SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 204

INEQUALITIES IN THE SOCIAL DEVELOPMENT OF EUROPEAN COUNTRIES

Dorota MIŁEK[1*], Paulina NOWAK[2]

[1] Kielce University of Technology; dorothy@tu.kielce.pl, ORCID: 0000-0002-2358-4614
[2] Kielce University of Technology; pnowak@tu.kielce.pl, ORCID: 0000-0002-0461-8559
* Correspondence author

Purpose: Socio-economic inequalities are an inherent part of the functioning of societies. These inequalities primarily concern differences in income, material living conditions, education, and health. Despite progress in civilizational development, this issue persists, leading to increased societal discontent, which in turn results in uncontrolled migration, terrorism, and difficulties in ensuring energy security. The rejection of global inequality (both social and consequently political) has become one of the most important reasons for seeking ways to mitigate these unfavorable phenomena. Developmental issues threaten political stability, but above all, they weaken the dynamics of socio-economic development in countries. These considerations do not aspire to comprehensively address the issue of social inequalities worldwide but instead focus on selected aspects analyzing the asymmetry of social development. The aim of this research is to assess the differences in the level of social development in selected European countries in the years 2010 and 2022.
Methodology: For the assessment in question, a descriptive method was applied using the Human Development Index (HDI) and Gini coefficient indicators, Ward's method, and the Lorenz curve. These were used to analyze and evaluate the variations in the level of social development in selected European countries, along with determining their ranking positions. The HDI indicator allowed for capturing the distance that separates European countries in terms of social development (long and healthy life, knowledge, and a decent standard of living). Based on data obtained from HDI, the Gini coefficient enabled the evaluation of income distribution inequality in the studied countries, while cluster analysis helped identify similarities between countries concerning their level of social development.
Findings: The research results indicate that despite overall progress in social development, inequalities in the level of social development persist among the 32 European countries analyzed. The countries studied exhibit significant disparities in social development levels, despite the fact that nearly all of them belong to the group of nations with the highest levels of social development worldwide (with only Bulgaria holding the top position among countries with high social development). Widening asymmetries are even observed, as evidenced by Bulgaria's HDI indicator.
Research limitations/implications: Due to the still significant inequalities, there is a need to intensify efforts aimed at counteracting them, which could ultimately lead to an improvement in the quality of life.

Originality/value: The analysis is crucial for assessing the gap between European countries in terms of social development levels, in the context of global efforts aimed at improving societal well-being and promoting social inclusion.
Keywords: human development, social inequality, European countries, HDI index, Ward's method.
Category of the paper: research paper.

1. Introduction and review of the literature

Socio-economic development and its measurement are crucial issues for the functioning of economies at local, regional, national, and global levels. Economic aspects play a leading role in such analyses. However, the importance of the social dimension should not be overlooked (Szewczuk, 2011, p. 13). In both perspectives, the focus is on change, that is, the process of transitioning from a particular form or state to a more complex, developed, and advanced one, with the changes resulting from events occurring in a given area and having a long-lasting character (Parysek, 2018, p. 38). It is important to emphasize that this refers to a process of significant and irreversible transformations in social structures. These transformations have a specific direction and are determined by specific demographic, environmental, economic-social, and political factors. Development, as a directed and long-term sequence of positive changes in systems, encompasses both quantitative and qualitative transformations, resulting from a series of changing combinations of factors over time. Key factors include human, social, material, financial capital, and innovations. Global socio-economic conditions, or megatrends, such as globalization, economic integration, postmodernization, and systemic and economic transformation, force modifications to the described developmental conditions, and according to P. Churski, even lead to a redefinition of these factors. The scope of this redefinition, according to him, is broad and can represent both opportunities and challenges for the development policies of countries (Churski et al., 2018).

As mentioned, development factors are continually evolving. In the 1970s, the concept of social development emerged, emphasizing the social dimension of economic growth as a result of criticism of the previous approach to development, which focused primarily on the growth of production of final goods and services. Consequently, contemporary social development is considered in relation to the process of transforming social systems over time, while economic growth should be viewed as a condition for improving overall social well-being. In other words, economic development cannot be discussed separately from social development (Stanny, 2012, pp. 95-96). The United Nations Development Programme (UNDP) defines social development as a process of expanding human choices, through which individuals gain long and healthy lives, acquire knowledge, and achieve a satisfactory standard of living (UNDP, 1990, p. 10). Although the overall effect of development should be distinctly positive, its various components

may constitute separate elements of analysis and, importantly, may change with uneven intensity and direction (Gorzelak, 1989, p. 15). Social transformations, therefore, proceed with varying dynamics in different countries, leading to a diverse level of social development on an international scale. It is important to note that overall social well-being is highly differentiated in the contemporary world (Iwaszczuk et al., 2016; Dziembała, 2023, p. 20). The issue of social inequalities is becoming increasingly serious, given global progress, and is exacerbated by the aforementioned megatrends in the world economy. Key aspects differentiating well-being include income and wealth, opportunities for personal development, participation in cultural and political life, and access to information, which also present significant challenges (Piketty, 2014). Consequently, social inequalities are framed as unequal access or unequal opportunities to socially valued goods, which are inaccessible due to membership in certain social groups or due to specific social positions (Sztompka, 2020, p. 200). A. Sen asserts that inequality should have a defined dimension to ensure relative well-being for as many individuals as possible, especially since people differ in physical and mental condition, intellectual abilities, gender, and various other factors. "What should equality address?" — this is the question, following A. Sen, that should be posed when discussing the issue of inequality (Sen, 2000, p. 7). The referenced economist clarifies that the focus is on equality of freedom to achieve individual benefits, i.e., actual achievements. He emphasizes that it is not only about defining equality but also about the criteria and areas of its measurement, which include: income, wealth, primary goods, and capabilities (Sen, 2000, p. 154). While it would be utopian to believe in a world without social inequalities, the issue certainly requires ongoing inquiry and actions to mitigate the consequences of stark social disparities, as they significantly affect the lives and functioning of individuals (Wilkinson, Pickett, 2010; Wiatrowski, 2018).

This article addresses fundamental issues related to the essence of social development in the context of deriving benefits from it by the general population or the lack thereof. A key question is the scale of social inequalities in Europe, as it could serve as a starting point for policymakers to decide on measures to address these inequalities. The aim of the research is to assess the variations in the level of social development in selected European countries for the years 2010 and 2022. Thirty-two European countries were arbitrarily chosen for the analysis, including all EU member states and the following economically closely linked countries: the United Kingdom, Switzerland, Norway, Liechtenstein, and Iceland.

The complexity of the issue of social development means that various indicators can be applied to study its level. The literature indicates that several indicators are particularly noteworthy, such as those related to life expectancy or, more broadly, the effectiveness of the health system, the level of urbanization, and the level of education. A commonly used synthetic measure of social development is the Human Development Index (HDI), adopted by the United Nations and calculated annually for all countries worldwide (UNDP, 2024). The HDI presents the achievements of countries according to three dimensions: knowledge, long and healthy life, and a decent standard of living. Health, education, and income thus represent three facets of

human life on which the level of social development in countries is assessed. It is important to emphasize that the HDI has become a widely accepted measure of development due to its focus on fulfilling basic human needs, which is not guaranteed by the income-focused GDP measure. Economic growth does not automatically translate into greater access to food, clean water, housing, healthcare, education, or social security. Since 1990, the UNDP has published reports on social development, presenting information on the social development of countries based on the HDI and conveying the message that the ultimate criterion for assessing a country's development is its people and their capabilities, not just economic growth (UNDP, 2024). However, the widespread use of the HDI does not ensure its universal acceptance. Problems associated with calculating the HDI generally arise from constructing complex indicators, including the selection of weights for its components and access to reliable and accurate data. Issues also include oversimplifying the phenomena under study and generalizing for the purpose of drawing conclusions for a comprehensive assessment of the phenomenon. The shortcomings of measurement are addressed by calculating the Inequality-Adjusted Human Development Index (IHDI), which accounts for inequalities present in societies. Based on the same indicators, adjusted for the level of inequality, inequality indices are created for all adopted dimensions, as well as a synthetic non-income indicator. The higher the IHDI, the greater the level of social disparities. Conversely, the smaller the difference between the IHDI and the HDI value for a given country, the lower the social inequalities observed; whereas the closer the values of the indices are to each other, the smaller the social inequalities (Rojek, 2019; Krzyminiewska, 2013). The IHDI does not indicate the distribution of resources within a country but rather shows the "loss" resulting from inequalities in access to health, education, and income within a society. It is also important to note that a key measure in contemporary social development measurement is the Gini coefficient, which assesses the level of material inequality within a society. Developed by Corrado Gini, the coefficient is expressed in decimal numbers, while the equivalent measure, the Gini index, is expressed in whole numbers (Kołodko, 2014, p. 27). It ranges from 0 (indicating complete material equality) to 1 (indicating complete inequality).

Thus, a descriptive method was employed in the assessment using the Human Development Index (HDI) and Gini coefficient indicators, Ward's method, and the Lorenz curve. These were used to analyze and evaluate the variations in the level of social development in selected European countries, along with determining their ranking positions. The HDI indicator allowed for capturing the distance that separates European countries in terms of social development (long and healthy life, knowledge, and a decent standard of living). Based on the data obtained from the HDI, the Gini coefficient facilitated the evaluation of income distribution inequality in the studied countries, while cluster analysis helped identify similarities between countries concerning their level of social development.

Europe, as one of the smallest continents in terms of land area, stands out from other parts of the world and is difficult to generalize. Primarily, it is commonly associated with a high level of socio-economic development, a digital society, and a high standard of living. However, European society, whose roots trace back to the Mediterranean civilizations of Greece and Rome, faces numerous problems and challenges. Among these challenges are terrorism arising from Islamic fundamentalism, which threatens Europe's security (Fiszer, 2013, p. 271). Another example is multiculturalism, which differentiates European countries in terms of their policies and simultaneously creates many problems that often hinder the peaceful coexistence of diverse ethnic groups within a given social space (Śliz, Szczepański, 2021, p. 40). International migrations, particularly the management of migration and asylum (including smuggling and human trafficking), pose a difficult challenge based on solidarity, responsibility, and respect for human rights (European Commission, 2024, pp. 117-120; Kacperska et al., 2019). Moreover, Europe is the continent with the fastest-aging population due to declining fertility rates and increasing life expectancy (Okólski, 2013, p. 38). Literature also emphasizes that Europe is a continent with diverse national images, as highlighted by W. Chlebda, who identifies a common axiological denominator for the continent. This is defined by a six-point formula at a very high level of generality: "1. part of the world, 2. whose inhabitants, 3. faithful to their national traditions, 4. profess a set of positive values, 5. which could form the basis for their supranational community, 6. in both human and institutional dimensions" (Chlebda, 2018, pp. 36-37). According to the author, this represents a three-dimensional view of Europe: as a localist dimension (part of the world), an institutional dimension (European Union), and a symbolic dimension (a set of traits and values) (Chlebda, 2018, p. 37). Particular value is attributed to the phenomenon of European integration (with most of the 42 European countries being EU members), which initiates dialogue, cooperation, and joint efforts not only for social and economic cohesion but also for preserving cultural continuity and identity of societies (Żebrowski, 2003, p. 109). The European Union, in its actions, focuses on increasing competitiveness and striving for an ecological, digital, and resilient economy, while it cannot neglect activities that promote social inclusion (European Commission, 2024, p. 23). The EU is characterized by inequalities in many areas, which are particularly evident at the national level, and the current ambitious goals for green transformation pose a serious risk of exacerbating issues such as energy poverty (European Commission, 2024, p. 23). However, as E. Mączyńska emphasizes, although social inequalities in the EU are lower compared to the US or other developed economies, the risk of increasing inequalities is growing. This poses a threat to achieving convergence and social cohesion goals (Mączyńska, 2021, p. 64).

2. Research method

To measure and assess the level of social development in European countries, several tools were used, including the Human Development Index (HDI)[1], the Gini coefficient, the Lorenz curve, and Ward's method. The HDI is a commonly applied indicator for analyzing the phenomenon of social development at the national level. Its development was greatly influenced by two economists, Mahbub ul Haq from Pakistan and Amartya Sen from India, who published the first Human Development Report in 1990. Since then, the report has been released annually by the United Nations Development Programme (UNDP) (Antczak, 2012, pp. 7-24; Oesterreich, 2018, pp. 303-313; Aksentijević, Ježić, 2017, pp. 109-112). This extensive and detailed report covers various socio-economic aspects of the countries under study, including the ranking of countries based on their level of human development (UNDP, 2024). The HDI measures three key dimensions: long and healthy life, knowledge, and a decent standard of living. As of 2010[2], four specific components are used to determine the HDI (Figure 1):

- life expectancy,
- the average number of years of education received by residents aged 25 and older,
- the expected number of years of education for children entering the education process,
- national income *per capita* in U.S. dollars, calculated according to the purchasing power parity of a given currency[3].

The health condition, identified with longevity, is measured using the life expectancy index. Education is assessed based on the average years of schooling for adults and the expected years of schooling for children of school age. Income, reflecting the wealth of societies, is measured through the gross national income per capita, adjusted for purchasing power.

[1] It should be emphasized that the HDI reflects not only the sphere of wealth (as in the case of GDP-related indicators), but also education and the health condition of citizens, hence it is considered to indicate the level of socio-economic development of individual countries.

[2] In 2010, changes were made to the HDI's construction concerning its components, implemented in response to the European Commission's Report on the Measurement of Economic Development and Social Progress (the so-called Stiglitz Report: Stiglitz, Sen, Fitoussi, 2009).

[3] Purchasing Power Parity (PPPs) measures the differences in price levels between countries. It provides information on the cost (expressed in currency units) of specific goods and services in different countries. By using PPPs to convert expenditures expressed in national currencies into a common, artificial currency, the impact of price level differences caused by exchange rate fluctuations is eliminated (Eurostat).

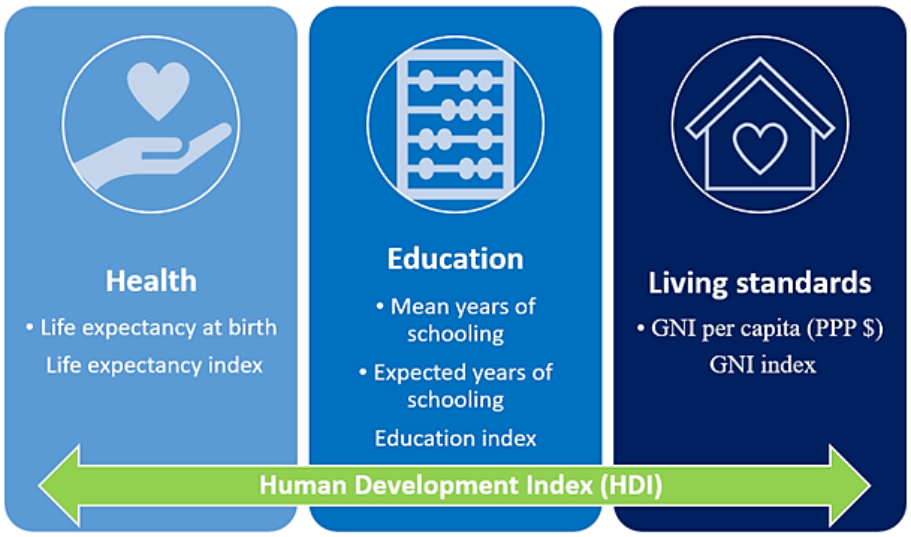

Figure 1. Human Development Index (HDI) and its components.

Source: the authors' own study based on UNDP 2010, pp. 215-222.

The underlying premises for creating the HDI indicator include the following (Ul Haq, 1999; Sompolska-Rzechuła, 2016, pp. 62-78):

a. A flexible approach to the HDI indicator in terms of its scope and methodology;
b. The identification of an indicator that extends beyond income while maintaining methodological reliability;
c. Limiting the number of component variables to ensure simplicity and functionality;
d. The creation of a single, synthetic indicator rather than an extensive set of indicators;
e. Incorporating both social and economic components into the indicator[4].

Currently, since 2010, HDI is calculated as the geometric mean of the normalized average indices for each development component. It ranges from 0 (low level of development) to 1 (very high level of development), and based on this, countries are grouped as follows (Hozer-Koćmiel, 2018, pp. 40-49; Pangsy-Kania, 2015, pp. 152-162; Rojek, 2019, pp. 40-51):

- Very high development: 0.800-1.000,
- High development: 0.700-0.799,
- Medium development: 0.550-0.699,
- Low development: 0-0.550.

Approximately 30% of countries are classified as very highly and highly developed, around 51% as moderately developed, and about 19% as low developed (Śleszyński, 2016, pp. 40-54).

The concept of the Lorenz curve, which is used to assess inequality, was introduced in 1905 by American economist Max Lorenz (1905, pp. 209-219). He proposed a graphical representation of wealth or income inequality (Jędrzejczak, 2011). The Lorenz curve shows the relationship between the cumulative percentages of the population (specifically, the poorest

[4] The methodological aspects related to determining the HDI index were presented in the work of Anand, Sen, 1994.

segment) and the percentage of total income they receive (wages)[5]. The 45° line is called the line of equal distribution and represents a situation where a given percentage of total income is owned by the exact same cumulative percentage of the population being studied. The further the Lorenz curve deviates from this line, the greater the degree of income inequality (Kumor, Sztaudynger, 2007, pp. 233-246). The Lorenz curve is mainly used in economics to measure income concentration (Gastwirth, 1971, pp. 1037-1039; Arnold, 1987).

The Lorenz curve is closely associated with the Gini coefficient, the most commonly used measure of inequality (Farris, 2010, pp. 851-864). Geometrically, the Gini coefficient can be represented as twice the area between the Lorenz concentration curve and the line of equal distribution. It is calculated using formula 1:

$$K = 1 - \sum_{i=1}^{k}(s_{i-1} + s_i) \cdot w_i \quad (1)$$

where:

s_i – cumulative trait frequencies,

w_i – relative frequencies of units.

The Gini coefficient is a normalized measure, taking values between 0 and 1, where 0 indicates no concentration (income is equally distributed among all individuals in the population), while a value of 1 signifies complete concentration (Hasell, 2023).

Complementing the descriptive analysis, which is based on the HDI index, the Gini coefficient, and the Lorenz curve, is Ward's method (Ward, 1963, pp. 236-244). This method was used to identify groups of countries with similar levels of social development based on HDI components. The method involves data segmentation to isolate homogeneous objects within the studied population. The division is carried out in such a way that clusters are formed where elements within the same group are similar to each other but differ from elements in other groups (Gatnar, Walesiak, 2004). Ward's method ensures homogeneity within clusters and heterogeneity between clusters. However, it should be noted that it tends to cluster a relatively small number of observations together while producing clusters with similar sizes (Ward, 2004; Strahl, 2006; Młodak, 2006; Szkutnik et al., 2015). The study was carried out on the basis of standardized variables, and the Euclidean distance was used to form clusters. The effects of using the Ward method have been presented in the form of a cluster tree – dendrograms (using Statistica 13.1). In the conducted study, a critical value was established based on the analysis of the agglomeration process plot.

[5] By assumption, the individuals in the population should be ordered in a non-decreasing manner with respect to income.

3. Results and discussion

Based on the Human Development Index (HDI), Switzerland has been the leader in the HDI ranking during the examined years of 2010 and 2022. This trend also holds over a broader time frame. In 2010, 2015 (tied with Norway), 2021, and 2022, Switzerland consistently maintained the top position, with its HDI values showing an upward trend, recorded at 0.940, 0.952, 0.965, and 0.967, respectively (Figure 2).

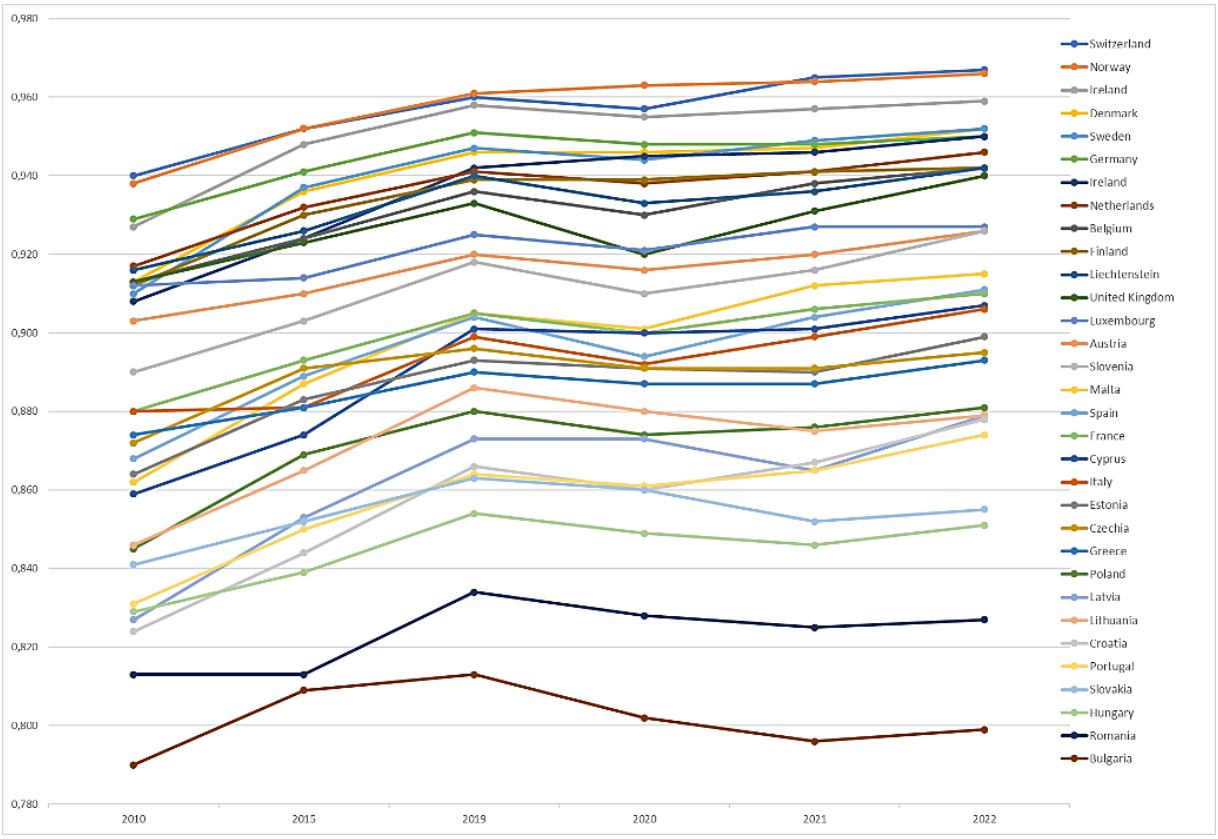

Figure 2. HDI Values in Selected European Countries in 2022.

Source: Own elaboration based on the Human Development Report (UNDP, 2024).

The HDI value increased by 0.027 points (2.9%) in 2022 compared to 2010. In 2019 and 2020, Switzerland surpassed Norway, with an HDI value of 0.961 in 2019 and a slightly higher value of 0.963 in 2020. Romania and Bulgaria recorded the lowest results across the three examined aspects (life expectancy, education, and GNI) in each of the analyzed years. The gap between the leading country and Bulgaria, which held the lowest position, was as follows in the studied years: 0.15; 0.14; 0.15; 0.16; 0.17; and 0.17. It is important to note that, except for Bulgaria, the countries examined were in the highest development group globally during the analyzed years, with an HDI index ranging from 0.800 to 1.000. All these countries exhibited a higher HDI in 2022 compared to the baseline year. The highest growth dynamics were observed in Croatia, Malta, and Latvia, while the lowest were noted in Bulgaria, Romania, and Slovakia.

The data presented in Table 1 show that there have been positive changes in the level of social development in most of the selected European countries over the studied years.

Table 1.
Positions of European Countries in the HDI Ranking for 2022 Compared to 2010, Position Changes, and HDI Distance from the Leader in Each Year

Country	Ranking position in 2010.	Ranking position in 2022.	Change of position 2021/2022 [number]	Distance to ranking leader (according to HDI)	
				2010 leader - Switzerland)	2022 leader - Switzerland)
Austria	11	10	↑1	0.037	0.041
Belgium	7	7	=	0.027	0.025
Bulgaria	28	26	↑2	0.150	0.168
Croatia	26	21	↑5	0.116	0.089
Cyprus	19	14	↑5	0.081	0.060
Czechia	15	17	↓2	0.068	0.072
Denmark	7	4	↑3	0.027	0.015
Estonia	17	16	↑1	0.076	0.068
Finland	8	7	↑1	0.028	0.025
France	13	13	=	0.060	0.057
Germany	3	5	↓2	0.011	0.017
Greece	14	18	↓4	0.066	0.074
Hungary	24	24	=	0.111	0.116
Iceland	4	3	↑1	0.013	0.008
Ireland	10	5	↑5	0.032	0.017
Italy	13	15	↓2	0.060	0.061
Latvia	25	20	↑5	0.113	0.088
Liechtenstein	6	7	↓1	0.024	0.025
Lithuania	20	20	=	0.094	0.088
Luxembourg	8	9	↓1	0.028	0.040
Malta	18	11	↑7	0.078	0.052
Netherlands	5	6	↓1	0.023	0.021
Norway	2	2	=	0.002	0.001
Poland	21	19	↑2	0.095	0.086
Portugal	23	22	↑1	0.109	0.093
Romania	27	25	↑2	0.127	0.140
Slovakia	22	23	↓1	0.099	0.112
Slovenia	12	10	↑2	0.050	0.041
Spain	16	12	↑4	0.072	0.056
Sweden	9	4	↑5	0.030	0.015
Switzerland	1	1	=	x	x
United Kingdom	7	8	↓1	0.027	0.027

= no change; x – ranking leader; ↓ – decrease in position; ↑ – increase in position.

Source: the authors' own study based on: Latosińska, Miłek, Gibowski 2024, pp. 1-20.

Fourteen countries ranked higher in 2022 compared to the baseline year of 2010. This is particularly evident in the case of Malta, which moved from 18th place in 2010 to 11th place in 2022 - a rise of 7 positions. Similarly, Croatia, Cyprus, Ireland, Latvia, and Sweden saw an improvement of 5 positions each. Eight of the 32 countries experienced a decline in their ranking, with the largest drop affecting Greece - 4 positions. Six countries maintained their position across the analyzed years. A noticeable difference is seen in the distance of countries from the leader in the studied years, which was Switzerland. In 2010, eleven countries had

a distance ranging from 0.002 to 0.030 from the leader, with Norway having the smallest distance at 0.002, and Romania the largest at 0.127. Similarly, in 2022, eleven countries had a distance between 0.001 and 0.027, with the smallest distance for Norway (0.001) and the largest for Bulgaria (0.148). It is worth noting that this distance has significantly increased, indicating a widening disparity in the level of social development. Additionally, in 2010, fifteen countries ranked above the average for the studied entities in terms of the HDI, whereas in the most recent analyzed year, this number increased to seventeen countries[6]. As previously mentioned, all countries, except for Bulgaria (Group II – HDI for world countries: 0.700-0.799), were classified in Group I, i.e., the highest level of social development based on HDI.

In contrast, the findings from the analysis of the Gini coefficient and the Lorenz curve indicate a relatively even distribution of socio-economic development levels among the selected European countries (see Figures 3 and 4). The Lorenz curve almost coincides with the equality line (ideal state), meaning that nearly every country has a proportionally equal share in the total social development. The minimal deviation of the curve confirms the low degree of inequality among these countries, which is consistent with the Gini coefficient calculated based on Formula 1. In 2010, the Gini coefficient was 0.0256, indicating a low degree of concentration ($0 \leq G < 0.25$). This suggests that even in 2010, the level of development among countries with very high HDI scores exhibited relatively low variability. Therefore, the level of inequality in socio-economic development, as measured by HDI, was low among economically advanced countries.

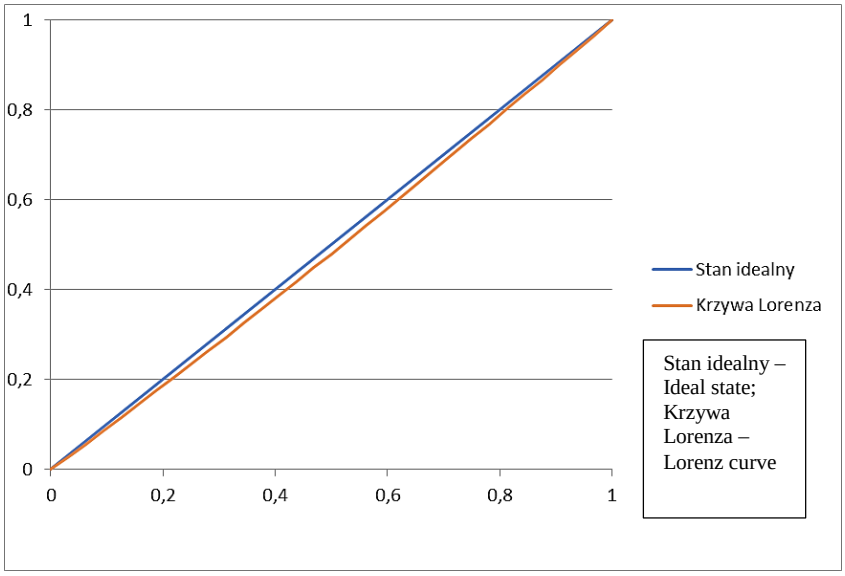

Figure 3. Lorenz Curve for the level of social development of selected European countries in 2010.
Source: The author's own study.

[6] For all countries in the world (193 entities), the average HDI in 2022 was 0.724, indicating that all the studied countries achieved a level of social development above the global average.

Similarly, in 2022, the Lorenz curve almost coincides with the equality line (ideal state), indicating that nearly every country has a proportionally equal share in the total social development (see Figure 4). The minor deviation of the curve confirms the level of inequality among the studied countries and is consistent with the Gini coefficient (calculations based on Formula 1). In 2022, the Gini coefficient for the selected European countries was 0.0248, falling within the range of $0 \leq G < 0.25$, indicating a low level of concentration. The Gini coefficient decreased by 3.34% compared to 2010, reflecting a reduction in the disparity of HDI among countries. The very high HDI scores of individual countries in 2022 are relatively evenly distributed, showing a low degree of concentration. The level of development among countries with very high HDI scores exhibits relatively little variation. This is because, today, economically advanced countries experience a low level of inequality in socio-economic development, as measured by HDI. This results from the fact that differences in the distribution of individual HDI components, such as health, education, and income, are minimal in these countries (compared to countries that still have a low or medium level of socio-economic development based on HDI, such as countries in Sub-Saharan Africa).

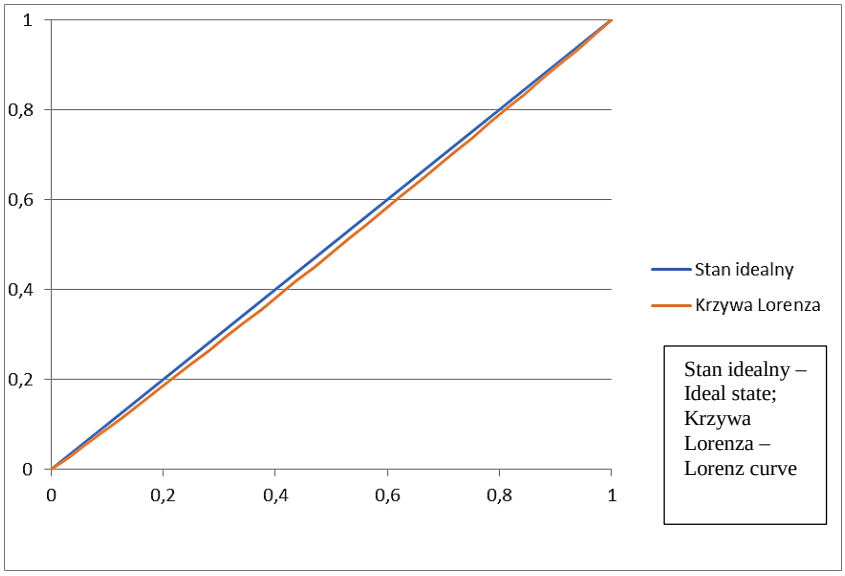

Figure 4. Lorenz Curve for the level of social development of selected European countries in 2022.
Source: The author's own study.

To confirm the results presented above, this study includes the Lorenz curve for the HDI of countries worldwide in 2022 (see Figure 5). The deviation of the Lorenz curve from the equality line is small, indicating a moderate level of inequality, with a slightly greater bulge in the initial segment of the curve. For the 193 countries worldwide in 2022, the Gini coefficient of 0.1222 falls within the range of $0 \leq G < 0.25$, signifying a low degree of concentration. This indicates moderate variation in the level of social development among countries in 2022.

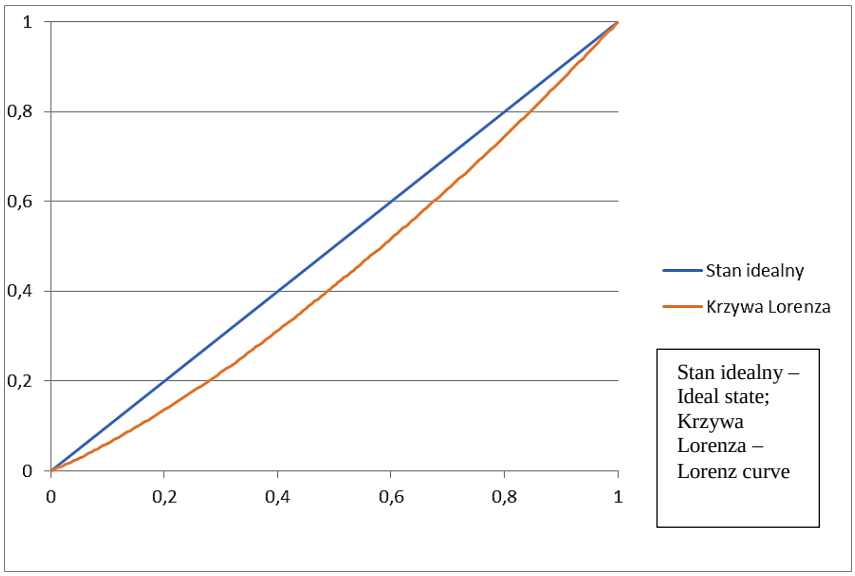

Figure 5. Lorenz Curve for the level of social development of the world's 193 countries in 2022.

Source: The author's own study.

To identify similarities among selected countries based on their level of social development, the Ward's method was employed. An important element of cluster analysis is the cut off point of the dendrogram, which allows to determine the number of clusters in the analyzed study. In the conducted study, an attempt was made to determine the critical value based on the analysis of the line chart of linkage distances across subsequent stages of the clustering process. The analysis of the agglomeration plot for 2022 allows us to conclude that the optimal place to cut the dendrogram should be set at step 26 (the longest vertical line in Figure 6), which indicates that the linkage distance is between levels 3 and 4. For the study the cut-off point of the dendrogram for the connectivity distance of 4 was adopted.

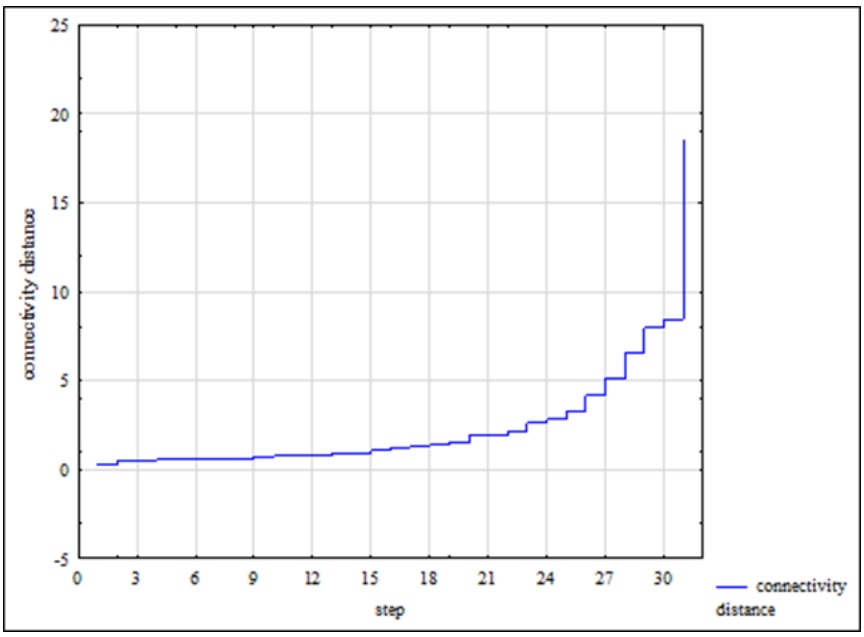

Figure 6. Diagram of the course of agglomeration for 2022.

Source: The author's own study.

Based on this analysis, six clusters were identified in 2022 (Figure 7). The classification of selected European countries resulted in the following groups: single-, three-, four-, five-, nine-, and ten-member clusters. The first cluster, consisting of four countries, includes Switzerland, Germany, the United Kingdom, and Slovenia. These countries share similarities in terms of health and education indices, particularly in the average number of years of education received by residents aged 25 and older. The second cluster consists of five countries that exhibit similarities in terms of life expectancy, which ranges from 81.9 to 83.7 years. This cluster includes Luxembourg, Austria, Cyprus, Malta, and France. An independent, single-member cluster is formed by Liechtenstein, which stands out due to its exceptionally high GNI (Gross National Income) of 146,673 PPP dollars, significantly distancing itself from other countries. The fourth cluster consists of three countries - Spain, Italy, and Portugal - which are grouped together due to their comparable values in life expectancy and average years of education, i.e. Spain, Italy and Portugal. The fifth group, the largest with nine countries, consists of Northern European countries: Norway, Denmark, Sweden, the Netherlands, Belgium, Finland, Iceland, Ireland, and Greece. The sixth cluster includes eight countries, predominantly from Central and Eastern Europe: Estonia, Czechia, Poland, Latvia, Lithuania, Slovakia, Hungary, and Croatia. These units demonstrate significant similarities in terms of GNI values. The final, eighth cluster consists of two countries with relatively low HDI scores compared to the other analyzed units - namely, Romania and Bulgaria - indicating that these nations differ markedly in terms of social development compared to the rest of the group.

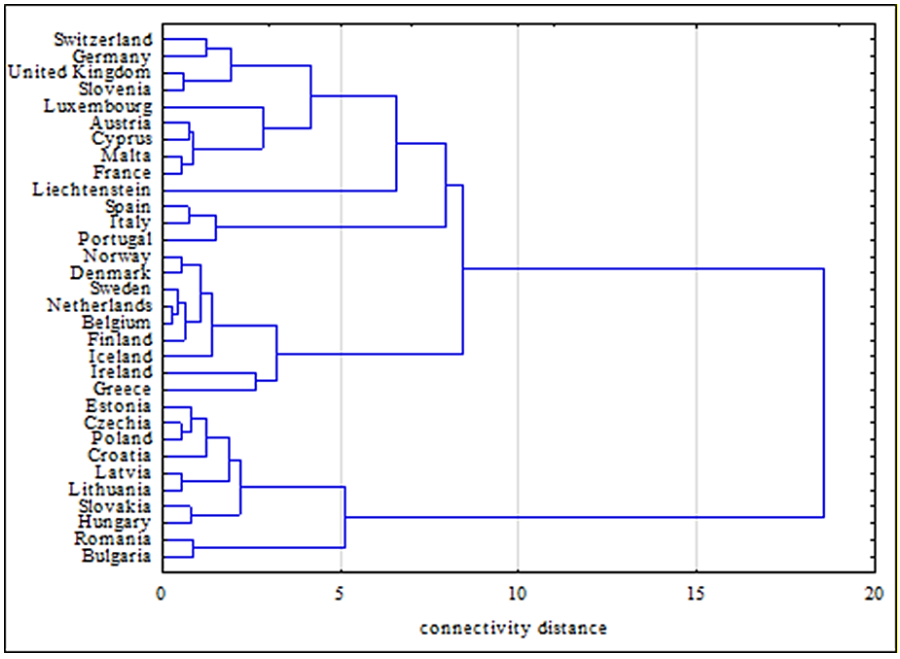

Figure 7. Cluster of selected European countries with similar levels of social development based on the synthetic HDI indicator in 2022.

Source: The author's own study.

The Human Development Index (HDI) is currently employed for a wide range of purposes, from serving as a comparative index to guiding public policy decisions. The noticeable improvement in the level of social development for many European countries in 2022, compared to 2010, can be attributed to public authorities' efforts to provide favorable conditions for living, working, healthcare, and entrepreneurship. These improvements also stem from the strengthening of European integration and financial support, particularly for European Union countries.

However, the HDI does not fully capture the disparities in social development. By employing the mean and standard deviation, the analyzed European countries were grouped into four categories. This approach helped highlight internal inequalities. Thus, the countries were categorized based on their level of social development into four groups: highest (HDI $\geq \overline{HDI} + S_{HDI}$), high ($\overline{HDI} \leq$ HDI $< \overline{HDI} + S_{HDI}$), low ($\overline{HDI} - S_{HDI} \leq$ HDI $< \overline{HDI}$), and very low (HDI $< \overline{HDI} - S_{HDI}$). These classifications are presented in Table 2:

where:

$\overline{HDI}$ - arithmetic mean of the HDI indicator;

S_{HDI} - standard deviation of the HDI indicator.

Table 2.

HDI Human Development Index in selected European countries in 2010 and 2022

2010			2022		
Ranking position	**Country**	**Indicator Value HDI**	**Ranking position**	**Country**	**Indicator Value HDI**
Group of countries with the highest level of human development					
HDI ≥ 0.920			HDI ≥ 0.952		
1.	Switzerland	0.940	1.	Switzerland	0.967
2.	Norway	0.938	2.	Norway	0.966
3.	Germany	0.929	3.	Iceland	0.959
4.	Iceland	0.927	4.	Denmark	0.952
			5.	Sweden	0.952
Group of countries with a high level of human development					
0.880 ≤ HDI < 0.920			0.911 ≤ HDI < 0.952		
5.	Netherlands	0.917	6.	Germany	0.950
6.	Liechtenstein	0.916	7.	Ireland	0.950
7.	Denmark	0.913	8.	Netherlands	0.946
8.	Belgium	0.913	9.	Belgium	0.942
9.	United Kingdom	0.913	10.	Finland	0.942
10.	Finland	0.912	11.	Liechtenstein	0.942
11.	Luxembourg	0.912	12.	United Kingdom	0.940
12.	Sweden	0.910	13.	Luxembourg	0.927
13.	Ireland	0.908	14.	Austria	0.926
14.	Austria	0.903	15.	Slovenia	0.926
15.	Slovenia	0.890	16.	Malta	0.915
16.	France	0.880	17.	Spain	0.911
17.	Italy	0.880			

Cont. table 2.

Group of countries with a low level of human development					
0.839 ≤ HDI < 0.880			0.869 ≤ HDI < 0.911		
18.	Greece	0.874	18.	France	0.910
19.	Czechia	0.872	19.	Cyprus	0.907
20.	Spain	0.868	20.	Italy	0.906
21.	Estonia	0.864	21.	Estonia	0.899
22.	Malta	0.862	22.	Czechia	0.895
23.	Cyprus	0.859	23.	Greece	0.893
24.	Lithuania	0.846	24.	Poland	0.881
25.	Poland	0.845	25.	Latvia	0.879
26.	Slovakia	0.841	26.	Lithuania	0.879
			27.	Croatia	0.878
			28.	Portugal	0.874
Group of countries with very low levels of human development					
HDI < 0.839			HDI < 0.869		
27.	Portugal	0.831	29.	Slovakia	0.855
28.	Hungary	0.829	30.	Hungary	0.851
29.	Latvia	0.827	31.	Romania	0.827
30.	Croatia	0.824	32.	Bulgaria	0.799
31.	Romania	0.813			
32.	Bulgaria	0.790			

Source: Own elaboration based on the Human Development Report (UNDP, 2024).

Nearly 47% of the units were classified into Groups III and IV in both 2010 and 2022. The vast majority of countries in both years fell into the groups with low and very low levels of social development, with the exception of two countries (Spain and Malta), which advanced to Group II in 2022. It is notable that in both analyzed years, Bulgaria, Romania, and Hungary formed a group with a very low level of social development based on the HDI.

According to Oxfam studies, global inequality in wealth distribution is deepening. The fortunes of the world's five richest men have doubled since 2020, while nearly five billion people globally have fallen into poverty during this time. At the current pace, it is estimated that it will take 230 years to eliminate poverty. The authors of the report suggest that global inequality is exacerbated by the significant concentration of corporate and monopolistic power, which exploits masses of oppressed workers, avoids taxes, and contributes to climate change (Riddell et al., 2024). Europe is not exempt from social disparities either. Currently, research on social inequalities takes a multidimensional approach, in which authors investigate a broad range of aspects related to the nature and causes of asymmetry (Pilch, 2023; Kaczmarek et al., 2007; Wielecki, 2019; Żyżyński, 2023; Wesołowska, 2024). A key issue here is determining the extent of the inequalities facing the world today, including in Europe. The analysis suggests that social inequalities continue to be observed on the continent, resulting from the asymmetric allocation of resources (Reczuch, 2022). Many authors emphasize that inequalities are a complex phenomenon present in nearly all countries (Bilińska, 2020; Wiatrowski, 2016), leading to numerous social and economic problems (Krzyminiewska, 2013). According to M. Lange's research, the most significant social problems correlated with income inequality are found in Southern Europe (Portugal, Spain, Greece), the Baltic States (Latvia, Lithuania, Estonia), as well as in Bulgaria and Romania - the least affluent countries. Lange notes that the

rise in socio-economic inequalities within the EU is the result of labor market changes driven by technological advancements in a globalized world, along with national policies concerning income redistribution. It is also worth mentioning that the smallest inequalities are found in countries like Slovenia, the Netherlands, and Scandinavian countries (Lange, 2015).

The analysis presented in this article confirms ongoing disparities in terms of HDI. The gap between the top-ranking country and others increased by 0.018 between 2010 and 2022, reaching 0.168 in 2022 (the gap between Bulgaria and Switzerland). The most challenging situation continues to affect Bulgaria, Romania, Hungary, and Slovakia. These findings are consistent with other studies. For example, N.K. Aksentijević and Z. Ježić (2017) highlight weaker social development in parts of Central and Eastern Europe, particularly in Romania, Bulgaria, Serbia, North Macedonia, Ukraine, Albania, and Bosnia and Herzegovina. Similarly, K. Wielecki's research on disposable incomes within EU countries also supports the thesis of stable income disparities globally (Wielecki, 2019). Wielecki points out that the greatest asymmetry was observed in Lithuania, Romania, Bulgaria, Latvia, and Estonia. A. Kuczyńska-Zonik noted similar observations regarding the Baltic States (Lithuania and Latvia), highlighting a high poverty rate (the highest after Bulgaria and Romania), which she attributes to inadequate government social support. This reflects the weaknesses in the tax and social security systems, which are less effective than in other EU countries (Kuczyńska-Zonik, 2021). K. Wójtowicz offers a different perspective on fiscal policy's effectiveness, suggesting that spending tools (mainly increasing social transfers) are more effective in reducing income inequality than tax tools. Among tax measures, raising income taxes for the wealthiest individuals and reinforcing progressive taxation proved most effective (Wójtowicz, 2016). T. Pilch further argues that government efforts have been ineffective, highlighting the helplessness of democracy in addressing social inequalities, with education and wealth emerging as new creators of asymmetry (Pilch, 2023). Additionally, J. Żyżyński points out that the rise in income and wealth inequalities in the U.S. and Europe began in the early 1980s with the expansion of neoliberal ideology, as many countries rolled back progressive taxation mechanisms (Żyżyński, 2023).

4. Conclusions

Inequality, including social inequality, has always been a global issue. There is broad consensus that inequality generally harms economic growth and public financial stability, leading to rent-seeking behavior, the accumulation of negative effects, and the exclusion of many people from the benefits of economic growth. Although Europe, in global terms, is considered the continent with the lowest levels of social inequality, significant internal disparities exist between European countries. Despite the consistent progress in social

development observed across European countries, these advancements are accompanied by persistent developmental asymmetries. The analyzed countries exhibit substantial social inequalities, even though most are classified among the world's nations with the highest levels of social development (with Bulgaria occupying the highest position among countries with a high level of social development). In fact, these asymmetries are deepening, as demonstrated by the HDI; the gap between Switzerland (the leader in both 2010 and 2022) and Bulgaria (the lowest-ranked country in both years) widened to 0.168 in 2022, compared to 0.150 in 2010. Bulgaria's social development progress has been considerably weaker than that of Switzerland. This issue of disparities is further highlighted by the division of European countries into groups with the highest, high, low, and very low levels of social development, with nearly 47% of the countries classified into the two weakest groups. The existence of inequalities is also reflected in the results of studies using Ward's method, which reveal several clusters of countries with homogenous characteristics. For example, Estonia, Czechia, Poland, Latvia, Lithuania, Slovakia, Hungary, and Croatia show significant similarities in terms of GNI per capita.

According to the authors of the article, although the existence of socio-economic inequalities is an immanent feature of development, it is necessary to take action to eliminate them. Otherwise, the accumulation of adverse phenomena will exacerbate the already existing problems in the pursuit of social inclusion, which is the goal of both European and international politics. The persistence of significant disparities will probably result in the deepening of the global economy problems in the future, such as the intensification of illegal migration, including climate migration, ensuring food and health security, and the problem of social poverty. The subject of inequality, particularly the discussion around it, requires in-depth research on both a global and European level. A critical issue for future studies would be to answer the pressing question of what level of inequality is acceptable. However, finding a definitive answer to this question remains a complex and challenging task.

References

1. Aksentijević, N.K., Ježić, Z. (2017). Measuring the development of human resources with the usage of Human Development Index in selected CEE countries. In: K. Wach, B. Knežević, N. Šimurina (Eds.), *Challenges for international business in Central and Eastern Europe. Przedsiębiorczość Międzynarodowa, Vol. 3, No. 1* (pp. 109-121). Kraków: Cracow University of Economics.
2. Anand, S., Sen, A.K. (1994). *Human Development Index: Methodology and Measurement*. New York: Occasional Papers. Available online http:// https://hdr.undp.org/content/human-development-index-methodology-and-measurement, 26.07.2024.
3. Antczak, R. (2012). Nowe ujęcie wskaźnika rozwoju społecznego HDI. *Studia i Prace*

Kolegium Zarządzania i Finansów, no. 117. Warszawa: SGH, pp. 7-24.

4. Arnold, B.C. (1987). Majorization and the Lorenz Order: A Brief Introduction. *Lecture Notes in Statistics, 43*, Berlin: Springer-Verlag.
5. Bilińska, K. (2020). Nierówności społeczno-ekonomiczne jako problem o nowym znaczeniu w XXI wieku. In: N. Laurisz (ed.), *Wyzwania i problemy społeczne początku XXI wieku, 37* (pp. 37-47). Kraków: Fundacja Gospodarki i Administracji Publicznej.
6. Chlebda, W. (2018). EUROPA w trzynastu obrazach. In: W. Chlebda (ed.), *Leksykon aksjologiczny Słowian i ich sąsiadów, T. 2: Europa* (pp. 15-60). Lublin: Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej.
7. Churski, P., Perdał, R., Konecka-Szydłowska, B., Herodowicz, T. (2018). Redefinicja czynników rozwoju regionalnego w świetle megatrendów społeczno-gospodarczych. *Studia regionalne i lokalne, 3(73),* pp. 70-98, doi: 10.7366/1509499537304. doi: 10.15584/nsawg.2016.3.15.
8. Dzieciuchowicz, J. (2011). Rozwój społeczny współczesnego świata-struktura i typologia przestrzenna. *Akta Universitatis Lodziensis Folia Geographica Socio-Oeconomica, 11*, pp. 15-44.
9. Dziembała, M. (2023). Uwarunkowania społeczne funkcjonowania gospodarki światowej w warunkach niestabilności. In: M. Dziembała, M. Fronczek (ed.), *Uwarunkowania funkcjonowania gospodarki światowej w okresie niestabilności wywołanej wybuchem pandemii COVID-19 i wojny w Ukrainie* (pp. 11-29). Katowice: Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach, doi.org/10.22367/uekat.9788378758679
10. Farris, F.A. (2010). The Gini Index and Measures of Inequality. *The American Mathematical Monthly*, *117(10),* pp. 851-864, doi.org/10.4169/000298910x523344
11. Fiszer, J.M. (2013). Terroryzm jako zagrożenie dla bezpieczeństwa euroatlantyckiego i nowego ładu międzynarodowego. In: P. Olszewski, J.M. Fiszer (ed.), *System euroatlantycki w wielobiegunowym ładzie międzynarodowym*. Warszawa.
12. Gastwirth, J.L. (1971). A general definition of the Lorenz curve. *Econometrica, 39(6),* pp. 1037-1039. doi.org/10.2307/1909675
13. Gatnar, E., Walesiak, M. (2004). *Metody statystycznej analizy wielowymiarowej w badaniach marketingowych*. Wrocław: Wydawnictwo Akademii Ekonomicznej.
14. Gorzelak, G. (1989). *Rozwój regionalny Polski w warunkach kryzysu i reformy*. Warszawa: Uniwersytet Warszawski.
15. Hasell, J. (2023). *Measuring inequality: what is the Gini coefficient?* Retrieved from: https://ourworldindata.org/what-is-the-gini-coefficient, 26.07.2024.
16. Hozer-Koćmiel, M. (2018). Ocena rozwoju społeczno-ekonomicznego województw za pomocą HDI. *Wiadomości Statystyczne, 3(682),* pp. 40-49.
17. *Human Development Report*, http://hdr.undp.org, 28.07.2024.
18. Iwaszczuk, N., Łamasz, B., Orłowska-Puzio, J. (2016). Globalizacja a nierówności w rozwoju wybranych krajów. *Nierówności społeczne a wzrost gospodarczy, 47*, pp. 161-

174. doi: 10.15584/nsawg.2016.3.12.
19. Kacperska, E., Kacprzak, M., Kmieć, D., Król, A., Łukasiewicz, K. (2019). Migracje międzynarodowe w Europie. *Trendy - Problemy – Wyzwania*. Warszawa: SGGW.
20. Kaczmarek, T., Marcinkowski, J.T., Zysnarska, M., Maksymiuk, T., Majewicz, A. (2007). Nierówności społeczne w dostępie do zdrowia. *Problemy Higieny i Epidemiologii*, *88(3),* pp. 259-256.
21. Kołodko, G.W. (2014). Społeczne i przestrzenne aspekty zróżnicowania dochodów we współczesnym świecie. *Nierówności społeczne a wzrost gospodarczy*, *39.* Rzeszów: Wydawnictwo Uniwersytetu Rzeszowskiego, pp. 26-37.
22. Komisja Europejska, Dyrekcja Generalna ds. Komunikacji Społecznej (2024). UE w 2023 r.: sprawozdanie ogólne z działalności Unii Europejskiej, Urząd Publikacji Unii Europejskiej, https://data.europa.eu/doi/10.2775/498494, 31.07.2024.
23. Krzyminiewska, G. (2013). Nierówności a rozwój społeczny świata. *Studia Ekonomiczne*, *139*, pp. 50-59.
24. Kuczyńska-Zonik, A. (2021). Nierówności i problem wykluczenia społecznego we współczesnych państwach bałtyckich. *Władza sądzenia*, *20*, pp. 129-143, doi.org/10.18778/2300-1690.20.08.
25. Kumor P., Sztaudynger, J.J. (2007). Optymalne zróżnicowanie płac w Polsce – analiza ekonometryczna. *Ekonomista, no. 1*, pp. 233-246.
26. Lange, M. (2015). Nierówności dochodowe a wybrane problemy społeczne w krajach Unii Europejskiej. *Nierówności społeczne a wzrost gospodarczy*, *42*, pp. 187-196.
27. Latosińska, J., Miłek, D., Gibowski, Ł. (2024). Global Conditions and Changes in the Level of Renewable Energy Sources. *Energies*, *17*, *2553*. https://doi.org/10.3390/en17112553
28. Lorenz, M.O. (1905). Methods of measuring concentration of wealth. *Publications of the American Statistical Association*, *9*, pp. 209-219.
29. Mączyńska, E. (2021). Unia Europejska wobec nierówności ekonomicznych. In: Niżnik, J. (ed.), *Polska w Europie jutra. Polityka europejska Polski w kontekście zmian międzynarodowych XXI wieku* (pp. 57-74). Warszawa.
30. Młodak, A. (2006). *Analiza taksonomiczna w statystyce regionalnej*. Warszawa: Difin.
31. Oesterreich, M. (2018). Dynamika składowych wskaźnika rozwoju społecznego krajów Europy w latach 2010-2015. *Studia i Prace WNEiZ US, no. 54/3,* pp. 303-313. doi: 10.18276/sip.2018.54/3-22).
32. Okólski, M. (2010). Wyzwania demograficzne Europy i Polski. *Studia Socjologiczne, 199(4),* pp.37-78.
33. Pangsy-Kania, S. (2013). Kształtowanie się wskaźnika HDI w Chinach w latach 1980-2013 na tle pozostałych krajów BRICS. *Gdańskie Studia Azji Wschodniej, 8,* pp. 152-162.
34. Piketty, T. (2014). *Capital in the Twenty-First Century*. Paris: The Belknap of Harvard University Press.
35. Pilch, T. (2023). Nierówności społeczne: geneza–struktura–walory moralne. *Forum Nauk*

Społecznych, *No. 1*. Wydawnictwo Uniwersytetu Warmińsko-Mazurskiego w Olsztynie, pp. 27-42, doi: 10.31648/fns.8835.

36. Poborski, M., Kraska, E.M. (2022). Globalny versus lokalny - demograficzny wymiar cywilizacyjnych megatrendów. *Przegląd Prawno-Ekonomiczny, 2*, pp. 117-148, doi.org/10.31743/ppe.13245.
37. Reczuch, A. (2022). Kształtowanie się nierówności społecznych w Polsce po 1989 roku a wprowadzenie do krajowego porządku prawnego procedury upadłości konsumenckiej. *Studia Politologica, 370(28),* pp. 31-44, doi 10.24917/20813333.28.3.
38. Riddell, R., Ahmed, N., Maitland, A., Lawson, M., Taneja, A. (2024). *INEQUALITY INC. How corporate power divides our world and the need for a new era of public action*. Oxfam GB for Oxfam International, doi: 10.21201/2024.000007.
39. Rojek, K. (2019). Rozwój społeczny Polski i Niemiec - analiza porównawcza. *Studia Ekonomiczne, Prawne i Administracyjne*, *2*, pp.40-51.
40. Sen, A. (2000). *Nierówności. Dalsze rozważania.* Kraków: Społeczny Instytut Wydawniczy Znak, doi.org/ 10.1093/019 8289286.001.0001.
41. Śleszyński, J. (2016). Nowe spojrzenie na wskaźnik rozwoju społecznego. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, 435*, pp. 40-54.
42. Śliz, A., Szczepański, M.S. (2021). Różnorodność a równość. Projekty wielokulturowości w perspektywie socjologicznej. *Studia Socjologiczne*, *2*, pp. 13-44.
43. Sompolska-Rzechuła, A. (2016). Zróżnicowanie rozwoju społecznego w ujęciu przestrzennym. *Wiadomości Statystyczne, 1(656),* pp. 62-78.
44. Stanny, M. (2012). Poziom rozwoju społeczno-gospodarczego obszarów wiejskich w Polsce–pomiar zjawiska złożonego. *Rozwój wsi i rolnictwa w Polsce. Aspekty przestrzenne i regionalne*. Warszawa: IRWiR PAN, pp. 1-23.
45. Stiglitz, J.E., Sen, A., Fitoussi, J.P. (2009). *Report by the Commission on the measurement of economic performance and social progress.* Available online: http://www.stiglitz-sen-fitoussi.fr/documents//rapport_anglais.pdf. 26.07.2024.
46. Strahl, D. (2006). *Metody oceny rozwoju regionalnego*. Wrocław: Wydawnictwo AE im. O. Langego we Wrocławiu.
47. Szkutnik, W., Sączewska-Piotrowska A., Hadaś-Dyduch M. (2015). *Metody taksonomiczne z programem STATISTICA.* Katowice: Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach.
48. Sztompka, P. (2020). *Słownik socjologiczny. 1000 pojęć*. Kraków: Znak Horyzont.
49. Ward, J.H. Jr (1963). Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association, Vol. 58 (301),* pp. 236-244.
50. Wesołowska, M. (2024). Nierówności dochodowe w krajach postsocjalistycznych–analiza wybranych determinant. *Gospodarka Narodowa. The Polish Journal of Economics, 317(1),* pp. 73-90, doi 10.33119/GN/178341.
51. Wiatrowski, P. (2016). Nierówności społeczne jako skutek neoliberalizmu a demokratyczna

wspólnota. *Prakseologia, 158*, pp. 99-117.
52. Wiatrowski, P. (2018). Polityka podatkowa państwa a nierówności społeczne. *Nierówności społeczne a wzrost gospodarczy, No. 54(2),* pp. 76-86, doi: 10.15584/nsawg.2018.2.5
53. Wielecki, K. (2019). Społeczne aspekty kryzysu gospodarczego - nierówności społeczne a koncepcja człowieka i odpowiedzialności. In: B. Galwas, P. Kozłowski, K. Prandecki (eds.), *Czy świat należy urządzić inaczej. Schyłek i początek* (pp. 164-181). Warszawa: Komitet Prognoz „Polska 2000 Plus" przy Prezydium PAN.
54. Wilkinson, R., Pickett, K. (2010). *The spirit level: Why equality is better for everyone.* London: Penguin, p. 347.
55. Wójtowicz, K. (2016). Rola polityki fiskalnej w ograniczaniu nierówności dochodowych w warunkach kryzysu ekonomicznego–doświadczenia wybranych państw UE. *Nierówności społeczne a wzrost gospodarczy*, *47*, pp. 205-216.
56. Żebrowski, J. (2003). Edukacja wielokulturowa w integrującej się Europie. *Prace Naukowe. Pedagogika, no. 12*, pp. 109-120.
57. Żyżyński, J. (2023). Nierówności jako element pragmatyzmu gospodarczego. *Nierówności Społeczne a Wzrost Gospodarczy*, *73*, pp. 39-56, doi:10.15584/nsawg.2023.1.3.