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Competitive position of the European Union member states with regard to socio-economic development according to the Human Development Index

Abstract. The aim of the study was to analyse the competitiveness of European countries among themselves in terms of socio-economic development. 27 countries of the European Union were included in the analysis. Real gross domestic product per capita was selected for analysis as the main indicator of the economic development of the country. As the main indicator of social development – the aggregate index of human development. To determine the level of competitiveness of each country, a two-dimensional matrix was used, which was based on the calculation of integral indicators of real gross domestic product per capita and the Human Development Index in dynamics for the period

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2013-2022. The competitiveness study was able to develop nine quadrants of a two-dimensional matrix, each describing the competitive position of a European country. Countries such as Germany, France, and Italy, although they had high absolute performance both in 2013 and in 2023, but the dynamics of improvement of such performance is much lower compared to the rest of European countries. Some countries have better development of economic indicators than social indicators in the dynamics, such as Hungary and Bulgaria. The only country with predominant rates of social development over economic development is Luxembourg. The other 16 countries of the European Union occupy medium positions of competitiveness, which indicates their gradual development with low rates. Croatia, Lithuania, Poland, Cyprus, and Malta are sustainable competitive countries that, during 2013-2023, most efficiently utilised existing resources and potential for both social and economic development. The results obtained will be useful for professionals developing national competitive strategies and programmes, as the results of the analysis provided a 10-year view of the sustainable competitiveness of each European country

Keywords: two-dimensional matrix; integral indicator; quality of life; dynamics of change; sustainable growth

INTRODUCTION

The topic of a country's competitiveness is one of the most discussed topics in the world economy. It is connected with the international division of labour, globalisation. It is important for countries to identify the main criteria, thanks to which it is possible to become leaders in a certain region. Since the times of classical economics, there has been a view that it is the economic growth of a country that acts as the focus for researchers and the government of each country (Xu & Li, 2020). Other factors also include: the financial capability of the country, industrialisation aspects, technological development, international trade, and human capital (Rahim *et al*., 2021). Emphasising the importance of a country's competitiveness on the path to development in modern environment, governments of different countries are increasingly focusing on the human component of development potential. In the 21st century, with the globalisation and digitalisation of society, the development of knowledge economy and networks, more and more researchers also pay attention specifically to the development of a country's human resources as a key tool on the way to economic development of a country (Han & Lee, 2020).

By exploring social capital as a factor in the development of a country, H.M. Pylypenko *et al*. (2023) found that in the late twentieth century, many of the countries developed under the idea of integration to achieve greater success and capacity building through joint efforts in the international market in terms of economic development. One example of regional integration is the creation of the EU. But, after already ten years, the trends of world development have changed dramatically. In the process of scientific and technological development, countries began to gradually reduce their dependence on the markets of other countries (Spytska, 2023b). The overwhelming majority of investments started to be concentrated inside their borders in the development of human capital. EU countries are no exception to this process. As a consequence, this has a negative consequence in the form of development imbalances between countries. This, in turn, affects the socio-economic development of the EU on the international market. It is of interest for the economic stability and cohesion of the EU countries to assess to what extent the disparity of socio-economic development increases or decreases through the human capital development of the EU countries in pursuit of improved competitiveness.

Other researchers have repeatedly analysed the development of human capital and its impact on the development of countries. For example, in a statistical analysis of the role of human capital and natural resources for economic development, O. Zallé (2019) concluded that the theory about the development of a country's economy through natural resources is correct, but it is important to realise that natural resources can both directly and indirectly affect economic performance. Just the indirect effect is shown through the influence of human capital on them. Analysing the main indicators affecting the competitiveness of European countries, M. Simionescu *et al*. (2021) determined that changes in the gross domestic product (GDP) of a country are explained by two indicators: physical capital and human capital. Consequently, it is the human capital that plays one of the key roles in the development of the economic welfare of a country through skills and knowledge. K. Nuralina *et al*. (2023), in studying the change in the socio-economic level of 59 countries, took as a basis a composite index of the country's development consisting of an index of social, digital, economic, and environmental development. As a result, the researchers were able to establish that the highest correlation exists between economic and social indicators of a country's development.

Analysing the socio-economic development of EU countries, E. Pelinescu *et al*. (2019), as an indicator of human development, took the number of years of schooling in development and innovation as a basis. As a result of the analysis, Latvia, Lithuania, Sweden, and Romania had the maximum indicators. During a study of the long-term effects of human capital on the development of countries in Europe, C. Diebolt & R. Hippe (2019) focused the study on a time span, namely from 1850 to 2010. The researchers concluded that it is human capital that is the most significant historical determinant affecting the economic development of a country and the determinant of the current innovation and economic development of European countries. The effects of a country's human potential on its economy have a long-term effect, providing incentives for European governments to invest in the development of human capital (Dykha *et al*., 2024).

The problem with previous studies is that balancing the economic and social development of a country is important. Therefore, it is necessary to identify which countries have managed to find a balance in such development and which EU member states still need to put more resources

and efforts on a certain aspect of socio-economic development in order to improve their competitive position in the market. The research gap lies in the fact that previous studies analysed the socio-economic development and competitiveness of a country using either one indicator in dynamics or a comprehensive indicator for one calendar year. The aim of the study was to determine the competitive position of EU member states based on analysing socio-economic development. In the course of the study, the following tasks were necessary to achieve the goal: analysis of the Human Development Index (HDI) of the EU member states; analysis of real GDP per capita of the EU member states; calculation of integral indicators of social and economic development of the analysed countries; identification of the most problematic areas of human development in the EU and development of recommendations for their improvement.

MATERIALS AND METHODS

As of 2024, the EU comprises 27 countries for which the analysis was conducted. The beginning of the analysis refers to 2013, as the last country, Croatia, joined the EU in 2013 (Čular & Grbeša, 2020). Secondary data from the report of the EU statistical service are used for the analysis (Real GDP per capita, 2024). The main economic indicator selected from the report is real GDP per capita, the dynamics of change of which is calculated according to the formula:

$$GR = \frac{P_c}{P_b} \times 100\% - 100\%, \quad (1)$$

where GR – growth rates; P_c – indicators of values of the current period; P_b – indicators of values of the base period. Then the average value of the dynamics of countries by the growth rate of real GDP per capita was determined by the formula:

$$GR_{av} = \frac{1}{n} \sum_{i=1} n\ GRGDP_i = \frac{P_c}{P_b} \times 100\% - 100\%, \quad (2)$$

where GR_{av} – growth rate of real GDP per capita; n – number of countries; $GRGDP_i$ – growth rate of real GDP per capita in i-country. The calculation of this indicator was necessary in order to group countries. The distribution of countries into development groups on the basis of real GDP per capita was based on the following criteria. A country was considered to be ahead of the curve if the indicator fell within the following range:

$$\frac{\Delta GDP_i}{\Delta GDP_{av}} \geq 1, \quad (3)$$

where ΔGDP_i – growth rate of real GDP per capita of the i-country EU; ΔGDP_{av} – average value of real GDP per capita of the EU countries, which has an above-average indicator. A country was catching up if its economic development indicator fell within the following range:

$$\Delta GDP_{av} < \Delta GDP_i < \Delta GDP_{abav}, \quad (4)$$

where ΔGDP_{abav} – average value of real GDP per capita of the EU countries, which has an above-average indicator. A country was considered to be lagging behind if its economic development indicator fell within the following range:

$$\frac{\Delta GDP_i}{\Delta GDP_{av}} < 1. \quad (5)$$

A country with an economic development indicator falling within the following range was considered to have a degenerating dynamic (6):

$$\Delta GDP_i < 0. \quad (6)$$

The second stage analysed the main indicator of social development – the HDI from the United Nations Development Programme (2014; 2024) reports in comparison. With the HDI index up to 0.55 the country has a low level of human development, with 0.55-0.7 – medium, with 0.7-0.8 – high, with 0.80-1 – very high (Dasic *et al*., 2020). The change in indicators was calculated using the absolute change formula (7):

$$\Delta HDI = HDI_{end} - HDI_{beg}, \quad (7)$$

where ΔHDI – absolute change in the HDI indicator; HDI_{end} – value in the final year of analysis; HDI_{beg} – value in the initial year of analysis. In the third stage, the integral indicators were calculated using the following formula:

$$CAGR = \left(\frac{P_1}{P_2}\right)^{\frac{1}{n}} - 1, \quad (8)$$

where $CAGR$ – integral indicator; P_1 – indicator in the last year of analysis; P_2 – indicator in the first year of analysis; n – distance in years between P_1 and P_2. One of the main aspects of determining the competitive position of a country in terms of development is its comparison with other countries (De Castro Placido & Hwang, 2019). Therefore, the calculation results were used to determine the threshold values for each indicator, thanks to which it was possible to construct a two-dimensional matrix and divide it into quadrants. Each of the quadrants characterised a certain level of sustainable competitiveness of a European country.

RESULTS

One of the main indices is the Country Competitiveness Index developed by the World Economic Forum. This index consists of 12 elements and determines a country's productivity and hence a country's competitiveness (Rajnoha & Lesnikova, 2022). Since its development in 2005, this index has become much broader than the previously universally used growth competitiveness index and calculates the level of competitiveness using a different method. The index focuses not only on the technological aspects of a country's national economic development but also as a function of GDP per capita (Mirghaderi & Mohit-Ghiri, 2019). In 2008, the index was revised to have constituent elements and began to include the following indicators: basic, enhanced performance, and innovation. The basic requirements include indicators such as development of institutions and infrastructure, economy and health system, and education system. Increased efficiency indicators constitute a set of indicators that indicate the development of the education sector and the efficiency of the labour market. Innovation indicators include the efficiency of innovation implementation in entrepreneurship and scientific and technical development. Based on such indicators, the level of competitiveness of a country is calculated (De Castro Placido & Hwang, 2019). But it has been proven by researchers that it is the labour productivity of a country that directly affects

economic development (Rajnoha & Lesnikova, 2022). Consequently, the subsequent analysis of EU countries' competitiveness with regard to socio-economic development was conducted in this study based on such a claim. That is, it is not the Country Competitiveness Index that is selected for analysis, but the aggregate of the integral indices of real GDP per capita and the integral HDI index.

Speaking about analysing the competitive position of a country in the EU, it is important to note that the analysis will be carried out in dynamics because not only the indicator for the last year of functioning of each country's economy is relevant, but also the sustainability of competitiveness. The term sustainability does not imply the preservation of a country's resources for future generations from an economic, environmental, and social point of view, but the successful development of a country in the long term (Younis & Chaudhary, 2019). That is, further mentioning the sustainable competitiveness of a country implies its progress over a long period of time, or, in other words, long-term sustainable development.

The economic system of each country does not function in isolation from the international system (Moshensky, 2024). This makes it necessary to analyse the competitiveness aspect in more detail. During the period of competitiveness and development, each country's economy has experienced both decline and growth, and has been influenced by external determinants (Stychynska, 2023). Comparing data on a country's competitive position over time can provide information on which countries are more successful in coping with change and implementing effective strategies for improvement and which countries are losing their position in the competitive market. The indicator is calculated as the ratio of real GDP to the average population in a given year (Real GDP per capita, 2024). Economic growth acts as an increase in a country's output of goods per capita in the long run, because as per capita income increases, consumption will also increase, and as a result, the welfare of society will increase (Runtunuwu, 2020). It is useful to pay attention to the growth rate of real GDP per capita, which is depicted in Figure 1.

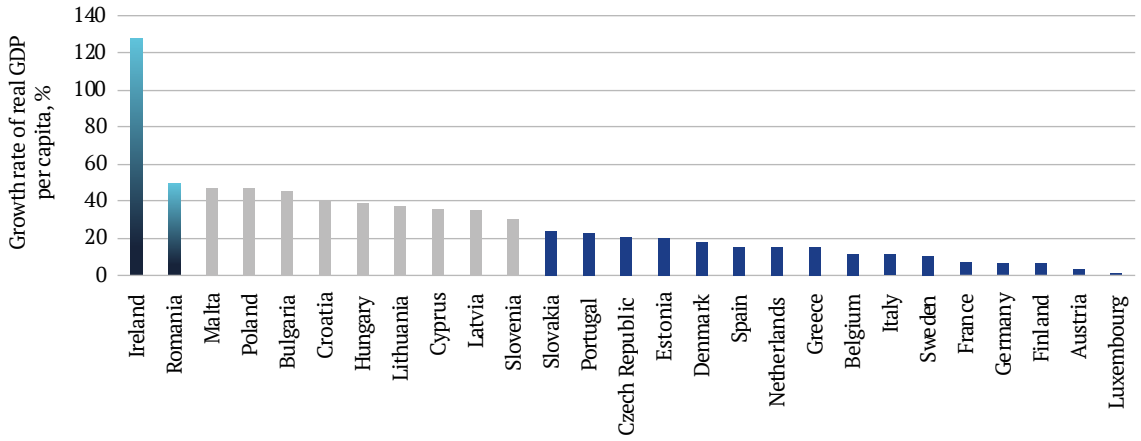

Figure 1. Growth rate of real GDP per capita of EU member states, 2013-2023
Note: green colour – leading countries; blue colour – catching-up countries; red colour – lagging countries
Source: created by the authors based on Real GDP per capita (2024)

As can be seen from Figure 1, the countries differ significantly in terms of potential, availability, and utilisation of resources. It can be concluded that the leaders by the analysed indicator are Ireland and Romania. All other countries are catching up or lagging behind. At the same time, there are much more lagging countries than catching-up countries. According to the percentage ratio of all European countries, 7% of countries are ahead in terms of growth rates of real GDP per capita, 33% of countries are catching up, and 60% of countries are lagging behind. No countries with degrading dynamics of economic development were found.

One of the indicators, the level of education, has been calculated since 2010 on the basis of the average number of years of education of adults aged 25 and over, as well as on the basis of the expected number of years of schooling of children. The standard of living started to be calculated on the basis of gross national income converted using purchasing power parity (Dasic *et al.*, 2020). In the new calculations, life expectancy characterises the long and healthy life of the population. Literacy rate and length of schooling characterise the awareness of the population, while purchasing power characterises a decent standard of living (Runtunuwu, 2020). The analysis of the four indicators has been changed from arithmetic mean calculation to multiplicative aggregation method since 2010. Consequently, the categorisation of countries into development groups has been revised. An analysis of the change in HDI for EU Member States in 2022 relative to 2013 is presented in Table 1.

Table 1. Change in HDI of EU member states in 2022 relative to 2013

Country	Absolute HDI score		Modification, Δ	Country	Absolute HDI score		Modification, Δ
	2013	2022			2013	2022	
Croatia	0.805	0.878	0.073	Slovenia	0.892	0.926	0.034
Malta	0.847	0.915	0.068	Ireland	0.916	0.95	0.034

Table 1. Continued

Country	Absolute HDI score		Modification, Δ	Country	Absolute HDI score		Modification, Δ
	2013	2022			2013	2022	
Latvia	0.814	0.879	0.065	Greece	0.86	0.893	0.033
Lithuania	0.818	0.879	0.061	Austria	0.895	0.926	0.031
Poland	0.821	0.881	0.06	Germany	0.92	0.95	0.03
Cyprus	0.848	0.907	0.059	Spain	0.885	0.911	0.026
Portugal	0.816	0.874	0.058	Italy	0.881	0.906	0.025
Estonia	0.846	0.899	0.053	Netherlands	0.921	0.946	0.025
Luxembourg	0.875	0.927	0.052	Czech Republic	0.873	0.895	0.022
Denmark	0.901	0.952	0.051	Hungary	0.831	0.851	0.020
Finland	0.892	0.942	0.05	France	0.893	0.91	0.017
Belgium	0.897	0.942	0.045	Bulgaria	0.782	0.799	0.017
Romania	0.786	0.827	0.041	Slovakia	0.84	0.855	0.015
Sweden	0.916	0.952	0.036				

Source: created by the authors based on United Nations Development Programme (2014; 2024)

From Table 1, it is worth concluding that of the European countries, in 2013, the HDI leaders were the Netherlands, Germany, and Ireland, and in 2022 the HDI leaders were Denmark, Sweden, and Germany. But these are absolute figures, while in dynamics, countries such as Croatia, Malta, Latvia, and Lithuania were more successful in improving HDI. The results in relation to Poland were unforeseen, as in 2013 the country was ranked 39th in the international HDI ranking, and in 2022, it increased its HDI score to 36th place, surpassing European countries such as Lithuania, Latvia, Croatia, and Portugal, which were previously ranked higher than Poland (United Nations Development Programme, 2014; 2024). However, thanks to a well-designed strategy and effective measures taken, the country was able to improve its social development indicator. France was of additional interest because, despite the fact that in 2013, the country ranked 20th in HDI with a score of 0.893, over the next 10 years it dropped to 28th place with a score of 0.91. Even though the indicator itself has improved, compared to other countries that have a higher rate of human capital development, France has significantly lowered its position in both the European and international rankings.

The competitive position of each EU member state is determined using a two-dimensional matrix of socio-economic development. For the vertical axis, the integral indicator of real GDP per capita is taken, and for the horizontal axis, the integral indicator of HDI is taken. Integral indicators were calculated for the period 2013 and 2022 for the HDI indicator and for the period 2013 and 2023 for the real GDP per capita indicator. The matrix thresholds were determined based on the results of the calculation of the integral indicators. For the integral indicator of real GDP per capita, the threshold values are as follows: the indicator above 3.09% – high growth, the indicator in the range of 1.44-3.09% inclusive – medium, and the indicator below 1.44% – low growth. Consequently, for the HDI integral indicator, the threshold values are as follows: the indicator above 0.0062 – high growth, the indicator in the range of 0.0037-0.0062 inclusive – medium, the indicator below 0.0037 – low growth (Table 2).

Table 2. Competitiveness matrix of EU member states

		Integral indicator of real GDP per capita		
		High	**Medium**	**Low**
HDI integral indicator	**Low**	Hungary, Bulgaria	Netherlands, Spain, Czech Republic, Slovakia	Germany, France, Italy
	Medium	Ireland, Romania	Denmark, Slovenia	Belgium, Greece, Finland, Sweden, Austria
	High	Croatia, Lithuania, Poland, Cyprus, Malta	Portugal, Estonia, Latvia	Luxembourg

Source: created by the authors based on United Nations Development Programme (2014; 2024); Real GDP per capita (2024)

In Table 2, the matrix thresholds are separated by quadrants. Consequently, as a result of the analysis, it was possible to establish nine quadrants that determine the level of socio-economic development of each analysed country. Analysing the matrix, it is worth concluding that the socially and economically stable countries include the countries in the upper right quadrant of the matrix: Lithuania, Poland, Cyprus, Malta, and Croatia. These are the countries that have the most sustainable competitiveness in the EU. Previously, the competitiveness of a country was measured by GDP, employment, government deficit and/or surplus, external debt, etc. But, in the current conditions of functioning of national economies, the concept of competitiveness goes beyond these indicators (Rajnoha & Lesnikova, 2022). The results obtained in the form of a competitiveness matrix confirm this. Of interest is the fact that the countries with the highest competitiveness do not have the highest GDP figures in the EU as of 2023. For example, Poland's GDP was EUR 0.75 trillion (sixth highest in the EU), Croatia's was EUR 0.08 trillion (twentieth highest

in the EU), Lithuania's was EUR 0.07 trillion (twenty-second most quantified in the EU), Cyprus – EUR 0.03 trillion (twenty-sixth most quantified in the EU), Malta – EUR 0.02 trillion (twenty-seventh most quantified in the EU) (Gross domestic product…, 2024).

Of interest are the countries that are not in the upper right quadrant and not in the lower left quadrant in the matrix in Table 2. That is, a clear division of countries can be seen, with catching-up and even more lagging countries in terms of competitiveness based on socio-economic development over the period 2013-2023. The countries with a socially developed but medium level of economic development are Portugal, Estonia, and Latvia. Countries with socially developed but economic problems include Luxembourg. Countries with a high level of economic development and a medium level of social development include Ireland and Romania. Countries with medium social development and economic problems include Belgium, Greece, Finland, Sweden, and Austria. Countries with social development problems and medium economic development include the Netherlands, Spain, the Czech Republic, and Slovakia. Countries with average living standards and economic development include Denmark and Slovenia. Economically developed countries but with social development problems include Hungary and Bulgaria.

Countries with economic and social development challenges include Germany, France, and Italy. As a result of the analysis, these countries are of particular interest as they are in the lead compared to other EU countries in terms of GDP as of 2023. For example, Germany ranks first in terms of quantitative GDP, with a GDP of EUR 4.12 trillion. France, ranking second in the EU, has a GDP figure of EUR 2.8 trillion. Italy, ranking third in the EU, has a GDP figure of EUR 2.09 trillion. This is many times higher than Malta, which was analysed to be in the group of highly competitive countries in the dynamics (Gross domestic product…, 2024).

It is important to note that the obtained competitiveness results indicate the development of the competitive position over 10 years for each country. Consequently, the absolute indicator can be high throughout the analysed period and not subject to significant changes, which defines a country in the square with a low rate of development. For example, Luxembourg's real GDP per capita in 2013 was EUR 83.32 thousand, and in 2023, it was EUR 82.4 thousand (Real GDP per capita, 2024). Luxembourg's HDI was 0.875 in 2013 and 0.927 in 2022. According to the ranking, the country was ranked 21st in the international list in 2013 and 20th in 2022 (United Nations Development Programme, 2014; 2024). Thus, the country, as a result of the analysis, is represented in the quadrant with a high level of social development but with a low level of economic development over the 10 years of analysis. Another example is Poland. The real GDP per capita in Poland in 2013 was EUR 10.3 thousand, and in 2023, it was EUR 14.75 thousand. Poland's HDI in 2013 was 0.821, and in 2022, it was 0.881. That is, in comparison, the difference in HDI change over 10 years for Poland and Luxembourg is not significant, while the difference in the change in real GDP per capita over the same period for the same countries is enormous. Also, for example, it is worth analysing the position of Denmark, as this country occupies the middle quadrant in the matrix. The real GDP per capita in Denmark was EUR 44.54 thousand in 2013 and EUR 52.51 thousand in 2023. Luxembourg's HDI was 0.9 in 2013 and 0.952 in 2022. The country was ranked 10th in the international list in 2013 and 5th in 202. Consequently, it can be noted that the country's position is not changing significantly, and Denmark is slowly developing in two directions at the same time, utilising its potential to the maximum.

For those countries whose integral HDI is much lower than the integral indicator of real GDP per capita, it can be concluded that the existing resources were not optimally distributed during the period under study. The development policy is aimed at a certain class of people in the country but not oriented towards the interests of the entire population. In countries where the integral HDI indicator is in the quadrant equal to the integral indicator of real GDP per capita, it is worth speaking about the harmony of existing resources in the country and the result of development. For those countries where the HDI integral indicator is much higher than the integral indicator of real GDP per capita, then it can be concluded that countries are utilising their potential in the best possible way (De Castro Placido & Hwang, 2019). According to the results of the integral indicators, it can be determined that it is Lithuania, Poland, Cyprus, Malta, and Croatia that are sustainably competitive countries.

Since the integral indicator of real GDP per capita is represented by a single indicator in dynamics, it does not require additional analysis. Another thing is the case with the integral indicator HDI, which is an aggregate indicator. It is worth considering the example of the leading countries in terms of the improvement of the main HDI indicators over the analysed period in dynamics. Lithuania has improved its HDI performance, which is evident in the improvement of the income indicator from 0.673 in 2013 to 0.715 in 2023, a percentage increase of 6.24%. For Poland, the income indicator increased from 0.666 in 2013 to 0.71 in 2022, a percentage increase of 6.6%. For Croatia, the income figure increased from 0.653 in 2013 to 0.763 in 2022, a percentage increase of 16.84%. For Cyprus, the income figure increased from 0.719 in 2013 to 0.771 in 2022, a percentage increase of 7.23%. For Malta, the income rate increased from 0.727 in 2013 to 0.778 in 2022, a percentage increase of 7.02% (United Nations Development Programme, 2014; 2024). The education indicator increased significantly for Lithuania by 6.8% compared to the 2013 value of 0.823. For Poland, the same indicator increased by 8.47% compared to the 2013 value of 0.779. For Croatia, the same indicator increased by 17.39% compared to the 2013 value of 0.690. For Cyprus, the same indicator increased by 18.41% compared to the 2013 value of 0.668. For Malta, the same indicator increased by 16.35% compared to the 2013 value of 0.691 (United Nations Development Programme, 2014; 2024).

Inequality-adjusted life expectancy improved marginally in countries with the most sustainable competitiveness. Namely, in Croatia, over the period 2013-2022, the index improved by 6 from 0.832 in 2013 to 0.882 in 2022. In Lithuania, over the same period, the index increased by 17.36% from 0.749 in 2013 to 0.879 in 2022. For Poland, over the same period, the index increased by 3.06% from 0.818 in 2013 to 0.843 in 2022. For Cyprus, over the same period, the index increased by 4.62% from 0.887 in 2013 to 0.928 in 2022. For Malta, over the same period, the index increased by 7.31% from 0.875 in 2013 to 0.939 in 2022 (United

Nations Development Programme, 2014; 2024). The results of the analysis show that in dynamic development, high competitiveness is observed in those countries that make the most efficient use of their resources over the years.

In the context of annually growing global competition between countries, those states that have been outsiders in the dynamics should take measures to improve. The main goal should be the formation of the country's human potential of high quality. For this purpose, educational standards for the population should be improved and revised. It is important to find and implement highly effective educational and scientific resources at different stages of the education of the population. Implementation should be designed in such a way that the requirements fully meet modern conditions. It is necessary to expand both the choice of professions and jobs through grants or scholarships for graduates of higher education institutions, as well as to develop a new approach to the formation of strategies, tactics, and operations to adapt the system of vocational education to the economic, social, and demographic situation in the country. Special attention should be paid to the creation of conditions that will initiate greater social responsibility of enterprises in terms of organising professional training of workers or improving their qualifications on the basis of tripartite interaction between the country, entrepreneurs, and workers. In order to most effectively implement such measures, it is necessary to improve legislation to support scientific research and innovation, as well as the commercialisation of scientific developments and the protection of intellectual property. Active introduction of lifelong learning into society, which will affect the knowledge of the population and increase HDI, which in turn will affect economic development and then the level of competitiveness of the country.

DISCUSSION

Competitiveness is an important indicator of the functioning of each country. This indicator should be based on both economic and social indicators. The competitiveness of any country is a rather relative concept, as it is not the absolute performance indicators that are of great interest, but those indicators that determine how well a country manages this performance compared to other countries. In this study, it was found that it is not reasonable to determine the competitive position of a country only by economic indicators, as shown by the results of the study. A single indicator, especially for one particular year, cannot show the real picture of changes in the country's position compared to its closest competitors over time. Similar conclusions were reached by T. Formánek (2019), who analysed the factors of economic growth in European countries. The scientist found that one of the main indicators of the economic development of the country is real GDP per capita. Similar conclusions were also reached by researchers R. Dědeček & V. Dudzich (2022), when they studied the GDP per capita as the main economic indicator of the country's development. As a result of the study, the researchers concluded that GDP per capita in purchasing power parity has limitations in the study of economic development because of its reduced ability to show the actual level of development. The researchers determined that GDP per capita does not account for income inequality in a country, hence overestimating the level of development of a country. This is also consistent with the results of this study, as it was concluded that analysing only real GDP per capita, even in dynamics, cannot show the level of development as an integral indicator.

Other researchers, analysing the level of competitiveness of countries' economies, paid attention exclusively to the indicators of social development and innovation. For example, researcher E.S. Hamid (2019), studying the Global Competitiveness Index in Asian countries, noted the positive impact of HDI on the level of competitiveness of countries. Since people act as one of the main determinants that determine the global competitiveness of a country, it is important to pay attention to this indicator. The explanation for this impact is as follows: a country's human resources shape economic growth, which in turn affects the country's increased competitiveness in the international arena. Similar conclusions were reached by A. Migała-Warchoł & M. Sobolewski (2020), who studied the socio-economic development of EU countries. The researchers found that non-economic indicators should also be taken into account when calculating the growth of each country. The competitiveness of a country is determined by the ability and skill to achieve high rates of economic growth and improvement of human capital. That is, human capital becomes a strategic resource of the country in the international arena in the struggle for a competitive position (Chornyi & Chorna, 2017). As a result of the HDI study and the assessment of a country's competitiveness on this indicator, W. Tunsi & H. Alidrisi (2023) concluded that HDI should be based on innovation. The researchers explain such results of the study by the fact that the indicator itself is not sufficient to analyse the development of a country. But HDI has a growing potential for additional changes in terms of technical measurements. Such measurements, according to the researchers, should be innovation whenever the aim is to compare countries. This statement is not consistent with the results of the study because innovation as an important indicator of a country's development was neglected during this paper, and the focus was on simultaneously analysing real GDP per capita as the main indicator of economic development and HDI as the main indicator of social development. The reasons for choosing these indicators are the impact of human capital on the country's economy through productivity. Based on these indicators, earlier studies have been conducted. E. Elistia & B.A. Syahzuni (2018), as a result of analysing the correlation between GDP and HDI, found that such correlation is strong and significant. Economic growth allows achieving a high level of human development; increasing the level of human development leads to increased opportunities for economic growth (Spytska, 2023a). That is, this indicator is complementary.

Based on the analysis of integral indicators real GDP per capita and HDI, this study developed a matrix of sustainable competitiveness of EU countries. As a result of the analysis, it is determined that those countries that have less sustainable competitiveness for 2013-2023 "lose their momentum" over time despite having good development indicators for 2023. The study found that the majority of countries developed as of 2023 fall into this category. Germany, France, and Italy are prime examples. In contrast, countries that do not have the highest GDP in the EU, such as Croatia, Poland, Lithuania, Cyprus, and Malta, are rapidly

developing in socio-economic terms. Consequently, they present a high level of competitiveness over time. It is important to note that this study was conducted in the time range of 2013-2023. According to the results of the study, it was determined that the best ratio of economic and social development was achieved by Poland, Lithuania, Cyprus, Malta, and Croatia. At the same time, these results were obtained by analysing the indicators in dynamics. Investigating the impact of human capital on the competitiveness of EU countries, E. Širá *et al*. (2020) concluded that the knowledge of the population forms the sustainable position of the country in the competitive environment. Consequently, this confirms the main idea of this study about ensuring a highly competitive position of the country in the long term, precisely through the development of human capital. The researchers also emphasised sustainable competitiveness. The analysis was carried out for 11 years of European countries' functioning, starting from 2007 to 2017. Based on the results of the calculations, the researchers identified the most competitive EU country – Sweden. As a result of this study, the country with the highest competitiveness was Croatia. It is important to note that the results of the obtained study do not reflect the full relevance of the situation of European countries compared to the research conducted in this article. This is due to the fact that at the time of the analysis, E. Širá *et al*. (2020) included 28 countries in the counts, including the UK. The study conducted in this article was based on 27 EU countries, which is relevant for the 2024 study year. The main conclusions can be drawn from the study of the competitiveness of European countries based on socio-economic development and the HDI index. Based on social and economic indicators, and dynamic changes in the development of countries, sustainable competitiveness is crucial, which is best demonstrated by Croatia, Lithuania, Poland, Cyprus, and Malta for 2013-2023.

CONCLUSIONS

As a result of the analysis, it has been established that in modern conditions of functioning, countries should pay attention to the indicator of competitiveness in comparison with other countries. In this case, the success of the country's development should be considered primarily through a set of economic and social indicators that directly affect its competitive position. The study analysed the socio-economic development of the EU countries for the period 2013-2023 and proposed an approach to determine the competitiveness of each country. This approach is based on analysing partial and integral indicators of economic and social development, assessing dynamic development based on integral indicators of social and economic growth, and determining the competitive position using a two-dimensional matrix. It was possible to determine not just the competitive position of each country in the EU but to investigate the sustainable competitiveness of the country in a dynamic calculation over the last 10 years of operation.

The main indicators for calculations were real GDP per capita as an economic indicator and HDI as the main social indicator. Initially, the growth rates of real GDP per capita in each European country were determined. It was possible to divide all EU countries into leading, catching-up, and lagging countries, where the best indicators were observed in Ireland and Romania and the worst – in Luxembourg and Austria. The absolute changes in HDI countries in 2022 compared to 2013 were then analysed separately. Such results showed that the largest absolute increases were observed in Croatia and Malta, and the smallest in Bulgaria and Slovakia. Since the results obtained for partial indicators were not appropriate for comparison, an integral index of similar indicators was calculated and a two-dimensional competitiveness matrix was constructed, which was based precisely on the integral indicators of socio-economic development of the countries. As a result of the analysis, it was determined that countries such as Poland, Lithuania, Cyprus, Malta, and Croatia have a steady increase in socio-economic development over the period 2013-2023, which makes them the most competitive countries. The least competitive in dynamic development are Germany, France, and Italy, despite high absolute values of both real GDP per capita and HDI as of 2023.

Hence, it can be concluded that countries with high absolute values in 2023 have lost their growth momentum over the 10 years of operation, while countries with low absolute values of real GDP per capita and HDI have increased their growth rate over the same period. The study analysed the change in HDI components of highly competitive countries and identified improvement measures for lagging countries based on improving the quality of human capital. A limitation of this study is the fact that HDI, although it groups countries by human development indicator, cannot include all indicators of a country's social development. Nor is the real GDP per capita a single absolute indicator of a country's economic development. It is important to conduct the next similar studies, but with improved methodology. Improvements should concern the introduction of multivariate optimisation of various economic and social indicators into the approach and calculations in order to increase the representativeness of the results obtained.

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CONFLICT OF INTEREST

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Конкурентна позиція країн-членів Європейського Союзу за рівнем соціально-економічного розвитку відповідно до Індексу людського розвитку

Анотація. Метою дослідження було проаналізувати конкурентоспроможність європейських країн між собою за рівнем соціально-економічного розвитку. До аналізу було включено 27 країн Європейського Союзу. Як основний показник економічного розвитку країни для аналізу було обрано реальний валовий внутрішній продукт на душу населення. Як основний показник соціального розвитку – агрегований індекс людського розвитку. Для визначення рівня конкурентоспроможності кожної країни використовувалася двовимірна матриця, в основу якої покладено розрахунок інтегральних показників реального валового внутрішнього продукту на душу населення та Індексу людського розвитку в динаміці за період 2013-2022 рр. Дослідження конкурентоспроможності дозволило розробити дев'ять квадрантів двовимірної матриці, кожен із яких описує конкурентну позицію європейської країни. Такі країни, як Німеччина, Франція та Італія, хоч і мали високі абсолютні показники як у 2013, так і в 2023 році, але динаміка покращення таких показників значно нижча порівняно з рештою європейських країн. Деякі країни в динаміці мають кращий розвиток економічних показників, ніж соціальних, як, наприклад, Угорщина та Болгарія. Єдиною країною, де темпи соціального розвитку переважають над темпами економічного розвитку, є Люксембург. Інші 16 країн Європейського Союзу займають середні позиції конкурентоспроможності, що свідчить про їх поступовий розвиток із низькими темпами. Хорватія, Литва, Польща, Кіпр та Мальта є країнами зі сталою конкурентоспроможністю, які протягом 2013-2023 років найбільш ефективно використовували наявні ресурси та потенціал як для соціального, так і для економічного розвитку. Отримані результати будуть корисними для фахівців, які розробляють національні конкурентні стратегії та програми, оскільки за результатами аналізу було отримано 10-річну картину сталої конкурентоспроможності кожної європейської країни

Ключові слова: двовимірна матриця; інтегральний показник; якість життя; динаміка змін; стале зростання