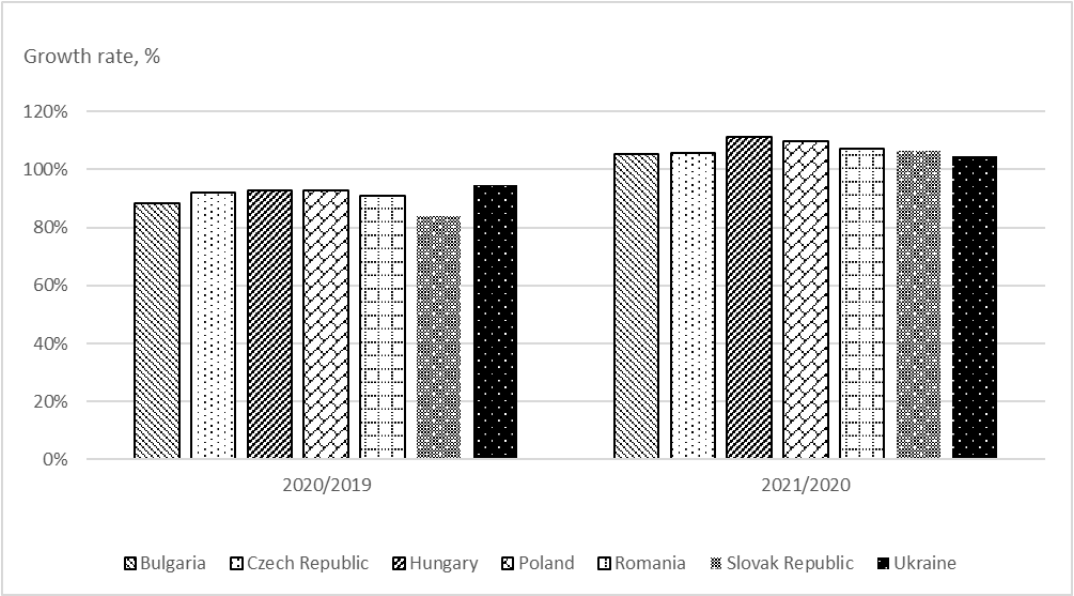

Figure 3. Countries' manufacturing value-added per capita growth rate in the pandemic period

(Source: Authors own research)

The portion of workers involved in manufacturing is lower in Ukraine than in other Eastern European countries (Table 12). This is also one of the reasons for the small values of indicators shown in Table 8. Although this indicator's value increased in 2020 and 2021, it was not due to an increase in the number of employees but rather due to the reduction in the number of employees in other industries was more significant than in industry, in particular, in the field of services, and tourism.

Table 12. Manufacturing employment as a proportion of total employment, per cent

Country Name	2016	2017	2018	2019	2020	2021
Bulgaria	19.5	19.1	19.0	18.8	18.5	18.6
Czech Republic	27.8	27.9	27.6	27.4	26.7	26.1
Hungary	21.7	22.4	22.5	22.1	21.6	21.2
Poland	20.2	20.8	21.0	20.6	19.9	19.4
Romania	18.9	19.2	19.3	18.9	18.1	19.7
Slovak Republic	24.5	26.4	24.5	24.6	25.0	24.9
Ukraine	15.3	15.1	14.8	14.8	14.8	15.4

(Source: Authors own research)

Achieving a high level of SDG9 largely depends on the transition to manufacturing high-tech products. Medium- and high-tech products predominate in the industry in industrialised countries. As of 2018, the share of medium- and high-tech production in developed countries was 49.0%. Despite the decline in the production of such products in early 2020, in the fourth quarter of 2020, these industries grew by 4 % compared to the same period in 2019. This growth has been the growing demand for computers and other electronic gadgets due to the global shift to distance learning and e-business development. Data on high-technology exports are presented in Table 13 and Table 14.

Table 13. High-technology exports (current billion US$)

Country Name	2016	2017	2018	2019	2020
Bulgaria	1.367	1.682	2.011	2.099	2.154
Czech Republic	24.690	29.448	36.023	37.657	39.603
Hungary	15.879	16.896	18.039	18.427	18.156
Poland	16.886	18.836	21.761	19.829	19.967
Romania	5.254	5.559	6.637	6.994	6.985
Slovak Republic	7.475	8.813	8.967	8.048	7.860
Ukraine	1.123	1.214	1.213	1.166	1.176

(Source: Authors own research)

Table 14. High-technology exports (% of GDP$)

Country Name	2016	2017	2018	2019	2020
Bulgaria	2.53	2.84	3.03	3.05	3.08
Czech Republic	12.58	13.47	14.47	14.91	16.14
Hungary	12.34	11.80	11.23	11.27	11.65
Poland	3.57	3.58	3.70	3.32	3.35
Romania	2.79	2.63	2.75	2.80	2.81
Slovak Republic	1.25	1.27	1.15	1.11	1.12
Ukraine	8.01	7.86	6.85	5.23	5.05

(Source: Authors own research)

Ukraine's economy remains raw material-oriented. The country sells products with a low level of processing abroad. These are mainly iron ore, agricultural products, and metallurgical semi-finished products. According to the SSSU (State Statistics, 2023) , the portion of exports in GDP has been about 50% for many years. At the same time, Ukraine lags far behind other Eastern European countries in exports of high-tech products. Although for Ukraine until 2019, there was a declining trend of change in this indicator, in 2020, the volume of its exports increased by 10,124 million USD. Also, an increase occurred in Poland, Bulgaria, and the Czech

Republic. It should be noted that Poland and the Czech Republic are the largest exporters of computer equipment to Ukraine.

As seen in Figure 4, Ukraine is second only to Bulgaria and Poland regarding production growth and Hungary and Slovakia regarding certain kinds of products. This indicates positive changes according to the relevant indicator in Ukraine. One of the sub-goals of SDG9 is to increase the cost of research, in particular, to improve industrial sectors' technological attributions. The importance of investing in research and development, in particular, is confirmed by the rapid response of the world scientific community to the pandemic, which led to the rapid growth of vaccines against COVID-19 and demonstrated the crucial role of science and innovation in unexpected crises.

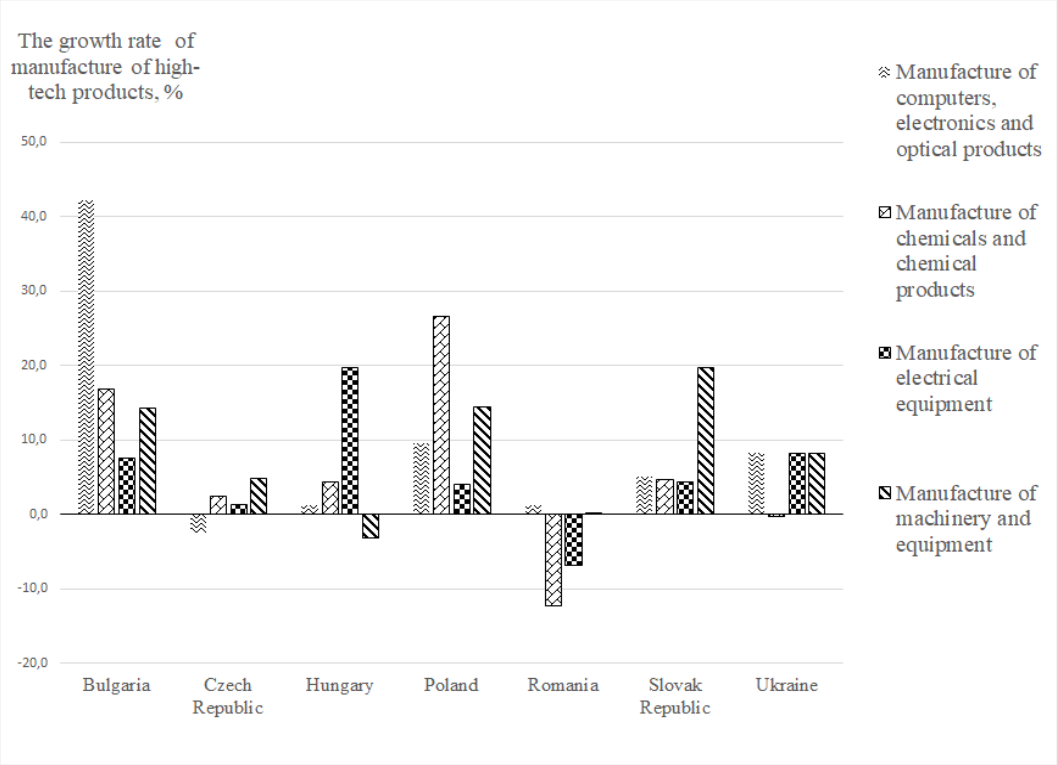

Figure 4. The growth rate of manufacture of high-tech products in the fourth quarter of 2021

(Source: Authors own research)

As the above data shows, Ukraine has one of the lowest active mobile broadband subscriptions per 100 inhabitants among Eastern European countries. Still, in 2020 it had the highest growth rate of this indicator compared to 2019 (Figure 5).

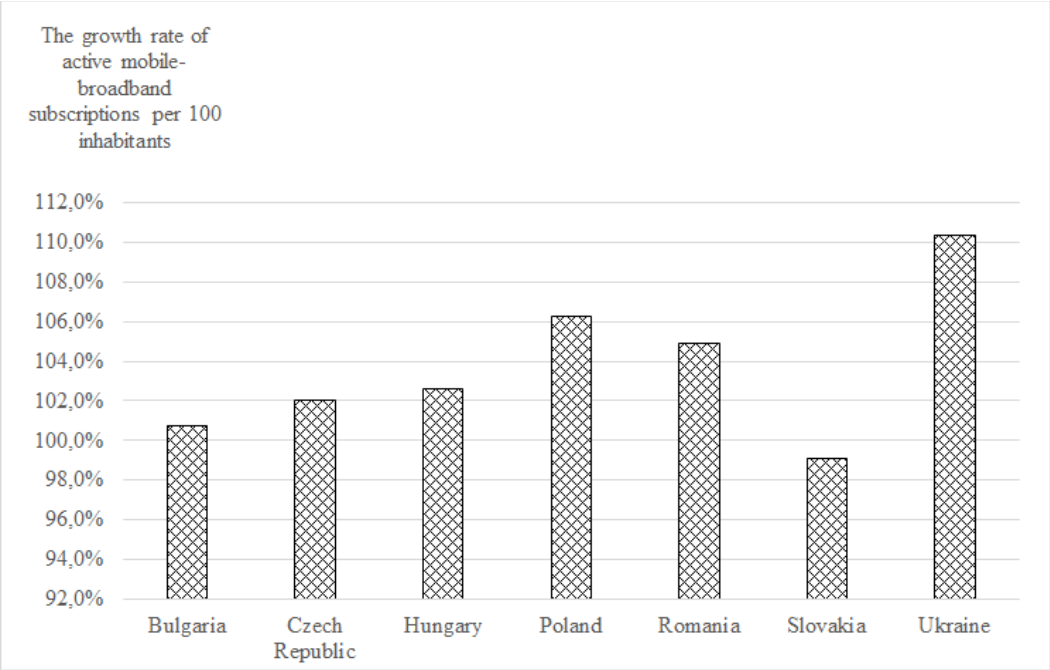

Figure 5. The growth rate of mobile-broadband subscriptions per 100 inhabitants in 2020

(Source: Authors own research)

A similar situation occurred for the indicator of internet users: in 2020, Ukraine exceeded only Bulgaria. At the same time, the growth rate of the indicator in 2020 was one of the highest: Ukraine was second only to Slovakia (Place Figure 6).

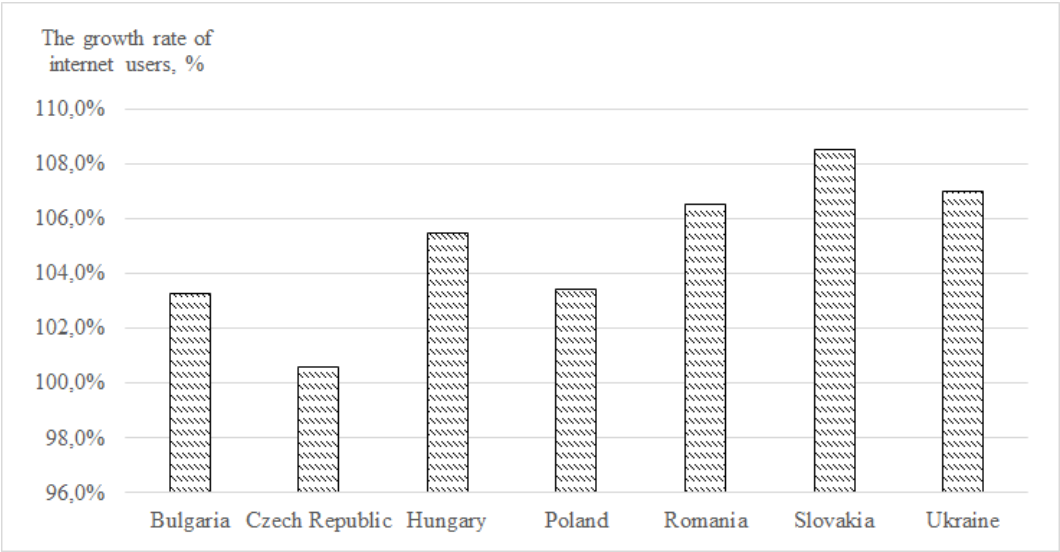

Figure 6. The growth rate of Internet users in 2020

(Source: Authors own research)

According to the study's findings, effective management practices have enabled Ukraine to make gradual progress towards achieving the Sustainable Development Goals (SDGs), notably SDG8 (Decent Work and Economic Growth) and SDG9 (Industry, Innovation, and Infrastructure). The management of the negative impact of the COVID-19 pandemic on the pace of achieving these goals in Ukraine and other selected Eastern European countries is evident in the deviation of relevant indicators from their baseline values and the trajectory

of the pre-pandemic period. In response to this, the State Program of Economic Recovery from Covid-19 2020-2022 was developed and has been periodically revised, showcasing proactive management in adapting strategies to meet emerging challenges. The implementation of the planned measures within this program demonstrates effective crisis management and resilience building, leading to improved results in 2021. Despite these efforts, the management findings also indicate that the results, while improved, remain insufficient for the complete achievement of the targeted sustainable development goals. This conclusion aligns with the analysis presented in the Sustainable Development Report (2022), emphasizing the critical role of continuous management evaluation, strategy adjustment, and implementation effectiveness in overcoming the setbacks caused by the pandemic and advancing towards the SDGs. The situation underscores the importance of strategic management in navigating through crises and reinforcing commitments to sustainable development goals amidst global challenges.

CONCLUSION

The UN Sustainable Development Goals (SDGs), adopted in September 2015, represent humanity's commitment to achieving significant milestones in global development through effective management strategies. Even before the COVID-19 pandemic, deviations from the trajectory toward these goals were noted, highlighting challenges in management across various sectors such as social guarantees, health care system organization, economic development, climate change, and environmental degradation. The pandemic underscored these issues, making the management of its impact on ach

Lieving the SDGs a critical area of study. The full extent of the consequences remains challenging to assess, complicated by ongoing developments and the potential for disease resurgence, as evidenced by the significant increase in COVID-19 cases in Shanghai in February 2022, which led to a stringent two-month lockdown affecting business activities and complicating management efforts.

The management of statistical analysis has been further complicated by the pandemic's impact on the activities of statistical agencies in some countries. In our study, we focused on the management of achieving SDG8 (Decent Work and Economic Growth) and SDG9 (Industry, Innovation, and Infrastructure) in Ukraine. This analysis was conducted using data from the State Statistics Service of Ukraine, Eurostat, the International Labour Organization, and other data portals, reflecting the relevant indicators. To manage a comprehensive assessment of progress toward the SDGs, we compared Ukraine's indicators with those of other Eastern European countries within the EU. The findings revealed that Ukraine generally displayed lower indicator values compared to EU countries, indicating challenges in managing economic and industrial development effectively.

The management implications of the COVID-19 pandemic are evident in the hindered progress toward meeting the targets for all countries, leading to declining planned indicator values for the considered goals and, in some instances, negative trends. However, it was managed that, for many indicators, the rate of decline in 2020 for Ukraine was lower than that of Eastern European EU member states. Our managed analysis of the data available for 2021 showed a gradual recovery of positive dynamics for most studied indicators, suggesting effective management in mitigating the pandemic's impacts.

The outcomes of this study contribute to the broader management analysis of SDG achievement levels conducted by Ukraine's state authorities on the national set of indicators. They help identify weaknesses and negative trends in goal achievement, underlining the importance of strategic management in navigating the challenges posed by the COVID-19 pandemic and steering toward the successful realization of the SDGs. This emphasizes the critical role of management in adapting to unforeseen challenges and ensuring the continuity of progress toward sustainable global development.

REFERENCES

Abdool Karim, S. S., Kelemu, S. and Baxter, C., (2021) COVID-19 in Africa: Catalyzing change for sustainable development, PLoS Med, Vol. 18(11), paper e1003869, https://doi.org/10.1371/journal.pmed.1003869

Asia-Pacific Countries with Special Needs Development Report 2022: Financing a Sustainable Recovery from COVID-19 and Beyond, https://cutt.ly/CJXnEvd, [Accessed: 04-May-2023]

Bochko O.Yu, Maletska O.I, Tsitska N.E and Kapral O.R (2022). Paradigm of a Country Competitiveness Under Conditions of Digital Economy. Review of Economics and Finance. Vol. 20. https://doi.org/10.55365/1923.x2022.20.65

Bwire, G., Ario, A. R., Eyu, P. et al. (2022) The COVID-19 pandemic in the African continent. BMC Med., Vol. 20, paper 167, https://doi.org/10.1186/s12916-022-02367-4

Dadabada, P., I (2022) mpact of COVID-19 on Society from Lens of Sustainable Development Goals, The Empirical Economics Letters, Vol. 20(9) pp 1659-1677, https://cutt.ly/VJL205T, [Accessed: 05-May-2023]

DataBank. World Development Indicators, https://cutt.ly/8J4o4m5, [Accessed: 05-May-2023]

Development of a number of Coronavirus cases: Shanghai, China 2022, https://cutt.ly/iKiJgFv [Accessed: 22-April-2023]

Ekwebelem, O. C., Ofielu E. S., Nnorom-Dike O. V. et al., (2021) Threats of COVID-19 to Achieving United Nations Sustainable Development Goals in Africa, American Journal of Tropical Medicine and Hygiene, Vol. 104, Iss. 2, pp 457–460, https://doi.org/10.4269/ajtmh.20-1489

Eurostat Statistics Explained (2023). SDG 8 – Decent work and economic growth, 2022, https://cutt.ly/oJ7KPnl, [Accessed: 05-May-2023]

Fagbemi, F., (2021) COVID-19 and Sustainable Development Goals (SDGs): An Appraisal of the Emanating Effects in Nigeria, Research in Globalization, Vol. 3, paper 100047, https://doi.org/10.1016/j.resglo.2021.10004

ILOStat. (2023) Data catalogue, https://ilostat.ilo.org/data/#, [Accessed: 05-May-2023]

Industrial Analytics Platform, https://cutt.ly/7JClkJH, [Accessed: 03-May-2023]

Jam, F. A., Sheikh, R. A., Iqbal, H., Zaidi, B. H., Anis, Y., & Muzaffar, M. (2011). Combined effects of perception of politics and political skill on employee job outcomes. African Journal of Business Management, 5(23), 9896-9904.

Jam, F., Donia, M., Raja, U., & Ling, C. (2017). A time-lagged study on the moderating role of overall satisfaction in perceived politics: Job outcomes relationships. Journal of Management & Organization, 23(3), 321-336. doi:10.1017/jmo.2016.13

Kuzior, A., Kostenko, A., Sotnyk, I., Chortok, Y., Tuliakov, O., & Podmanicka, M. (2023). Socioeconomic sustainability and the solidarity economy formation under the war conditions in ukraine. Financial and Credit Activity Problems of Theory and Practice, 5(52), 256–267. https://doi.org/10.55643/fcaptp.5.52.2023.4132

Long, G., (2015) The idea of universality in the sustainable development goals. Ethics & International Affairs, Vol. 29, Iss. 2, pp 203–222, https://doi.org/10.1017/S0892679415000076

Moyer, J., Verhagen, W., Mapes, B. el al., (2022) How many people is the COVID-19 pandemic pushing into poverty? A long-term forecast to 2050 with alternative scenarios, PLoS ONE. Vol. 17, paper e0270846. https://doi.org/10.1371/journal.pone.0270846

Odey, O. G., Alawad, A. G. A., Atieno, O. S., Carew-Bayoh, E. O., Fatuma, E., Ogunkola, I. O. and Lucero-Prisno III, D. O., (2021) COVID-19 pandemic: impacts on the achievements of Sustainable Development Goals in Africa, Pan African Medical Journal, Vol. 38, paper 251, https://doi.org/10.11604/pamj.2021.38.251.27065

Olaomo, G., Folarin, O., Obisesan, O. and Olayidem O. E., (2021) Impacts of COVID-19 on sustainable development in Africa, African Journal of Sustainable Development, Vol. 11, No. 1, pp 139-148, https://cutt.ly/RJLFlru [Accessed: 03-May-2023]

SDG Indicators. (2023) A global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development, https://cutt.ly/JKiJzDl, [Accessed: 02-May-2023]

SDG Indicators. Metadata repository, https://unstats.un.org/sdgs/metadata/, [Accessed: 03-May-2023]

State Statistics Service of Ukraine (2023), http://www.ukrstat.gov.ua/, [Accessed: 03-May-2023]

Suriyankietkaew, S. and Nimsai, S., (2021) COVID-19 Impacts and Sustainability Strategies for Regional Recovery in Southeast Asia: Challenges and Opportunities, Sustainability, Vol. 13, paper 8907, https://doi.org/10.3390/su13168907

Sustainable Development Goals: Ukraine (2017). 2017 National Baseline Report, https://cutt.ly/qJKEr8F , [Accessed: 02-May-2023]

Shahbaz, M., Hye, Q. M. A., Tiwari, A. K., & Leitão, N. C. (2013). Economic growth, energy consumption, financial development, international trade and CO2 emissions in Indonesia. Renewable and sustainable energy reviews, 25, 109-121.

Sustainable development in the European Union. Monitoring report on progress towards the SDGs in an EU context 2022, Publications Office of the European Union, Luxembourg, https://cutt.ly/eJ4U0Uf, [Accessed: 05-May-2023]

Sustainable Development Report. Country Profiles 2022, https://cutt.ly/vJ4dIQG, [Accessed: 05-May-2023]

The Sustainable Development Goals Report 2021, https://cutt.ly/QJ6o6bM, [Accessed: 05-May-2023]

The Sustainable Development Goals Report 2022, https://cutt.ly/vBAbPks, [Accessed: 05-May-2023]

Tiwari, A. K., Shahbaz, M., & Hye, Q. M. A. (2013). The environmental Kuznets curve and the role of coal consumption in India: cointegration and causality analysis in an open economy. Renewable and Sustainable Energy Reviews, 18, 519-527.

Sustainable Development Goals: Ukraine (2023). Voluntary National Review, https://cutt.ly/Z6tgZvg , [Accessed: 02-May-2023]

TheGlobalEconomy.com, https://cutt.ly/aJCkfFr, [Accessed: 03-May-2023]

UNIDO Statistics Data Portal. Monitoring the SDG9, https://stat.unido.org/SDG, [Accessed: 03-May-2023]

United Nations. Department of Economic and Social Affairs. Statistics Division, https://unstats.un.org/home/, [Accessed: 05-May-2023]

Voza, D., Vukovic, M. and Velickovic, M., (2021) Analysis of impact of COVID-19 pandemic on sustainable development goals, Proceedings of International May Conference on Strategic Management (IMKSM21), Bor, Serbia. vol. XVII(1), May 28 – 30, https://cutt.ly/GJL2ujX, [Accessed: 03-May-2023]

Waheed, M., & Jam, F. A. (2010). Teacher's intention to accept online education: Extended TAM model. Interdisciplinary Journal of Contemporary Research in Business, 2(5), 330-344.
WHO Coronavirus (COVID-19) Dashboard, https://covid19.who.int/ , [Accessed: 07-May-2023]
World Bank. World Bank list of economies 2021-22, https://cutt.ly/Y5auSmS, [Accessed: 05-May-2023]