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Multidimensional Assessment of the Social Development of EU Countries in the Context of Implementing the Concept of Sustainable Development

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Abstract: Measuring and monitoring the implementation of the concept of sustainable development is an important aspect of the assessment of the functioning of EU countries. One of the pivots of sustainable development is social order, although the literature analysis indicated that multidimensional empirical research in this area is scarce. The main goal of this article was to present the diversity of indicators characterizing social development in EU Member States in the context of progress made by each of them in implementing the concept of sustainable development between 2014 and 2018. The purpose of this article was also to compare Poland with the other EU countries in the years 2014 and 2018. The research procedure consisted of two stages. The first stage was to analyse and assess the regional differentiation of the values of variables explaining social development in the EU in the context of implementing the concept of sustainable development. The second stage envisaged a multidimensional assessment of the diversity of the thematic areas identified in the first stage, as well as a characterization of social development in the EU in the context of implementing the concept of sustainable development. Based on the obtained results, a conclusion could be drawn that many countries are witnessing positive trends which bring them closer to the successful implementation of the sustainable development paradigm—one of the principal priorities of the Europe 2020 strategy, a long-term socio-economic program of the EU. The multidimensional analysis also showed that the level of social development in the context of sustainable development differs across the EU. Particularly notable differences among EU countries could be observed for the variables denoting labour market and health, with demography being the least diversified of all areas. In Poland, the indicators regarding poverty and social exclusion improved significantly as a result of the implementation of numerous social programs. In addition to that, a positive change in education indicators was also reported in Poland. This favourable trend indicates that some of the goals set out in the Europe 2020 strategy have already been met by Poland while others are becoming increasingly attainable.

Keywords: social development; sustainable development; EU countries; ratio analysis; multidimensional assessment

1. Introduction

This article discusses the assessment of progress that was made in the European Union in the implementation of the concept of sustainable development in the social aspect between the years 2014 and 2018. This study covered all EU countries, with particular emphasis on the situation of Poland.

The concept of sustainable development combines spatial, economic and social planning, allowing for a better coordination of activities and their increased effectiveness. Given the scope of interest and also the limited framework of this study, in this paper we focused solely on social development, using a number of indicators to determine it.

EU Member States are characterised by significant differences in the level of social development. Each country is different, and the dynamics of change also vary. These disparities may adversely affect economic changes in European countries and increase living standards and social cohesion. Therefore, determining the conditions for social development is an extremely important research problem in both economic science theory and in economic practice. In the EU, it can be observed that there has been a division into regions characterised by dynamic development and regions that significantly deviate from this level [1–17]. In this situation, it becomes very important to continuously monitor changes in the level of social development of EU countries and to establish the rank occupied by a given country in relation to the others. The social development of individual countries and regions is now becoming a function of a growing number of factors which have traditionally remained on the fringes of interest in economic sciences. In view of the widespread criticism of attempts at a one-dimensional approach to this type of analysis (e.g., on the basis of the GDP per capita index), attempts were made in the literature on the subject to apply a multidimensional analysis of this issue, based on methods of numerical taxonomy. This means that it is necessary to make decisions related to both the selection of features that will best reflect the studied phenomenon, as well as to the selection of appropriate methods of analysis. Such a holistic approach to social development issues requires an interdisciplinary approach, which is clearly articulated in the concept of sustainable development.

The rationale for the implementation of this study was the necessity of looking for and taking into account new indicators that will fully reflect all areas related to the implementation of the sustainable development strategy. The importance of issues concerning social development and its regional diversity has been recognised and emphasised already in the middle of the last century.

A number of measures have been taken in recent decades to close regional gaps in the level of social development in the EU, both at the local and national level, but despite this, the problem still remains. Therefore, social development issues are fundamental components of the multi-faceted actions for sustainable development. The top objective of "A European Union strategy for sustainable development" is "to identify and develop actions to enable the EU to achieve a continuous long-term improvement of quality of life through the creation of sustainable communities able to manage and use resources efficiently, able to tap the ecological and social innovation potential of the economy and in the end able to ensure prosperity, environmental protection and social cohesion". In contrast, the main social objectives set out in the "European Union strategy for sustainable development" are the eradication of poverty and social marginalisation, tackling demographic challenges, equal opportunities and inclusion as well as health and quality of life [18]. They correspond to the objectives formulated in the Europe 2020 Strategy (increasing the employment of people aged 20–64 to 75%, lowering the percentage of young people who do not continue education below 10%, increasing to at least 40% the percentage of people aged 30–34 with higher or equivalent education, reducing the number of people at risk of poverty and social exclusion by at least 20 million) [19].

The social aspects of sustainable development are also included in the UN Agenda 2030, adopted by world leaders in 2015, which provides a new global framework for sustainable development and sets 17 sustainable development goals. The Agenda expresses the commitment to eradicate poverty and achieve sustainable development worldwide by 2030, so that no one is left out and many of its objectives are directly or indirectly linked to social development, which justifies the need for research into progress in this area (e.g., Goal 1—no poverty, Goal 2—zero hunger, Goal 3—good health and well-being in life, Goal 4—quality education, Goal 8—decent work and economic growth and others) [2,20–22]. However, given the member states' past successes in achieving the social objectives and their capacity to achieve the newly agreed objectives, the national targets have been differentiated in order to make the strategic objectives realistic. For this reason, an additional step has

been taken to adapt the pan-European targets to national capabilities and to agree on the final list of national targets [23]. As a result, e.g., for Poland, the following values were established: increasing the employment of people aged 20–64 to 71%, lowering of the percentage of young people who do not continue education to below 4.5%, increasing the percentage of people aged 30–34 with higher or equivalent education to at least 45%, reducing the number of people at risk of poverty and social exclusion by at least 1.5 million [24]. As already indicated in the research proceedings, two years were taken into account for comparison purposes. These years are 2014 (this year's data for 28 EU countries were available, after the inclusion of Croatia) and 2018 (for this year, the latest values of the analysed indicators were available, taking into account 28 EU countries before the exclusion of the UK).

As a result of this research objective, it will be possible to assess in which areas the monitoring of social development in the EU has resulted in positive changes and where further improvements are still needed.

Measuring and monitoring the implementation of the concept of sustainable development is an important aspect of the assessment of the functioning of EU countries [25–39]. One of the pivots of sustainable development is social order, but literature analysis indicates that such empirical research pursued in a multidimensional approach is scarce. Therefore, the purpose of this study was to present the diversity of indicators characterizing social development in EU Member States in the context of progress each of them made in implementing the concept of sustainable development between 2014 and 2018. The purpose of the article was also to compare Poland to other EU countries during the period of 2014–2018. World Bank and Eurostat data were used to assist our investigation. Analysis results may contribute to the better evaluation of the outcomes of the development policy of Poland and other EU countries to date. The article consists of two parts. The first part reviews the literature and presents the most important issues regarding the social aspects of the sustainable development concept. The second part puts forward the concept of indicator analysis and Hellwig's method on the basis of which synthetic measures were constructed. In addition, this section also presents the findings from the analysis and assessment of the social development of EU countries in the context of sustainable development.

2. Social Development in the Concept of Sustainable Development as per Literature Review

An indisputable challenge for EU countries, including Poland, is the implementation of the concept of sustainable development, which embraces the possibility of transforming society and its various spheres of functioning in such a way as to secure resources and enable subsequent generations to benefit from the achievements of others. Let us note here that, according to this concept, economic growth, social progress and environmental order are all perceived as interdependent phenomena, which implies the need for synergistic problem-solving on the path towards sustainable development [40]. The implementation of sustainable development is therefore associated with a shift in management of all forms towards a systematic and integrated approach of an interdisciplinary nature [41–48].

The theory of sustainable development draws from the criticism of the excessive exploitation of the natural environment, which triggered the global threat of various disasters, including natural ones. This problem is becoming ever-more present, with the rapid advancement of civilization, originally identified with increased general well-being and the abuse of natural resources disturbing the global ecosystem and therefore leading to its degradation that may ultimately spell the doom of the human species [49].

It is important to integrate social, economic and environmental phenomena on the basis of order in terms of ethics and morality. The integrity of the order is implemented through the balanced protection of natural capital (environment), social and human capital, and anthropogenic capital (that which is created by man, especially cultural and economic) [50]. The concept of sustainable development assumes that the natural environment and its resources are limited and that economic growth cannot be pursued at the expense of prudent environmental management. Advocates of sustainable development

see the quality of human life as the main development benchmark. In their view, development simply cannot be founded on a deteriorating resource base.

The concept of sustainable development combines spatial, economic and social planning, allowing for a better coordination of activities and their increased effectiveness. Social development is an important pillar of sustainable development, acting as a transition from viewing economic growth as a prosperity prerequisite towards viewing economic growth as a prerequisite for building social well-being. The concept of social development is ambiguous and defined by many characteristics derived from various areas of life [51–54]. Most often, social development is associated in the literature with the process of quantitative and qualitative changes being observed in a specific social area, such as education, health or societal affluence. In the narrower sense, it means that a process of significant and irreversible change in social structures which can be attributed to a specific direction and determination caused by concrete natural, demographic, social, economic and political factors [23,55–58]. Social development can also be associated with the process of planned social change whose aim is to promote human well-being in the context of comprehensive economic development. All "activities that favor such development are now called good development or human-centered social development" [59]. Social change can be progressive, stagnant or regressive. Thus, the description of changes is unambiguously evaluative and at the same time subjective, as the same change examined differently by different people may be characterized differently [59]. The social dimension of sustainable development is expressed in the social acceptance of the outcomes of social and economic policy. The large number of definitions of sustainable development and its various dimensions points to the importance of social issues that must remain the focal point of sustainable development [50,60–67].

Instruments helpful in monitoring the implementation of sustainable development include sustainability indicators. The measurement and assessment of the effects of the implementation of the concept of sustainable development refer to the issue of the accuracy of the selection of various indicators that are an information diagnostic tool for managing the economic, social and environmental dimensions.

There is a number of indicators available globally that compare countries in terms of several different aspects of sustainable development [68]. In the comprehensive assessment of the social development of countries and regions, various indices are applied, including those concerning health, poverty, the labour market or other area of social life. Based on the value of such measures, the level and dynamics of a country's or a region's social development are assessed and benchmarked against other territorial areas [57].

3. Methods

This study uses statistical methods to contribute to the initial objective of the study, which is " ... to show the diversity of indicators characterising social development in the EU Member States ... " Hence, the methods of descriptive statistics and the Hellwig's method, which showed if and what are the differences between the indicators characterising social development in the context of sustainable development in EU countries. The conclusions of the analysis may serve as a basis for further research on e.g., the factors influencing social development in EU countries.

The research procedure consists of two stages. The first stage is to analyse and assess the regional differentiation of the values of variables explaining social development in the EU in the context of implementing the concept of sustainable development. These have been broken down into five thematic areas: (1) poverty and exclusion, (2) health, (3) labour market, (4) education, and (5) demography. Thematic areas were illustrated by selected indicators which in our view best illustrate social development and the idea of sustainable development (Table 1).

Table 1. Indicators for assessing social development in the context of implementing the concept of sustainable development.

Symbol	Variable	Unit of Measure	Variable Characteristics
		Poverty and Social Exclusion	
X1—destimulant	People at risk of poverty or social exclusion *	% of population	This indicator corresponds to the sum of persons who are at risk of poverty after social transfers, severely materially deprived or living in households with very low work intensity.
X2—destimulant	People at risk of poverty after social transfers *	Quantity	The persons with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers).
X3—destimulant	Severely materially deprived people *	Percentage	The indicator measures the share of severely materially deprived persons who have living conditions severely constrained by a lack of resources. They experience at least 4 out of the 9 following deprivation items: cannot afford (1) to pay rent or utility bills, (2) keep home adequately warm, (3) face unexpected expenses, (4) eat meat, fish or a protein equivalent every second day, (5) a week holiday away from home, (6) a car, (7) a washing machine, (8) a colour TV, or (9) a telephone. The indicator is part of the multidimensional poverty index.
X4—destimulant	People living in households with very low work intensity *	Percentage of total population aged less than 60	The indicator is defined as the share of people aged 0–59 living in households with very low work intensity. These are households where on average the adults (aged 18–59, excluding students) work 20% or less of their total work potential during the past year. The indicator is part of the multidimensional poverty index.
X5—destimulant	In work at-risk-of-poverty rate % of employed persons aged 18 or over *	% of employed persons aged 18 or over	Individuals (18–64) who are classified as employed according to their most frequent activity status and are at risk of poverty.
X6—destimulant	At risk of poverty or social exclusion rate for elderly (65+) *	Percentage	The sum of elderly (65+) who are at-risk-of-poverty or severely materially deprived or living in (quasi-)jobless households (i.e., with very low work intensity) as a share of the total population in the same age group.
X7—destimulant	Median relative income of elderly people *	Persons aged 65 years and over compared to persons aged less than 65 years	The indicator is defined as the ratio between the median equivalised disposable income of persons aged 65 or over and the median equivalised disposable income of persons aged between 0 and 64.
		Public health	
X8—stimulant	Life expectancy at birth **	Years	Life expectancy at birth is defined as the mean number of years that a new-born child can expect to live if subjected throughout their life to the current mortality conditions (age-specific probabilities of dying).

Table 1. *Cont.*

Symbol	Variable	Unit of Measure	Variable Characteristics
X9—stimulant	Healthy life years at birth *	Number of years	The indicator healthy life years (HLY) at birth measures the number of years that a person at birth is still expected to live in a healthy condition. HLY is a health expectancy indicator which combines information on mortality and morbidity.
X10—stimulant	Healthy life years at age 65 *	Number of years	The indicator healthy life years (HLY) at age 65 measures the number of years that a person at age 65 is still expected to live in a healthy condition. HLY is a health expectancy indicator which combines information on mortality and morbidity.
X11—stimulant	Share of people with good or very good perceived health *	% of population aged 16 or over	The indicator is a subjective measure on how people judge their health in general on a scale from "very good" to "very bad". It is expressed as the share of the population aged 16 or over perceiving itself to be in "good" or "very good" health.
X12—destimulant	Infant mortality rate **	Per 1000 live births	Infant mortality rate is the number of infants dying before reaching one year of age, per 1000 live births in a given year.
X13—destimulant	Deaths and crude death rate number—per 1000 persons **	Number per 100,000 persons aged less than 65	Crude death rate indicates the number of deaths occurring during the year, per 1000 population, estimated at midyear. Subtracting the crude death rate from the crude birth rate provides the rate of natural increase, which is equal to the rate of population change in the absence of migration.
		Labour market	
X14—stimulant	Employment rate % of population aged 20 to 64 *	Percentage	The employment rate is calculated by dividing the number of persons aged 20 to 64 in employment by the total population of the same age group. The employed population consists of those persons who during the reference week did any work for pay or profit for at least one hour, or were not working but had jobs from which they were temporarily absent.
X15—stimulant	Employment rate of older workers *	Percentage of total population	The employment rate of older workers is calculated by dividing the number of persons in employment and aged from 55 to 64 by the total population of the same age group.
X16—destimulant	Unemployment rate *	Total, % of labour force	The unemployment rate is the number of unemployed people as a percentage of the labour force, where the latter consists of the unemployed plus those in paid or self-employment. Unemployed people are those who report that they are without work, that they are available for work and that they have taken active steps to find work in the last four weeks.
X17—destimulant	Long-term unemployment rate % of active population *	Percentage	The long-term unemployment rate expresses the number of long-term unemployed aged 15–74 as a percentage of the active population of the same age.

Table 1. *Cont.*

Symbol	Variable	Unit of Measure	Variable Characteristics
X18—destimulant	Youth unemployment rate *	Percentage	The youth unemployment rate is calculated by dividing the number of unemployed persons aged 15 to 24 by the total active population of the same age group.
X19—destimulant	Labour productivity per person employed and hour worked *	Percentage of EU 27 (from 2020) total (based on million purchasing power standards), current prices	Labour productivity per hour worked is calculated as the real output per unit of labour input (measured by the total number of hours worked). Measuring labour productivity per hour worked provides a better picture of productivity development in the economy than labour productivity per person employed, as it eliminates differences in the full time/part time composition of the workforce across countries and years.
		Education	
X20—stimulant	Tertiary educational attainment rate *	% of population aged from 30 to 34	The indicator is defined as the percentage of the population aged 30–34 who have successfully completed tertiary studies (e.g., university, higher technical institution, etc.).
X21—stimulant	Adult participation in learning *	Percentage	The indicator measures the share of people aged 25 to 64 who stated that they received formal or non-formal education and training in the four weeks preceding the survey (numerator). The denominator consists of the total population of the same age group, excluding those who did not answer the question 'participation in education and training'.
X22—destimulant	Young people neither in employment nor in education and training *	% of the total population in the same age group	The indicator for young people neither in employment nor in education and training (NEET) provides information on young people aged 15 to 24 who meet the following two conditions: (a) they are not employed (i.e., unemployed or inactive according to the International Labour Organisation definition) and (b) they have not received any education or training in the four weeks preceding the survey. Data are expressed as a percentage of the total population in the same age group, excluding the respondents who have not answered the question 'participation to education and training' and in change over 3 years (in % points).
X23—destimulant	Early leavers from education and training *	% of the population aged 18–24 with at most lower secondary education and not in further education or training	The indicator is defined as the percentage of the population aged 18–24 with at most lower secondary education and who were not in further education or training during the last four weeks preceding the survey.

Table 1. *Cont.*

Symbol	Variable	Unit of Measure	Variable Characteristics
		Demographic Changes	
X24—destimulant	Overcrowding rate *	Percentage	This indicator is defined as the percentage of the population living in an overcrowded household. A person is considered as living in an overcrowded household if the household does not have at its disposal a minimum of rooms equal to: -one room for the household; -one room by couple in the household; -one room for each single person aged 18 and more; -one room by pair of single people of the same sex between 12 and 17 years of age; -one room for each single person between 12 and 17 years of age and not included in the previous category; -one room by pair of children under 12 years of age.
X25—stimulant	Population density **	People per sq. km of land area	Population density is the mid-year population divided by the land area in square kilometres. Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship—except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of their country of origin.
X26—stimulant	Live births and crude birth rate number *	Number—per 1000 persons	Live births are the births of children that showed any sign of life. The crude birth rate is than the ratio of the number of live births during the year to the average population in that year. The value is expressed per 1000 persons.
X27—stimulant	Immigration persons *	Per 1000 persons	Immigrant is a person undertaking an immigration. Immigration is the action by which a person establishes their usual residence in the territory of a Member State for a period that is, or is expected to be, of at least 12 months, having previously been usually resident in another Member State or a third country.
X28—destimulant	Emigration persons *	Per 1000 persons	Emigrant is a person undertaking an emigration. Emigration is the action by which a person, having previously been usually a resident in the territory of a Member State, ceases to have their usual residence in that Member State for a period that is, or is expected to be, of at least 12 months.
X29—destimulant	Old-age-dependency ratio *	Per 100 persons	This indicator is the ratio between the number of persons aged 65 and over (age when they are generally economically inactive) and the number of persons aged between 15 and 64. The value is expressed per 100 persons of working age (15–64).

Source: own study based on Eurostat and World Bank data [69–72], * data derived from Eurostat, ** data derived from World Bank.

The level of social development as an economic phenomenon is of a complex nature and is determined by many features from different areas of life. The complexity of social development categories determines the necessity of using a set of measures in research and comparative analyses. Indicators of sustainable development are helpful in monitoring social development. On the basis of the recommendations contained in the UN document Global Programme of Action, Agenda 21, adopted at the Rio de Janeiro Conference in 1992. 33 [73], a set of 130 indicators describing the development of sustainable development was developed by the United Nations Commission on Sustainable Development (UNCSD). These indicators form the so-called "three levels" of Sustainable Development Indicators (SDIs). The current set of EU sustainable development indicators consists of 10 subjects (reflecting, inter alia, the seven challenges of the Sustainable Development Strategy). The subjects are progressively moving from economic, social and environmental to institutional and global partnership dimensions. They also reflect the main objective—to achieve a thriving, sustainable economy and to implement the principles of good governance.

The indicators of sustainable development, defined by Eurostat, serve to monitor the "European Union strategy for sustainable development" of 2001, [18], which was updated in 2006 and adopted as the "Renewed EU strategy for Sustainable Development" [74]. Due to their multiplicity, the analysis covered the indicators relating only to social development, which allowed to look at the changes taking place in this respect between 2014 and 2018. In the selection of diagnostic variables, sustainable development indicators were used, which were assigned to the category of social governance. It was decided to select those which were characterised by the availability of comparable data and indicated the state and prospects of social development. According to the EU recommendation, the indicators for individual countries were calculated using an uniform methodology.

The first stage of the research was carried out on the basis of selected descriptive statistics, i.e., minimum value, maximum value, average, and coefficient of variation. The aim of the applied methods of descriptive statistics was to summarize the data set and to draw some basic conclusions and generalisations. Descriptive statistics were used as the first and basic step in the analysis of the collected data. The aim of this stage was therefore to initially identify the situation regarding the level of social development in the EU Member States in the context of implementing the concept of sustainable development. Further in-depth research was conducted in the second stage.

The second stage envisages a multidimensional assessment of the diversity of the thematic areas identified in the first stage and characterizing social development in the EU in the context of implementing the concept of sustainable development. In order to assess particular areas of social development, i.e., (1) poverty and exclusion, (2) health, (3) the labour market, (4) education and (5) demography, Hellwig's method was used in the EU Member States [75]. This method is within the scope of multidimensional comparative analysis and broader taxonomy. The basis of Hellwig's method is a synthetic variable (in the literature on the subject one can find other terms for a synthetic variable, such as: aggregate variable, synthetic measure, synthetic development measure, taxonomic measure of development and aggregate development measure), the values of which were estimated for each subject area on the basis of the indicators presented in Table 1. Hellwig's method facilitated the comparison between EU countries in terms of each area—which made it possible to create rankings of EU countries, i.e., to rank EU countries from the most to the least developed within each area. All EU-28 countries were included in the analysis.

3.1. First Stage

The concept of social development is not easy to define. Let us note that social development is a process of creating and increasing the real size of a social product. It covers both quantitative and qualitative changes. In addition to structural changes, this process includes changes accompanying these phenomena in institutions and economic relations [76]. Its characterization, therefore, requires various explanatory indicators in order to be accurate.

This article presents the analysis and assessment of 32 indicators characterizing five areas of social development in the context of implementing the concept of sustainable development (Table 1). When selecting indicators, we also considered the aspects that were highlighted in the EU Sustainable Development Strategy and also the availability of statistical data at the national level during the period covered by this study. The explanatory variables were selected on the basis of substantive, statistical and formal criteria (primarily relevance, completeness and accessibility for the surveyed countries in 2014 and 2018). Statistical measures such as maximum value, minimum value, arithmetic mean and coefficient of variation were also used.

The final selection of characteristics describing EU countries in terms of social development was based on the following criteria:

1. Universality—diagnostic features describing the examined phenomenon are measurable and are a source of relevant information in the area under analysis;
2. Variability—the analysed features sufficiently differentiate the examined objects, for this purpose the value of the coefficient of variation was determined for the analysed features;
3. Degree of correlation—the evaluation of the degree of correlation between the variables was made with the use of Pearson's coefficient of linear correlation (high value of the coefficient of correlation indicates a strong correlation relationship between two diagnostic features and means that they are a medium of similar information);
4. Significance—it was assumed that features are important if they are difficult to reach high values—in order to check the importance of traits and thus eliminate invalid traits, asymmetry coefficient values were calculated.

3.2. Second Stage

Given that social development is a complex category, our study used taxonomic (synthetic) measures constructed on the basis of a linear-ordering method called Hellwig's method [75]. Synthetic measures were constructed for each thematic area indicated in the first stage of research based on the partial indicators (the so-called potentially explanatory variables). The discriminatory ability of indicators and their capacity, i.e., the degree of correlation with other variables, was examined. From the set of indicators, those for which the value of the coefficient of variation was below the arbitrarily determined critical threshold ($r^* = 10\%$) were eliminated. Ultimately, the following indicators were removed from the tests: X8, X9, X14. Once there, an analysis of Person's correlation matrix was performed and indicators exceeding the threshold value (usually set at $r^* = 0.7$) were eliminated from further considerations. In this way, from the set of indicators describing individual thematic areas of social development, the following indicators were removed: X2, X16, X17.

In the linear ordering procedure, an important step in the procedure is to determine the nature of the variables due to the way they affect the described phenomenon, i.e., the division of variables into stimulants, destimulants and nominants (stimulants are the variables, whose increasing values indicate an increase in the level of the examined phenomenon; destimulants are the variables, whose decrease in value indicates an increase in the level of the examined phenomenon; and nominants are variables whose specific level, the so-called optimal level, indicates a high value of the examined phenomenon, while values smaller and larger than this level indicate a lower level of phenomena; the concepts of variable stimulants and destimulants were introduced to the literature by Z. Hellwig [75], and the concept of variable nominant by T. Borys [77]). On the basis of substantive analysis, the nature of the variables was indicated, including stimulants and destimulants (Table 1). None of the variables had a nominant nature. Destimulants were transformed into stimulant variables using the following Equation (1):

$$x_{ij}^S = 1 - x_{ij}^D \quad (1)$$

In what concerns taxonomic methods, one of the main requirements for final diagnostic variables is their comparability (addition postulate). The next stage was the process of normalization of indicators. The following standardization Equation (2) was used in this study:

$$z_{ij} = \frac{x_{ij} - \overline{x}_j}{S_j} \quad (2)$$

z_{ij}—normalized values of the *j*-variable for the *i*-object (EU country),
x_{ij}—empirical values of the *j*-variable for the *i*-object (EU country),
$\overline{x}_j$—arithmetic mean of the *j*-variable,
S_j—standard deviation of the *j*-variable.

Subsequently, the coordinates of the benchmark and the distance of objects (EU countries) from the benchmark were determined:

- Coordinates (Equation (3)) of the pattern:

$$z_{0j} = \begin{cases} \max_i\{z_{ij}\} \text{ for variable stimulants} \\ \min_i\{z_{ij}\} \text{ for variable destimulants} \end{cases} \quad (3)$$

z_{ij}—normalized values of the *j*-variable for the *i*-object

- Distance of objects from the pattern (Equation (4)):

$$d_{i0} = \sqrt{\frac{1}{n}\sum_{i=1}^{m}(z_{ij} - z_{0j})2} \quad (4)$$

The last stage of the research procedure was the calculation of the synthetic measures and the developing of EU country rankings for specific thematic areas:

- Values (Equation (5)) of the synthetic variable:

$$s_i = 1 - \frac{d_{i0}}{d_0} \quad (5)$$

where: in general, $s_i \in [0;1]$, $\max_i\{s_i\}$ – best object, $\min_i\{s_i\}$ – worst object, $d_0 = \overline{d}_0 + 2S_d$, $\overline{d} = \frac{1}{n}\sum_{i=1}^{n} d_{i0}$.

4. Results and Discussion

An indicator analysis and the taxonomic analysis of social development in the context of implementing the concept of sustainable development in the EU were carried out in each thematic area in a spatial and temporal perspective.

The first stage of the research involved the indicator analysis of five thematic areas. The first area studied was poverty and social exclusion, which was characterized on the basis of seven partial indicators (the so-called diagnostic variables) (Table 2).

Table 2. Descriptive characteristics of the variables explaining poverty and social exclusion in the EU between 2014 and 2018.

Descriptive	Year	Descriptive Statistics				
		Min	Max	Poland	UE-28	Variability
X1	2014	14.8 (Czech Republic)	40.3 (Romania)	24.7	24.4	28%
	2018	12.2 (Czech Republic)	32.8 (Bulgaria)	18.9	21.9	25%
X2	2014	9.7 (Czech Republic)	25.1 (Romania)	17.0	17.2	23%
	2018	9.6 (Czech Republic)	23.5 (Romania)	14.8	17.1	23%
X3	2014	1.0 (Sweden)	33.1 (Bulgaria)	10.4	8.9	76%
	2018	1.3 (Luxembourg)	20.9 (Bulgaria)	4.7	5.9	74%
X4	2014	6.1 (Luxembourg)	21.0 (Ireland)	7.3	11.3	32%
	2018	4.5 (Czech Republic)	14.6 (Greece)	5.6	8.8	31%
X5	2014	3.6 (Czech Republic)	19.8 (Romania)	10.6	9.5	42%
	2018	3.1 (Finland)	15.3 (Romania)	9.7	9.5	37%
X6	2014	6.4 (Luxembourg)	47.8 (Bulgaria)	18.2	17.8	49%
	2018	9.6 (Denmark)	49.0 (Latvia)	18.1	18.6	52%
X7	2014	0.63 (Estonia)	1.1 (Luxembourg)	0.99	0.94	13%
	2018	0.57 (Estonia)	1.1 (Luxembourg)	0.91	0.91	15%

Source: own study based on Eurostat and World Bank data.

All the adopted indicators are destimulants, meaning their higher values indicate a higher level of poverty and social exclusion. These indicators point to the multi-faceted nature of the phenomenon in question, which poses a challenge from the point of view of sustainable development.

Poverty and social exclusion—a consequence of unemployment and/or low income—affect the quality of life and the ability to meet the needs recognized in Europe as basic.

One of the analysed measures of poverty and social exclusion was the at-risk-of-poverty rate. This indicator reflects poverty and social exclusion, which is one of the main challenges for sustainable development. Target 1 on the 2030 Agenda challenges countries around the world to eliminate poverty in all its forms. Its effective implementation requires a change in social policy and the assessment of the level of effectiveness of the implemented mechanisms, setting institutional responsibility for the implementation of goals and tasks in practice both at the national and international level [78,79].

In 2018, the most favourable, i.e., having the lowest value of the at-risk-of-poverty rate was reported in Czech Republic—12.2%, Slovenia—16.2% and Slovakia—16.3%, while the highest, meaning the least favourable, was reported in Bulgaria—32.8%, Romania—32.5% and Greece—31.8%. The differences in indicator values between Member States were mainly due to differences in the structure of the labour market, social security system, budgetary and fiscal situation. In Poland in 2018, the percentage of people at risk of poverty or social exclusion stood at 18.9%, 11th in the EU. During the period 2014–2018, almost all EU countries except Lithuania, Luxembourg and the Netherlands, saw a decline in their at-risk-of-poverty rate. In Poland, this indicator decreased by 23.5%, while the EU average decreased by 10.6%, pointing to a clear improvement and presumably also a tangible result of the relevant social programs having been implemented in Poland in the meantime. In addition, let us note that in 2018 the share of people living in relative poverty was below the EU average in Poland. The data show that, in 2018, nearly every fourth EU citizen (21.8%) was affected by at least one form of poverty from among income poverty, severe material deprivation or lack of access to employment. Clearly, this level of poverty and social exclusion is not conducive to meeting the Europe 2020 target.

The material deprivation rate was another measure of poverty and social exclusion. In individual member countries, between 2014 and 2018, large differences in the value of the material deprivation rate could be observed (the coefficient of variation was around 76–74%). In 2018, material deprivation in the EU ranged from 20.9% in Bulgaria to 1.3% in Luxembourg. Persistent differences between

Member States may be due to a combination of factors such as differences in living standards, the general level of development or redistribution policies. In Poland in 2018, compared to 2014, this indicator markedly decreased, from 10.4% to 4.7%, and was lower than the EU average.

The next measure of poverty and social exclusion was the very low work intensity rate. In 2018, almost 8.8% of the EU population aged 0–59 lived in households whose members worked at most at 20% of their potential. This means that in these households there was either no work or their members worked with little engagement. In the analysed period, differences in the indicator value were reported in individual EU countries, e.g., in 2018, it was less than 6% in Czech Republic, Estonia, Slovakia, Slovenia, Malta, Poland and Hungary, and over 14% in Greece. In the analysed period, in the EU and in Poland, positive trends were noted, with this value having decreased by 22.1% and 23.3%, respectively.

Social inclusion trends in the EU observed between 2014 and 2018 were overall quite promising, in particular with regard to poverty reduction. A clearly favourable trend was reported for the risk of poverty and social exclusion, as reflected in the reduced number of people at risk of severe material deprivation and of those living in households with very low work intensity. However, unfavourable trends were also observed. In almost half of the EU countries, in 2018 compared to 2014, the percentage of the working poor and the risk of poverty for the elderly (65+) increased.

The next area taken under review was health, which was characterized on the basis of six partial indicators (the so-called diagnostic variables) (Table 3).

Table 3. Descriptive characteristics of variables explaining public health in the EU in 2014 and 2018.

Descriptive	Year	Descriptive Statistics				
		Min	Max	Poland	UE-28	Variability
X8	2014	74.5 (Bulgaria)	83.3 (Spain)	77.8	80.9	4%
	2018	75.0 (Bulgaria)	83.5 (Spain)	77.7	81.0	3%
X9	2014	53.4 (Latvia)	52.3 (Latvia)	61.3	61.5	8%
	2018	73.4 (Malta)	72.8 (Sweden)	62.4	63.6	8%
X10	2014	3.9 (Slovakia)	15.9 (Sweden)	7.8	8.6	32%
	2018	4.4 (Slovakia)	15.7 (Sweden)	8.5	10.0	32%
X11	2014	45.0 (Lithuania)	82.5 (Ireland)	58.3	67.4	15%
	2018	44.0 (Lithuania)	84.1 (Ireland)	59.2	69.2	15%
X12	2014	1.8 (Slovenia)	8.2 (Romania)	4.2	3.7	41%
	2018	1.6 (Estonia)	6.0 (Romania)	3.8	3.5	33%
X13	2014	6.3 (Ireland)	15.1 (Bulgaria)	9.9	9.8	22%
	2018	6.4 (Ireland)	15.4 (Bulgaria)	10.9	10.5	22%

Source: own study based on Eurostat and World Bank data.

Public health in the context of sustainable development is considered as a set of factors that affect a person (individual) and their environment. The links between health and the concept of sustainable development are multidimensional and span many areas, including the quality of life, the impact of the environment on society's health, which in turn is shaped by production patterns and the costs of carrying out health tasks. Good health emerges as a basic component of well-being, next to material resources, a sense of security, leisure, and others. Good health enables independent functioning in a society, making it possible to provide for self and family and self-realize [80].

The basic measure used to assess the quality of life in society is healthy life years at age 65, simultaneously reflecting two characteristics of the population, life expectancy and health. It therefore supplements the projected number of years of life with information about its quality (as opposed to the life expectancy rate which only determines life years alone). In 2018, Europeans' healthy life years at 65 was 10, up 1.4 years compared to 2014. In Poland, these numbers were 7.8 and 8.5, respectively, well below the EU average. For comparison, the highest value for this measure in both 2014 and 2018 was reported in Sweden—15.9 and 15.7, respectively.

In what concerns public health, sustainable social development is also measured by life expectancy at birth. In the studied period, this rate remained unchanged and stood at approximately 81 years in the EU. In Poland, the average life expectancy is slightly lower than the EU average (by approximately 3 years). This indicator is characterized by the lowest coefficient of variation (3–4%) of all 29 variables analysed, suggesting that there is no significant regional variation in the EU in terms of life expectancy at birth.

A negative measure used to assess public health is the infant mortality rate. In 2014 and 2018, this indicator decreased in most EU countries, the exceptions being: Belgium, Czech Republic, Germany, France, Cyprus, Luxembourg, Malta and Portugal. In Poland, this indicator assumed in 2018 a more favourable value compared to 2014, but the downward trend was still less pronounced than the EU average. Let us note that this rate varies largely across EU countries, as has been evidenced by its high coefficient of variation, which was 41%, in 2014 and 33% in 2018.

Between 2014 and 2018, changes in public health were generally positive. The leading indicator in this respect shows that people now live longer, which is reflected in fewer deaths of chronic diseases and lower infant mortality. Having said that, these changes do not benefit everyone equally and there are still significant disparities regarding health status and access to healthcare in the EU.

Another important driver of social development in the context of sustainable development is the labour market. Six partial indices (the so-called diagnostic variables) were selected for its description (Table 4).

Table 4. Descriptive characteristics of variables explaining the labour market in the EU in 2014 and 2018.

Descriptive	Year	Descriptive Statistics				
		Min	Max	Poland	UE-28	Variability
X14	2014	53.3 (Greece)	80.0 (Sweden)	66.5	69.2	9%
	2018	59.5 (Greece)	82.4 (Sweden)	72.2	73.2	7%
X15	2014	34.0 (Greece)	74.0 (Sweden)	42.5	51.8	20%
	2018	40.5 (Luxembourg)	78.0 (Sweden)	48.9	58.7	17%
X16	2014	5.0 (Germany)	26.5 (Greece)	9.0	10.2	51%
	2018	2.2 (Czech Republic)	19.3 (Greece)	3.9	6.4	55%
X17	2014	1.4 (Sweden)	19.5 (Greece)	3.8	5.0	78%
	2018	0.7 (Czech Republic)	13.6 (Greece)	1.0	2.9	95%
X18	2014	7.7 (Germany)	53.2 (Spain)	23.9	22.2	49%
	2018	6.2 (Germany)	39.9 (Greece)	11.7	15.2	53%
X19	2014	44.0 (Bulgaria)	169.7 (Luxembourg)	73.8	100.5	29%
	2018	47.4 (Bulgaria)	194.5 (Ireland)	77.3	100.1	31%

Source: own study based on Eurostat and World Bank data.

In the EU in recent years, employment has been going up and unemployment has been going down. Between 2014 and 2018, the employment rate went from 69.2% up to 73.2% while unemployment went from 10.2% down to 6.8%. The increase in economic activity resulted mainly from the greater participation of older adults in the labour market. In what concerns the employment of older workers, it is clear that in 2018 compared to 2014 there was a stable upward trend across all EU countries except for Luxembourg. A noticeable increase in the employment of older adults can be associated with a number of different factors such as: improved health and extended life span, demographic changes (due to the low birth rate, the oldest generation is less burdened with caring for grandchildren) and greater needs for social presence. Retirement schemes below expectations are also an important driver of employment in the EU. Nevertheless, the 50% target laid out in the Lisbon Strategy—preceding the Europe 2020 strategy—has yet to be reached by all Member States. An example is Poland, which in the years 2014–2018 recorded an increase in the employment rate of older adults from 42.5% to 48.9%. Among the indicators analysed for the labour market, the landscape was most differentiated in

individual countries in terms of the long-term unemployment rate (%) of the active population (where the coefficient of variation in 2018 was 95%, up nearly 22% compared to 2014).

The fourth group of indicators monitoring social development is education, which was described by four partial indicators (the so-called diagnostic variables) (Table 5).

Table 5. Descriptive characteristics of variables explaining education in the EU in 2014 and 2018.

Descriptive	Year	Descriptive Statistics				
		Min	Max	Poland	UE-28	Variability
X20	2014	23.9 (Italy)	54.6 (Ireland)	42.1	37.9	23%
	2018	24.6 (Romania)	57.6 (Lithuania)	45.7	40.7	21%
X21	2014	1.5 (Romania)	31.9 (Denmark)	4.0	10.8	76%
	2018	0.9 (Romania)	31.4 (Sweden)	5.7	11.2	67%
X22	2014	6.5 (Luxembourg)	26.7 (Greece)	15.5	15.3	37%
	2018	5.7 (Netherlands)	23.4 (Italy)	12.1	12.9	35%
X23	2014	2.8 (Croatia)	21.9 (Spain)	5.4	11.2	49%
	2018	3.3 (Croatia)	17.9 (Spain)	4.8	10.5	44%

Source: own study based on Eurostat and World Bank data.

Between 2014 and 2018 in the EU, the high-school dropout rate among people aged 18–24 was regularly falling, only to lock in the range of 3.3–17.9% in 2018. If this trend persists, the Europe 2020 strategy's target of pushing the share of early leavers from education and training below 10% seems very much attainable. In 2018 in Poland, this indicator was 4.8%, down 0.6 percentage points compared to 2014. Furthermore, in 2018, a total of sixteen EU countries already crossed the threshold set out in the Europe 2020 strategy to reduce the number of early school leavers to less than 10%.

In 2018 compared to 2014, a steady increase in the percentage of higher education diploma holders could be observed in the EU, marking an increase from 37.9% to 40.7%. In 2018, the tertiary educational attainment rate was the lowest in Romania (24.6%) and the highest in Lithuania (57.6%); in Poland, it was 45.7%. This favourable trend certainly bodes well for the Europe 2020 target to increase the share of university diploma holders among people aged 30–34 to 40% by 2020. In the years 2014 and 2018, the rate of people with university diplomas increased in nearly all Member States, with only Hungary and Romania recording a slightly downward trend. This attests to the significance of investments in higher education that have been made to meet the demand for qualified labour, but also to the successful implementation of Bologna reforms in some Member States to reduce the duration of formal education. Already in 2018, as many as eighteen Member States crossed the Europe 2020 target, mostly those in Northern and Central Europe. At the other end of the scale, the lowest values for this indicator were reported in Italy (27.8%) and Romania (24.6%).

An important indicator is also adult participation in learning, which proved to be the most diversified among EU countries with the coefficient of variation at 67% in 2018. In this area, Poland ranks significantly below the EU average, indicating the need for greater participation of the elderly that would have a positive impact on their quality of life and favour the implementation of the sustainable development paradigm. Let us note here that the lack of education may also be the source of occupational discrimination against those in pre-retirement age, which may in turn aggravate the difficult financial situation of pensioners and their families and weaken the social bargaining chip of older adults.

The last area determining social development in the context of sustainable development is that of demography, described by six partial indicators (the so-called diagnostic variables) (Table 6).

Table 6. Descriptive characteristics of variables explaining demography in the EU in 2014 and 2018.

Descriptive	Year	Descriptive Statistics				
		Min	Max	Poland	UE-28	Variability
X24	2014	2.0 (Belgium)	49.4 (Romania)	44.2	16.7	83%
	2018	2.5 (Cyprus)	46.3 (Romania)	39.2	15.5	81%
X25	2014	18.0 (Finland)	1375.2 (Malta)	123.7	104.6	147%
	2018	18.1 (Finland)	1548.3 (Malta)	123.6	105.4	158%
X26	2014	8.3 (Italy)	21.4 (Portugal)	9.9	10.1	23%
	2018	7.3 (Italy)	20.6 (Portugal)	10.2	9.7	23%
X27	2014	1.0 (Slovakia)	40.6 (Luxembourg)	5.8	ND	94%
	2018	1.3 (Slovakia)	55.6 (Malta)	5.6	5.4	91%
X28	2014	0.7 (Slovakia)	28.0 (Cyprus)	7.1	ND	75%
	2018	0.6 (Slovakia)	23.2 (Luxembourg)	5.0	ND	65%
X29	2014	19.0 (Slovakia)	33.1 (Italy)	21.2	28.2	14%
	2018	20.6 (Luxembourg)	35.2 (Italy)	25.3	30.5	13%

Source: own study based on Eurostat and World Bank data.

Demographic trends were given special attention in the EU Sustainable Development Strategy and the national documents of individual Community members, as they help forecast society's aging process that has been consistently leading to the increased share of older people in the working age population. In the long-term perspective, unfavourable demographic changes, emigration and low birth rates can provoke a gap in the labour market which may upset the pension system and reduce the performance of social systems such as the health and social ones [81,82]. Our study shows that the old-age-dependency ratio in 2018 was the most favourable in Luxembourg and the least favourable in Italy. Overcrowded households are the most common phenomenon in Romania and the least common in Belgium, which also reflects the material situation of these populations.

In the second stage of research, we performed a multidimensional assessment of the five thematic areas of social development of the EU countries in the context of progress made in implementing the concept of sustainable development in 2014 and 2018. We found that there is considerable disparity in the EU between each thematic area of social development in the context of implementing the concept of sustainable development. These differences relate, among others, to the level of the value of synthetic measures that mark the distance of a given area from the benchmark and the position of EU countries in the rankings for individual thematic areas (Tables 7 and 8).

Table 7. Synthetic measures of the social development of EU countries in 2014 and 2018.

EU Countries	2014					2018				
	Poverty and Exclusion	**Health**	**Labour Market**	**Education**	**Demography**	**Poverty and Exclusion**	**Health**	**Labour Market**	**Education**	**Demography**
Austria	0.5503	0.5048	0.4509	0.5751	0.1799	0.4932	0.4771	0.4277	0.5440	0.1652
Belgium	0.5677	0.6330	0.4212	0.4381	0.2665	0.4534	0.5223	0.4043	0.4435	0.2295
Bulgaria	−0.0166	0.1053	0.1591	0.1356	0.0665	0.0287	0.1196	0.1610	0.1163	0.0365
Croatia	0.3354	0.2188	0.0408	0.2404	0.0733	0.3640	0.1616	0.0734	0.2417	0.0562
Cyprus	0.4790	0.6625	0.2486	0.4182	0.1010	0.4326	0.5556	0.2977	0.4004	0.2005
Czech Republic	0.7212	0.4676	0.3840	0.3869	0.1606	0.8007	0.4181	0.3724	0.3832	0.1674
Denmark	0.6833	0.6271	0.6155	0.7607	0.1833	0.5501	0.5538	0.5518	0.6453	0.1658
Estonia	0.4367	0.2220	0.4292	0.4659	0.1225	0.3772	0.2152	0.3544	0.5374	0.1617
Finland	0.7111	0.5499	0.5416	0.6870	0.1243	0.5560	0.5475	0.4553	0.6662	0.0522
France	0.4786	0.6015	0.4298	0.5946	0.1973	0.4152	0.5160	0.3403	0.5363	0.1544
Germany	0.5242	0.3870	0.6135	0.3874	0.1427	0.5159	0.4889	0.5106	0.3565	0.1466
Greece	0.0608	0.4448	0.0114	0.1808	0.0495	−0.0398	0.4084	−0.0756	0.2530	0.0415
Hungary	0.2063	0.2096	0.2221	0.2803	0.1148	0.4172	0.2549	0.2296	0.2402	0.1454
Ireland	0.2685	0.7503	0.5813	0.4435	0.2845	0.3931	0.7798	0.6781	0.5757	0.2681
Italy	0.3214	0.4680	0.2693	0.0851	0.0641	0.1519	0.5333	0.2058	−0.0062	0.0267
Latvia	0.3029	0.0374	0.3192	0.3920	0.0985	0.2760	0.0132	0.2932	0.3963	0.0609
Lithuania	0.4498	0.1041	0.3673	0.4726	0.1242	0.2836	0.0535	0.3472	0.5046	0.1132
Luxembourg	0.3574	0.7008	0.4663	0.6649	0.2670	0.1928	0.4612	0.3505	0.7114	0.2064
Malta	0.5900	0.6460	0.2922	0.1716	0.4242	0.6468	0.4582	0.2966	0.2402	0.3470
Netherlands	0.6439	0.6423	0.6032	0.6546	0.2720	0.6196	0.5586	0.5231	0.6895	0.2387
Poland	0.4099	0.3707	0.2287	0.3970	0.1374	0.4792	0.3404	0.2116	0.4193	0.1364
Portugal	0.3677	0.2348	0.2458	0.2612	0.2501	0.4294	0.2335	0.2429	0.3344	0.2372
Romania	−0.1103	0.0805	0.1614	0.0656	0.1112	0.0093	0.1036	0.1328	−0.0201	0.0784
Slovakia	0.6064	0.2068	0.2674	0.2348	0.1329	0.5778	0.1967	0.2642	0.2759	0.1424
Slovenia	0.5665	0.5005	0.1913	0.5417	0.1704	0.6278	0.4451	0.2179	0.5290	0.1558
Spain	0.2052	0.6145	0.1467	0.1828	0.1302	0.2174	0.6511	0.1474	0.2030	0.1194
Sweden	0.6783	0.8007	0.6267	0.8480	0.1840	0.5817	0.7855	0.5172	0.8117	0.1673
United Kingdom	0.4947	0.5720	0.5512	0.5527	0.2666	0.3556	0.5297	0.4518	0.5036	0.2250
MIN	−0.1103	0.0374	0.0114	0.0656	0.0495	−0.0398	0.0132	−0.0756	−0.0201	0.0267
MAX	0.7212	0.8007	0.6267	0.8480	0.4242	0.8007	0.7855	0.6781	0.8117	0.3470
Average	0.4247	0.4415	0.3531	0.4114	0.1678	0.4002	0.4065	0.3208	0.4119	0.1516

Source: own study based on Eurostat and World Bank data.

Table 8. EU countries ranked by level of the social development in 2014 and 2018.

EU Countries	2014					2018				
	Poverty and Exclusion	**Health**	**Labour Market**	**Education**	**Demography**	**Poverty and Exclusion**	**Health**	**Labour Market**	**Education**	**Demography**
Austria	10	13	9	7	11	10	13	8	7	12
Belgium	8	7	12	13	6	12	10	9	13	5
Bulgaria	27	25	25	26	26	26	25	24	26	27
Croatia	20	22	27	21	25	19	24	27	22	24
Cyprus	13	4	19	14	23	13	5	15	15	8
Czech Republic	1	16	13	18	13	1	17	10	17	9
Denmark	3	8	2	2	10	8	6	2	5	11
Estonia	16	21	11	11	20	18	22	11	8	13
Finland	2	12	7	3	18	7	7	6	4	25
France	14	10	10	6	8	16	11	14	9	15
Germany	11	18	3	17	14	9	12	5	18	16
Greece	26	17	28	24	28	28	18	28	21	26
Hungary	24	23	22	19	21	15	20	20	24	17
Ireland	23	2	5	12	2	17	2	1	6	2
Italy	21	15	17	27	27	25	8	23	27	28
Latvia	22	28	15	16	24	22	28	17	16	23
Lithuania	15	26	14	10	19	21	27	13	11	21
Luxembourg	19	3	8	4	4	24	14	12	2	7
Malta	7	5	16	25	1	2	15	16	23	1
Netherlands	5	6	4	5	3	4	4	3	3	3
Poland	17	19	21	15	15	11	19	22	14	19
Portugal	18	20	20	20	7	14	21	19	19	4
Romania	28	27	24	28	22	27	26	26	28	22
Slovakia	6	24	18	22	16	6	23	18	20	18
Slovenia	9	14	23	9	12	3	16	21	10	14
Spain	25	9	26	23	17	23	3	25	25	20
Sweden	4	1	1	1	9	5	1	4	1	10
United Kingdom	12	11	6	8	5	20	9	7	12	6

Source: own study based on Eurostat and World Bank data.

Our research shows that, in both 2014 and 2018, the highest average value of the synthetic measure was reported in health and education, while the lowest was reported in demography. Most often for health and education, EU countries map closest to the benchmark while the opposite is true for demography. In all countries, demography is an area that differs significantly from the rest. For this area, all countries saw significantly lower synthetic values than in the other areas. Demography is thus characterized by the lowest level of development and all countries map furthest away from the benchmark for this area (Table 7).

The largest variation between EU countries is observed for the labour market and health while the lowest is observed for demography. In 2014, the largest differences between the highest and lowest values were found in the labour market area—the synthetic measure for the country with the highest level (Sweden, 0.6267) was about 55 times higher than the measure for the country with the lowest level (Greece, 0.0114). On the other hand, in 2018, the biggest differences were reported in the area of health—the synthetic measure for the country with the highest level (Sweden, 0.7855) was about 60 times higher than the measure for the country with the lowest level (Latvia, 0.0132). In turn for demography, these differences were the lowest and stood at approximately 8 in 2014 (highest value was Malta, 0.4242, lowest was Greece, 0.0495), and approximately 13 in 2018 (highest value was Malta 0.3470, lowest was Italy 0.0267). In addition, in 2018 compared to 2014, an increase in the gap between the maximum and minimum values of synthetic measures was reported in all thematic areas. It can therefore be concluded that the greatest disparity among EU countries concerns the labour market and health while the lowest is found for demography. In addition, in 2014 compared to 2018, all areas saw an increase in disparity between EU countries (Table 7).

The highest value of the synthetic measure was reported in Sweden for education (in 2014—0.8480, in 2018—0.8117) and also in Sweden for health (in 2014—0.8007, in 2018—0.7855), putting Sweden at the top of the ranking for these areas. In addition, Sweden also scored highest for labour market and very high for poverty and exclusion (fourth in the ranking). In turn, the lowest values of the synthetic measures were recorded in Romania, Bulgaria and Greece for poverty and exclusion, in Greece for the labour market and in Romania and Italy for education. Additionally, these countries also recorded low synthetic values and ranked near the bottom in most areas under review (Tables 7 and 8).

Analysing the value of synthetic measures and the position of countries in the individual rankings, it can be seen that in some countries there are significant ups and downs. Malta, for example, scored highest in the area of demography and relatively high for poverty and exclusion, but lagged significantly behind in terms of education. Portugal did well in demography but scored relatively low in all the other areas (especially in 2018). The Czech Republic had high synthetic values and ranked first for poverty and exclusion but was way behind in health and education. In summary, it can be said that in many EU countries there are significant differences in the positions they occupy in the rankings for the studied thematic areas, which is particularly true for Cyprus, Finland, Germany, Ireland, Luxembourg, Slovakia, and Sweden. It can also be said that in every EU country there is room for improvement in at least one of the areas under review. Of course, there are also countries where all areas call for change and improvement, as is the case in Bulgaria, Romania and Greece. Lastly, all EU countries require a major change and the improvement of their demographic indicators (Tables 7 and 8).

In Poland in 2014, the value of synthetic measures in all examined areas was lower than the EU average. Additionally, in 2014, Poland had the highest value of the synthetic measure for poverty and social exclusion, mapping nearest the EU average for this benchmark, while the opposite was true for labour market. In 2018 compared to 2014, positive trends were noted in Poland in all areas studied. For poverty and exclusion and also education, the value of the synthetic measure in Poland was higher than the EU average while the distance from the EU average shrank in the remaining areas. Positive trends observed in the poverty and exclusion category meant that Poland's position in the ranking improved—it went from 17th in 2014 up to 11th in 2018 (Tables 7 and 8).

5. Conclusions

Our assessment of the social development of EU countries in the context of sustainable development is based on findings concerning areas such as poverty and social exclusion, public health, the labor market, education and demographic trends. Indicators describing specific areas provide an overview of the EU's progress towards sustainable development in terms of social objectives. Based on our results, a conclusion can be drawn that many countries are witnessing positive trends which bring them closer to the successful implementation of the sustainable development paradigm—one of the principal priorities of the Europe 2020 strategy, a long-term socio-economic program of the EU. The above tendency is reflected in particular in the smaller number of people at risk of severe material deprivation and the smaller number of people living in households with very low work intensity. However, unfavourable trends were also observed. In nearly half of the EU countries in the years 2014 and 2018, the percentage share of the working poor and the risk of poverty for the elderly (65+) increased. The analysis also reveals that there are large disparities between the surveyed countries, relating to various areas of social development and being particularly pronounced for indicators such as: severe material deprivation, infant mortality rate, long-term unemployment rate % of active population, early leavers from education and training, and overcrowding rate, for which the coefficients of variation assumed the highest values.

Our multidimensional analysis also shows that the level of social development in the context of sustainable development differs across the EU. Particularly notable differences among EU countries can be observed for labour market and health while demography is the least diversified of areas. It should be noted, however, that demography in EU countries was also the weakest synthetic indicator among all areas, which means that it maps furthest away from the benchmark. Countries that scored high in the rankings for several thematic areas were Sweden, Denmark and the Netherlands, while on the opposite end there were Romania, Bulgaria, Greece and Italy. In addition, our research shows that in many countries, there is a significant disparity between thematic areas, with some doing very well in certain areas but very poorly in others. In summary, it should be concluded that in every EU country there is room for improvement in at least one of the studied areas, but there are also countries (e.g., Romania, Bulgaria, Greece) that require changes and improvement across all areas under review. In addition, all EU countries must definitely change and improve their demographic indicators.

The purpose of the article was also to compare Poland to other EU countries in 2014–2018. There are many strategic documents in Poland referring to the concept of sustainable development. The main goals, challenges and directions of the country's socio-economic development, including the principle of sustainable development, have been set out in *National Development Strategy 2020* [83] and in *Long-Term National Development Strategy "Poland 2030". The Third Wave of Modernity* [84]. The policy is focused on the following elements: the innovation and efficiency of the economy, development of human capital, development of transport, energy security and the environment, efficient state, development of social capital, regional development, sustainable development of rural areas, agriculture and fisheries, and the development of the national security system of the Republic of Poland [85]. Most notably, there is clear progress in Poland towards implementing the concept of sustainable development in the social aspect regarding the elimination of poverty and social exclusion, which was made possible thanks to numerous social programs, among other factors. This will help Poland better meet Target 1 of the Agenda 2030, which presents countries around the world with the challenge of eliminating poverty in all its forms. Education indicators in Poland also improved, with this favourable trend indicating that some of the goals of the Europe 2020 strategy have already been met while others have become more attainable. This is evidenced, among others, by the increased share of higher-education diploma holders aged 30–34 (the target for 2020 being 40%) and the reduced share of early leavers from education and training to less than 10%. In further improvement of the indicator of extending the life expectancy of a fully healthy society in Poland compared to the EU, two key issues arise: the level of medical care, with particular emphasis on control tests and prevention and the promotion of healthy lifestyle. Efforts and financial resources should focus on prevention, education on civilization diseases

such as cardiovascular system diseases, diabetes and cancer. It is also desirable to increase spending on the research and development of agriculture and the promotion of organic agritourism farms [86].

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