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### **Poverty and Income Inequality in Poland – Objective Measures and Social Perception**

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***Poverty and income inequality in Poland – objective measures and social perception***

### **Introduction**

Striving for social cohesion, reduction of poverty and inequality of income - these are one of the most important objectives included in strategic documents concerning social and economic development both on the national level and in the context of Poland's belonging to the European Union and on the global scale. Reliable and comprehensive statistical information in this area plays a particularly important role. They are necessary for proper diagnosis of these phenomena, development, monitoring and evaluation of policies aimed at implementation of the assumed objectives.

Poverty is a complex phenomenon and any assessment of its magnitude depends on the methodological solutions adopted and the data sources. The concept of measurement adopted by the Statistics Poland takes into account both poverty defined in absolute terms and defined in relative terms. To assess various aspects of poverty, a one-dimensional approach based on monetary indicators is used, as well as a multidimensional approach identified not only with the level of current income or household expenditure, but also with the inability to satisfy various types of needs (material and non-material). Besides a measurement of poverty and income inequality using so-called objective methods, a subjective approach is applied.

The basis for analyses of poverty and income inequalities in Poland are the results of sample surveys of households, such as: European Statistics on Income and Living Conditions (EU-SILC), Household Budget Survey (HBS), and Social Cohesion Survey (SCS).

The subject of the paper is presentation of the methods currently used by the Statistics Poland to measure poverty and income inequalities. The study also presents basic data on the current scale of these phenomena in Poland, emphasizing the diversity of approaches. Most attention was paid to the measurement of social perception of poverty and inequality. The diagnosis of perception of poverty and income inequalities shows to what extent the recognition of these phenomena based on the so-called objective measures is consistent with social knowledge. Perception indicators also demonstrate social moods, which may result in behaviours in the economic, social or political sphere. For example, the degree of acceptance of income inequalities is treated as an indicator of acceptance of the existing social order. On the other hand, answers to the question concerning the preferred forms of assistance for the poor may be helpful in planning specific solutions in the field of social policy. Although the measurement of social perception is the subject of research conducted by scientific institutions and public opinion polling centres, this issue is most often overlooked in research carried out by national statistical offices. Appreciating the importance of this type of information for the creation of a possibly comprehensive picture of poverty and income disparity in Poland, the Statistics Poland introduced questions in this area to the cyclical Social Cohesion Survey, which has been carried out since 2011. The paper focuses on the presentation of the results of the third edition of the survey, conducted in 2018.

## **Monetary poverty in Poland calculated on the basis of the Household Budget Survey<sup>1</sup>**

Starting from the first half of the 1990s, the Statistics Poland regularly publishes data on the extent of economic poverty calculated on the basis of various poverty lines. Consideration of several rather than one selected threshold is due to the fact that none of the lines has been defined in Poland as an official one, and from the methodological point of view there are no grounds to indisputably prefer one of them. Each of them has certain advantages and disadvantages, as well as a different interpretation.

In the analyses of objective poverty conducted on the basis of the Household Budgets Survey, the level of expenditures was assumed to be a synthetic measure of economic well-being of a household. A household (and thus all its members) is considered poor (at risk of poverty) if the level of its expenditure (including the value of goods received free of charge and taken from an individual farm plot of land or self-employed activity) is lower than the value adopted as poverty threshold .

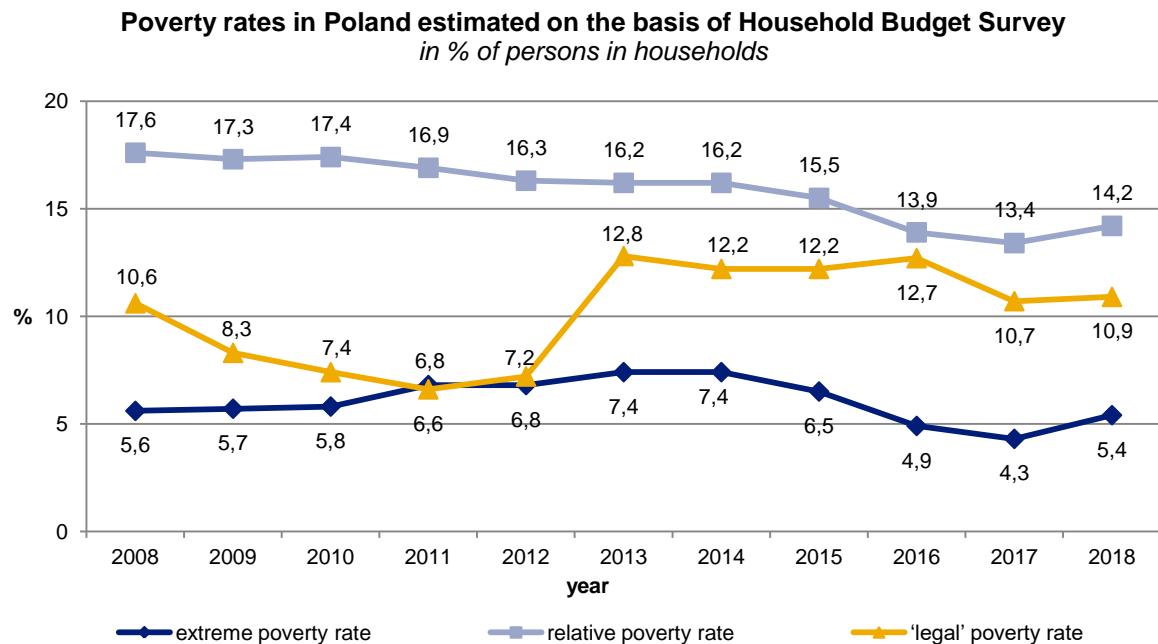
When calculating the extent of objective poverty on the basis of the Household Budgets Survey, the Statistics Poland takes into account the following poverty lines:

- **Relative poverty line**, defined at the level of 50% of average monthly household expenditure in Poland. The application of such a defined threshold makes it possible to distinguish those whose consumption level significantly differs (in minus) from the average level. In 2018, about 14% of people in households experienced relative poverty.
- The so-called **legal poverty line**. The application of the threshold allows to indicate a group of persons (households) who, in accordance with the binding provisions of law, are potentially entitled to apply for a cash benefit from social assistance. In 2018 the rate of legal poverty amounted to approx. 11%.
- The **line of extreme poverty**. The basis for determining the extreme poverty line is the subsistence minimum estimated by the Institute of Labour and Social Affairs (IPiSS). The category of the subsistence minimum determines a very low level of satisfying needs. Consumption below this level makes it difficult to survive and constitutes a threat to human psychophysical development. In 2018, the extreme poverty rate was about 5% of the population.

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<sup>1</sup> The methodology, organization and results of the Household Budget Survey are presented in the annual reports (Household Budget Survey in...) available on the Statistics Poland website: <https://stat.gov.pl/en/topics/living-conditions/living-conditions/household-budget-survey-in-2017.2.12.html>

**Figure 1.**



#### **Poverty measurement based on EU-SILC survey (harmonised at European Union level)<sup>2</sup>**

Actions aiming at reducing poverty and social exclusion are of great interest and support of the European Commission. This is reflected in the headline targets of Europe 2020 Strategy<sup>3</sup>. One of the headline target of the European Union within the area of social integration aims at reducing (in 2020 compared to 2008) by at least 20 million number of those who are poor or social excluded (Target 5). As a national target, Poland assumed a reduction in the number of people living in relative poverty or at risk of social exclusion by 1.5 million people. This aim is measured by poverty and social exclusion indicator. It is calculated based on data collected in EU-SILC Survey.

- **The at-risk-of-poverty or social exclusion indicator** corresponds to the sum of persons who are: at risk of poverty or severely materially deprived or living in households with very low work intensity. Persons are only counted once even if they are present in several sub-indicators.
- **At risk-of-poverty indicator** concerns persons with an equivalent disposable income<sup>4</sup> below the risk-of-poverty threshold, which is set at 60 % of the national median equivalent disposable income (after social transfers).

<sup>2</sup> The methodology, organization and results of the Polish edition of the EU-SILC survey are presented in annual reports (Incomes and living conditions of the population of Poland (report from the EU-SILC survey of ...)) available on the Statistics Poland website: <https://stat.gov.pl/en/topics/living-conditions/living-conditions/income-and-living-conditions-of-the-population-of-poland-report-from-the-eu-silc-survey-of-2017,1,10.html>

<sup>3</sup> See: The European Commission website dedicated to the Europe 2020 strategy, <https://ec.europa.eu/eu2020/>

<sup>4</sup> Disposable income is defined as the sum of monetary income (in the case of hired employment which additionally includes non-monetary benefits related to the use of a company car) net (after deducting advances on income tax, taxes on property income, social security and health insurance contributions) of all household members less: taxes on real estate, money transfers to other households and the balance of accounts with the tax office. In the calculation of income, the modified OECD equivalence scale is taken into account

- **Material deprivation covers indicators** relating to economic strain and durables. **Severely materially deprived persons** have living conditions constrained by a lack of resources. They experience at least 4 out of 9 following deprivations items- they cannot afford: i) to pay rent or utility bills, ii) to keep home adequately warm, iii) to face unexpected expenses, iv) to eat meat, fish or a protein equivalent every second day, v) to spend a week holiday away from home, vi) a car, vii) a washing machine, viii) a colour TV, or ix) a telephone.
- **People living in households with very low work intensity** are those aged 0-59 living in households where the adults (aged 18-59) work less than 20% of their total work potential during the past year. Students are excluded.

**Table 1. Indicators of the risk of poverty or social exclusion in Poland and in the European Union\* based on EU-SILC**

Indicator		2008	2015	2016	2017	2018
		in % of persons				
<b>At-risk-of-poverty or social exclusion rate</b>	Poland	30.5	23.4	21.9	19.5	18.9
	EU	23.7	23.8	23.5	22.4	
At-risk-of-poverty rate after social transfers	Poland	16.9	17.6	17.3	15.0	14.8
	EU	16.6	17.3	17.3	16.9	
Severe material deprivation rate	Poland	17.7	8.1	6.7	5.9	4.7
	EU	8.5	8.1	7.5	6.6	
People(aged 0-59) living in household with very low work intensity	Poland	9.3	8.0	7.4	6.7	6.6
	EU	9.7	11.2	11.2	10.3	

\* Data for 2015-2018 refer to 28 countries and for 2008 to 27 countries.  
Source: Statistics Poland, Eurostat database (27.08.19)

*When analysing the indicators of the Europe 2020 Strategy estimated on the basis of the EU-SILC survey, one should pay attention to the period to which each of the measures relates. In the case of the severe material deprivation rate, the reference period is the year in which the survey was conducted. The indicator of relative poverty is estimated on the basis of disposable income from the year preceding the survey. Thus, the relative poverty rate of 2016 is calculated on the basis of disposable income achieved in 2015.*

There are other poverty indicators calculated on the basis of EU-SILC making an substantial supplement to the measures mentioned above. The most important of them are:

- **Persistent-at-risk-of-poverty rate.** The indicator is **defined** as the share of persons with an equivalised disposable income below the **risk-of-poverty threshold** in the current year and in at least two of the preceding three years
- **At-risk-of-poverty rate anchored at a fixed moment in time.** The indicator is defined as the percentage of the population whose equivalised disposable income is below the 'at-risk-of-poverty threshold' calculated in the standard way for the base year, currently 2008, and then adjusted for inflation.
- **At-risk-of-poverty rate before social transfers including old-age and survivors' benefits.** It is define as the percentage of persons with an equivalised annual disposable income before social transfers including old-age and survivors' benefits below the at-risk-of-poverty threshold set at 60% of the national median of equivalised annual disposable income.

**Table 2. Complementary poverty indicators in Poland and in the European Union\* based on EU-SILC**

Indicator			2008	2015	2016	2017	2018
			in % of population				
Persistent at-risk-of-poverty rate	Poland	10.4	10.1	9.7	9.1	10.5	
	EU	8.7	10.9	11.0	10.8		
At-risk-of-poverty rate anchored at a fixed moment in time (2008)	Poland	16.9	10.2	8.8	6.6	5.5	
	EU	16.6	18.6	17.5	15.9		
At-risk-of-poverty rate before social transfers	Poland	44.1	43.6	43.1	43.6	44.4	
	EU	42.0	44.7	44.5	43.8		

\* Data for 2015-2018 refer to 28 countries and for 2008 to 27 countries.  
Source: Statistics Poland, Eurostat database (27.08.19)

The results of EU-SILC 2017 and 2018 indicate that the risk of poverty and social exclusion index was about 19% in Poland (see Table 1). Relative poverty affected about 15% of people, while severe material deprivation rate at that time was about 5-6%. In the case of all the mentioned indicators, these values were lower than the average for all the EU Member States.

Much lower than the average for the European Union was also at risk of poverty rate anchored at a fixed moment in time (2008). It amounted to about 6% (see Table 2). This means that in comparison with 2008 there was a clear improvement in the income situation in Poland.

#### **Multidimensional analysis of poverty in a view of the Social Cohesion Survey<sup>5</sup>**

Multidimensional analysis of poverty should be treated as complementary to the one-dimensional approach. This kind of analyses has been implemented on the basis of the Social Cohesion Survey.

In a context of multidimensional analysis of poverty three complementary dimensions were taken into account: income poverty, living conditions poverty, and the poverty in terms of the lack of budget balance. Particular poverty dimensions are defined as follows:

- **Income poverty** – households are considered poor, if their monthly monetary disposable income (within 12 months preceding a survey) was lower than a value considered as a poverty threshold. Defining both, income poverty as well as its threshold, equivalised income was taken into account. It allowed to compare households with different demographic characteristics. Poverty threshold has been assumed at 60% of median equivalised income assessed on a national level.
- **Living conditions poverty** – households are considered poor, if they were affected by at least 10 of 30 symptoms of poor living standards. The symptoms are related to the following

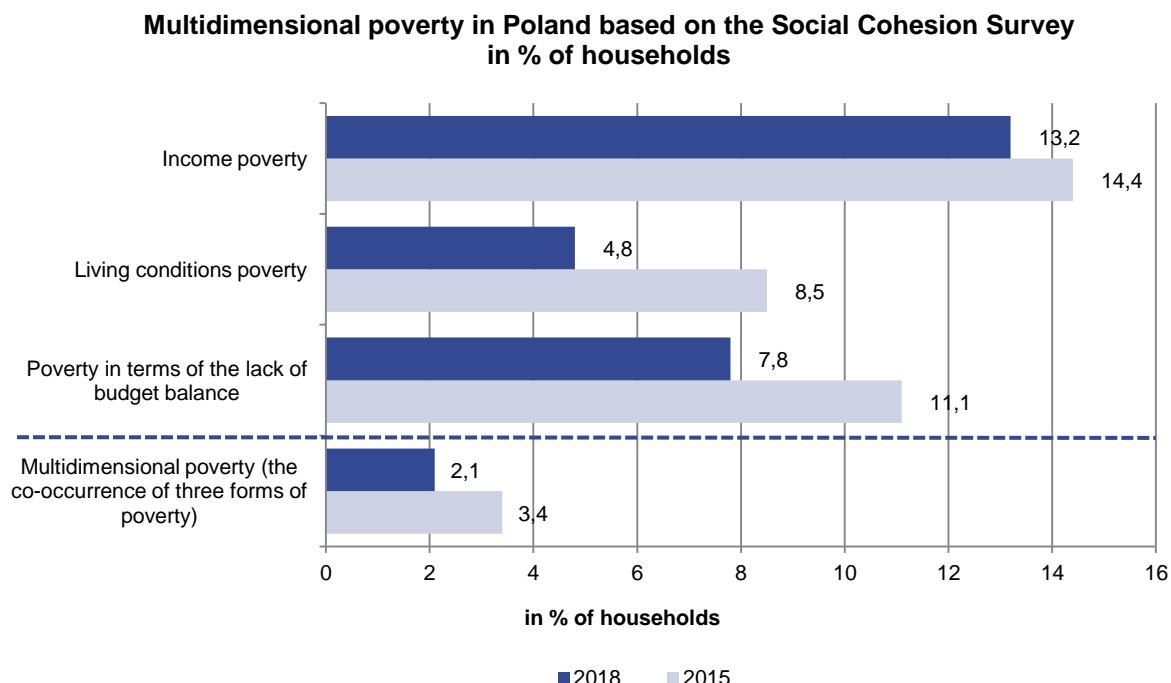
<sup>5</sup> More information regarding methodological aspects of the Social Cohesion Survey is available in the publication 'Quality of life in Poland in 2015. Results of the Social Cohesion Survey', GUS, Warsaw 2017 (<http://stat.gov.pl/obszary-tematyczne/warunki-zycia/dochody-wydatki-i-warunki-zycia-ludnosci/jakosc-zycia-w-polsce-w-2015-roku-wyniki-badania-spojnosci-społecznej,4,2.html>). The final methodological and analytical report with the results of the 2018 survey will be published by the end of 2019. Currently, thematic papers (news releases) are available on the Statistics Poland website.

aspects: dwelling quality, equipment in durable goods, deprivation of different needs (material, as well as non-material ones linked i.a.to the usage of culture, social relations and leisure time).

- **Poverty in terms of the lack of budget balance** – households are considered poor in terms of this type of poverty, if they are affected by at least 4 of 7 symptoms included. The symptoms refers to both: households subjective opinions about their material status, as well as facts confirming budgetary difficulties of the households (including arrears).

Expanding the analysis to non-income aspects provided a more complete picture of this phenomenon. The analysis allows to reveal groups of households that face a number of difficulties with balancing their budget or live in poor conditions although their current income considerably exceeds the income poverty threshold. Moreover, such approach enables the assessment of co-occurrence of different dimensions of poverty in the households - overlapping of all three poverty forms is treated as the multidimensional poverty (**multidimensional poverty indicator**).

**Figure 2.**



### Social perception of poverty

As mentioned in the introduction, the Social Cohesion Survey is also a source of information on the social perception of poverty in Poland. In this survey respondents were asked about:

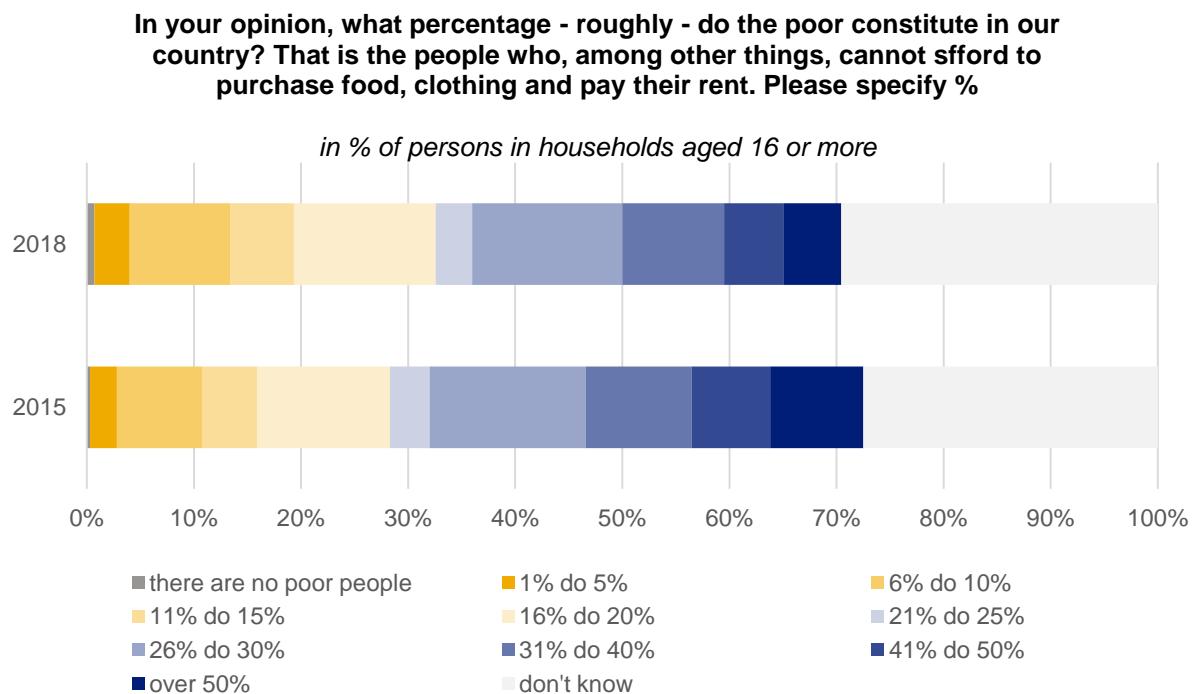
- Opinions on the extent of poverty in Poland
- Presence of poor people among friends, family, neighbours
- Perceiving the role of the state in poverty reduction
- The most desirable forms of social assistance for the poor

### Perceptions of the scale of poverty

The results of the Social Cohesion Survey 2018<sup>6</sup> indicate that opinions on the extent of poverty in Poland are very diverse. The high percentage of people who are unable to estimate the extent of this phenomenon (29.5%) is noteworthy. Less than 1% of people aged 16 and over believe that there are no poor people in Poland, i.e. those who do not have enough money to buy food, clothes or pay for their flats. On the other hand, over 5% of people think that over half of the Polish population is poor. Most often the range of poverty was estimated at the level of 26% to 30% (such values were given by 14% of people) and 16% to 20% (13% of people).

Then, the Social Cohesion Survey included the question which allowed to assess what percentage of Polish society have in their closest surroundings (i.e. among their friends, family or neighbours ) the persons who could be considered as poor. In the first half of 2018 over 45% of Polish inhabitants aged 16 or more admitted that they know someone poor. These assessments are completely different when we take into consideration particular income quintile groups. Almost 6 of 10 of Polished inhabitants (aprox.57%) with the lowest income (1st income quintile group) pointed that they know persons who could be deemed as the poor, while among the most wealthy ones (5th income quintile group) this percentage achived approx.37%.

**Figure 3.**

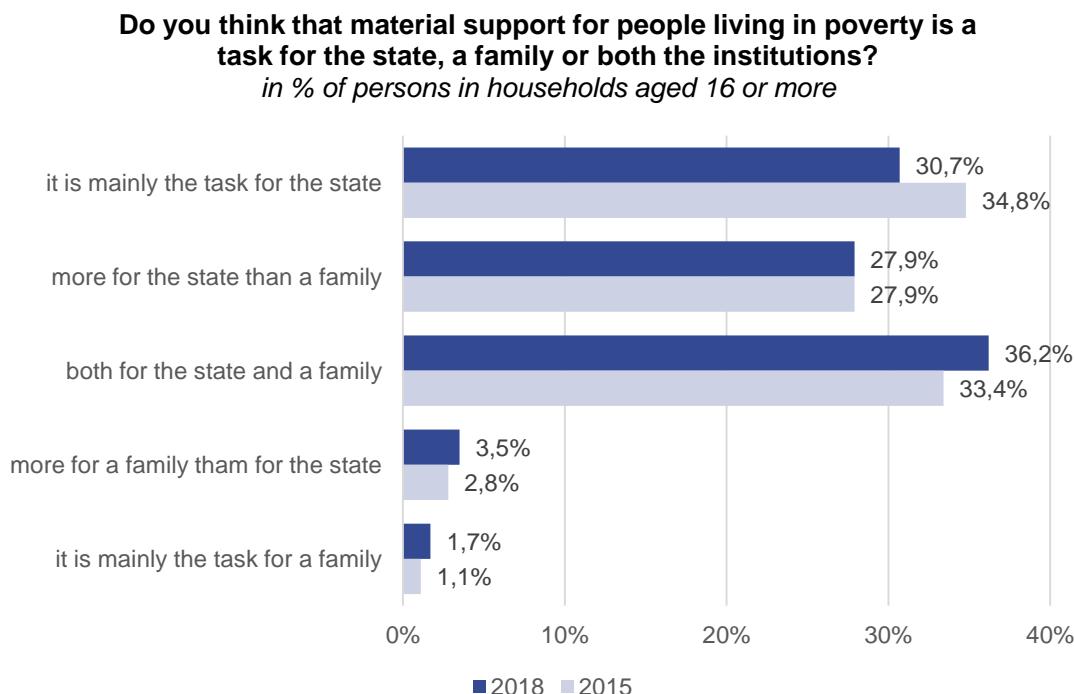


<sup>6</sup> The Social Cohesion Survey 2018 was conducted from 05.02 to 30.05.2018. Over 13 thousand people aged at least 16 years answered the individual questionnaire, based on which the perception of poverty and income inequality was analysed.

#### Perceiving the role of the state in poverty reduction

The results of the 2018 survey confirm that there is a common view in Poland indicating the need for state involvement in helping the poor. According to the opinion of about 59% of people, material support for people living in poverty is mainly a task for the state and not the family. Over one third (about 36%) believe that it is a task for both the state and the family. Family, on the other hand, is perceived as the main source of material support for poor people by about every 20th resident of Poland (3.5% believe that it is a task more for the family than for the state, and about 2% that it is a task mainly for the family).

**Figure 4.**



#### The most desirable forms of social assistance for the poor

In 2018, the most needed form of assistance to people living in poverty was, in the opinion of society, to help them find a job. This form of support, as one of the three most important, was identified by 43% of people. Social services are also important. The preferred form of support is mainly: assistance in the care of chronically ill and disabled people (about 32%), increasing the availability of free medical services (about 28%) and assistance in running a household for the elderly (about 25%). Cash benefits are considered as one of the three most important forms of support by approx. 16% of persons. In general, there are not too big discrepancies in expectations concerning assistance for the poor between the general population and people affected by income poverty. Only in the case of cash benefits such difference is more visible. Cash benefit is considered one of the three most important forms of assistance by ca. 24% of persons defined as poor according to the income criterion, i.e. by ca. 8 percentage points more than among the general population.

Comparing data on preferred forms of social assistance in 2018 with results from 2015, we observe, first of all, a very large decrease in the percentage of people who consider assistance in finding a job as one of the most desirable forms of support (by about 31 percentage points for the whole population and about 32% for the poor). Such a high drop in 2018 can probably be associated with an improvement in the situation on the labour market. This decrease could also be influenced by the fact that in 2018 the question was asked about "help in finding a job", while in 2015 about "help in finding a

job for the unemployed". It should also be noted that in 2018 the importance of cash benefits as the preferred form of assistance to the poor decreased. This change in importance was particularly visible in the case of people affected by income poverty. In 2015, cash benefits, as one of the three most important forms of aid, were perceived by over 30% of the poor and in 2018 - by approx. 24% (see Table 3).

**Table 3. The most needed forms of assistance for the poor people according to the opinion of the inhabitants of Poland (in % of persons aged 16 or more) people**

Forms of assistance	Total		people living in income poverty	
	2015	2018	2015	2018
Assistance in finding a job <sup>b</sup>	74.3	43.1	81.6	49.5
Assistance in taking care of chronically ill, disabled people	33.1	31.7	27.4	29.1
Improving accessibility of free medical services	28.7	27.6	24.5	28.1
Assistance in running a household for the elderly (e.g. cleaning, washing, shopping, cooking a meal)	19.3	24.8	17.4	22.5
Cash benefits	18.7	15.8	30.2	23.5
Providing access to inexpensive municipal and social dwellings	13.8	12.6	9.6	11.2
Free nurseries and kindergartens for children	12.4	12.2	9.0	8.3
Assistance for housing purposes (covering rent, energy, gas, renovation of the apartment)	11.4	11.7	15.8	13.7
Creating places where children can do their homework and spend their free time under professional supervision	12.0	10.6	10.1	8.7
Providing holiday rest for children	10.4	10.0	11.9	8.4
Scholarships for children and young people to continue their education in secondary and higher education	10.3	9.0	11.4	7.4
Closer and long-term cooperation of persons/institutions providing aid with persons in need	9.5	8.2	8.2	6.1
Professional counselling (legal, psychological, pedagogical)	7.2	8.1	5.0	5.5
Cheap communication e.g. buses*	.	8.1	.	9.5
Systematic in-kind assistance (clothing, food, free school books)	9.5	7.2	11.7	7.0
Dissemination of information on the possibilities for people in need to benefit from various forms of	7.5	6.9	5.6	4.5

assistance				
Providing free hot meal	7.6	6.6	7.6	6.1
Creation of places for older people*. (e.g. clubs, venue for joint meetings)	.	5.2	.	3.7
Free Internet*	.	3.1	.	2.8
Other	0.4	0.8	0.2	0.7

<sup>a</sup> Based on the answer to the question: Taking your place of residence into consideration - city, town, village - what kind of assistance is most needed for persons residing there, who you would consider as living in poverty ones? (three possible indications)

<sup>b</sup> In 2018 in comparison with 2015 there was a change in the cafeteria's answer to this question. In 2015 the answer in point 1 was: help to find a job for the unemployed and in 2018: help to find a job. Such a change in the wording may have affected the responses.

\* In the edition of the Social Cohesion Survey in 2015, these answer variants were not included in the cafeteria

### Income inequalities – objective data and social perception

#### Objective indicators of inequality in income distribution

Until the implementation of the European Survey of Income and Living Conditions (EU-SILC) by Statistics Poland in 2005, the basic source of data used for the analysis of the financial situation of households in Poland, including the assessment of the differences in the level and distribution of income, was the Household Budget Survey. Due to, inter alia, the long tradition of this survey and quite quick publication of its results, the Household Budget Survey is still a very important source of information on the diversification of the income situation in the Polish society. However, for methodological reasons, the EU-SILC survey is starting to play a key role in this matter, especially in the context of international comparisons. One of the main arguments in favour of using (especially for the analysis of income distributions, but also for national purposes) data from EU-SILC, not from the Household Budget Survey, is the reference period for income data. In the EU-SILC survey it is a year, whereas in the Polish budget survey it is a month. It has been assumed that the basic measures used to assess inequality in the distribution of income in the EU Member States, calculated on the basis of the EU-SILC survey, are the Gini coefficient and the so-called quintile share ratio (the indicator of income inequality S80/S20). For the purposes of national analyses, other indicators are also calculated, such as the Theil index. All the commonly used (and presented here) measures refer to the equivalised disposable income after social transfers.

**Table 4. Inequality of income distribution in Poland and in the European Union\* (based on the EU-SILC)**

Indicator		2008	2015	2016	2017	2018
Gini coefficient	Poland	32.0	30.6	29.8	29.2	27.8
	EU	31.0	31.0	30.8	30.7	
S80/S20 income quintile share ratio	Poland	5.1	4.9	4.8	4.6	4.25
	EU	5.0	5.2	5.2	5.1	
Theil index	Poland	0.186	0.163	0.151	0.150	

\* Data for 2015-2018 refer to 28 countries and for 2008 to 27 countries.

Source: Eurostat database, own calculations based on the Polish edition of the EU-SILC survey, Statistics Poland

The **Gini coefficient** measures the extent to which the distribution of income deviates from a perfectly equal distribution. It is a summary measure of the cumulative share of income accounted for by the cumulative percentages of the number of individuals. Its value ranges from 0 (complete equality) to 100 (or 1, if expressed not in percent; complete inequality).

The **S80/S20 income quintile share ratio** refers to the ratio of total equivalised disposable income received by the 20% of the country's population with the highest equivalised disposable income (top quintile) to that received by the 20% of the country's population with the lowest equivalised disposable income (lowest quintile)

**Theil index** is a measure of inequality, alternative e.g. to the Gini coefficient, whose definition derives from the concept of entropy. As in the case of the Gini coefficient, a value of 0 would correspond to a situation when all people have the same income. A significant advantage of Theil over Gini is that it can be decomposed by of any qualitative characteristic. Such a decomposition explains the inequality of income in the whole population as a combination of the measures of internal inequality in the subpopulations (within-group inequality) and differences between subpopulations (between group variability). This opportunity has been used in the further part of the paper.

Information on households' incomes is also collected in the aforementioned cyclical (conducted every 3-4 years) multidimensional Social Cohesion Survey. This survey is not the first choice data source for the assessment of the income situation in Poland, but provides unique data for comprehensive analyses, including the analysis of the relationship between income and other aspects of widely understood quality of life. An example of this is the analysis presented in this paper between the results of objective measurement of poverty and income inequality and the social perception of these phenomena.

It should be noted that there is a large convergence of results concerning the diversification of the income situation in Poland obtained on the basis of the EU-SILC and the Social Cohesion Survey. Some differences between the values of analogous indicators may result, among others, from different reference periods for income. In EU-SILC it is the calendar year preceding the survey, and in the Cohesion Survey - the period of 12 months preceding the interview (not coinciding with the calendar year).

**Table 5. Inequality of income distribution in Poland (based on Social Cohesion Surveys 2015 and 2018)**

Indicator	2015	2018
Gini coefficient	29.7	27.5
S80/S20 income quintile share ratio	4.5	4.0
Theil index	0.154	0.132

Source: own calculations based on the Social Cohesion Surveys 2015 and 2018, Statistics Poland.

#### Decomposition of the objective measurement of income inequality

As mentioned earlier, an important property of the Theil index as a measure of income inequality is the possibility to decompose it. Decomposition by an additional characteristic of statistical units makes it possible to assess what proportion of the observed inequalities in the population is due to the variation in the (average) value of income between subpopulations defined by different levels of the observed characteristic. In other words, it allows us to conclude to what extent a feature (characteristics)

explains the existence of observed inequalities. The characteristics that were decided to be considered in this context (i.e. to assess their role in generating income inequalities) are age, educational attainment and status on the labour market, as well as place of residence determined by the region (voivodship) and class of locality. Also the number of people aged under 18 was taken into account, which is a very simplified and basic information on the composition of the household. These features can be treated as potential determinants of the income level, although they are not directly used and interpreted in this way.

The decomposition of the Theil index for the population according to any qualitative characteristic (e.g. education) is made with the use of a formula:

$$T = s_1 T_1 + \dots + s_k T_k + T_B$$

where:

$T_1, \dots, T_k$  – values of Theil index for subpopulations corresponding to particular levels of qualitative characteristics (e.g. education levels), representing income inequality within a given subpopulation (within-group inequality),

$s_1, \dots, s_k$  shares of individual sub-populations in the population total of income,

$T_B$  – a factor reflecting the variability of average income levels between particular sub-populations (between group variability)

The subject of the analysis is the share of between group variability due to a given characteristic in the explanation of income inequalities for the whole population, i.e.  $T_B/T$ . The shares thus calculated (in %) for each analysed characteristic are shown in Table 6.

**Table 6. Share of the factor corresponding with the between group variation by selected characteristics in the income inequality in the whole population measured by Theil index**

Year	Theil index	Additional factor (characteristics of household/person)					
		Number of persons aged 0-17 in the household	Age	Education	Economic activity	Type of locality	Region (Voivodship)
		Share in %					
2015	0.154	4.0	1.9	23.9	11.9	11.4	5.0
2018	0.132	1.4	2.7	23.4	11.7	11.6	4.9

Source: Based on the Social Cohesion Survey, Statistics Poland

Among the analysed characteristics, the most important factor generating income inequality was the level of education; the role of the status on the labour market and the class of towns and cities is also significant. Differentiation of equivalent income according to education allows to explain over 23% of the inequalities measured for the general population, i.e. twice as much as the type of economic activity or the class of place of residence. As far as the territorial aspect is concerned, the class of localities turned out to be a much more important differentiating factor than the region (voivodship).

The share of age, household composition and region of residence in the formation of income disparities is insignificant, although some regularities can be observed, especially with respect to changes over time. The role of age in 2018 is slightly greater than in 2015. The disappearing effect of

the composition of a household may indicate that the applied equivalence scale becomes more and more adequate to the actual distribution of income.

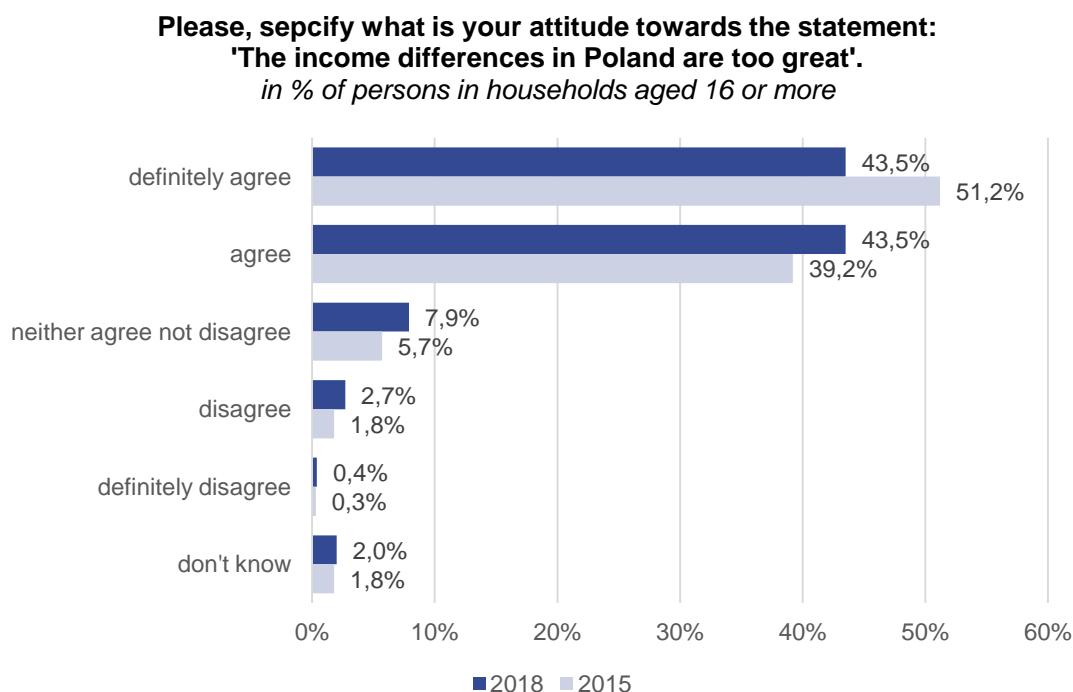
#### Social perception of income inequalities

The source of data on subjective opinions on income differences in Poland is the cyclical Survey of Social Cohesion (similarly as in the case of subjective opinions on poverty). This study allows us to answer not only the question how society assesses the scale of income disparities in the country, but also how it perceives the role of the state in reducing existing income disparities.

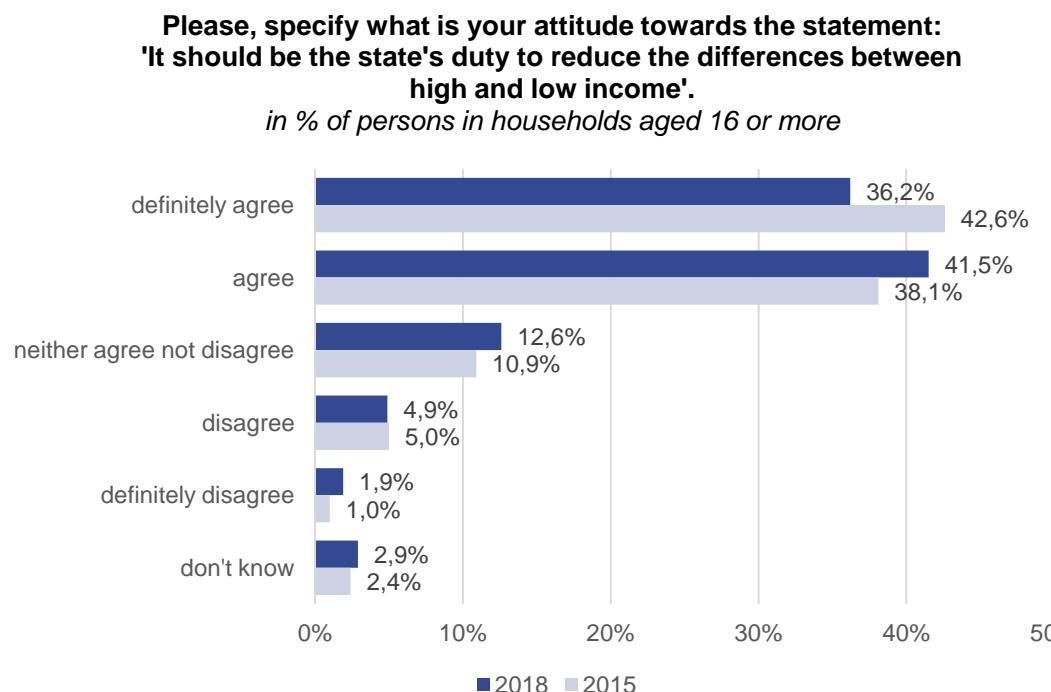
The survey conducted in the first half of 2018 shows that the vast majority (87%) of Polish citizens aged 16 and over believed that the differences in income in Poland were too great. Only about 3% of people disagreed with this opinion.

Also questions about the role of the state in the creation of income policy point to egalitarian views of Polish residents on the distribution of income. However, the support for state interventionism in the area of reducing income disparities and providing citizens with a basic minimum income is not as common (although large) as the opinion that income disparities are too great. In 2018, almost 78% of people aged 16 and over agreed with the opinion that it is the state's responsibility to reduce differences between high and low income; less than 7% persons disagreed. Similarly, the role of the state in guaranteeing a minimum income for everyone is perceived. Approx. 78% of people believed that the state should ensure a basic minimum income for everyone and 8% disagreed with this opinion.

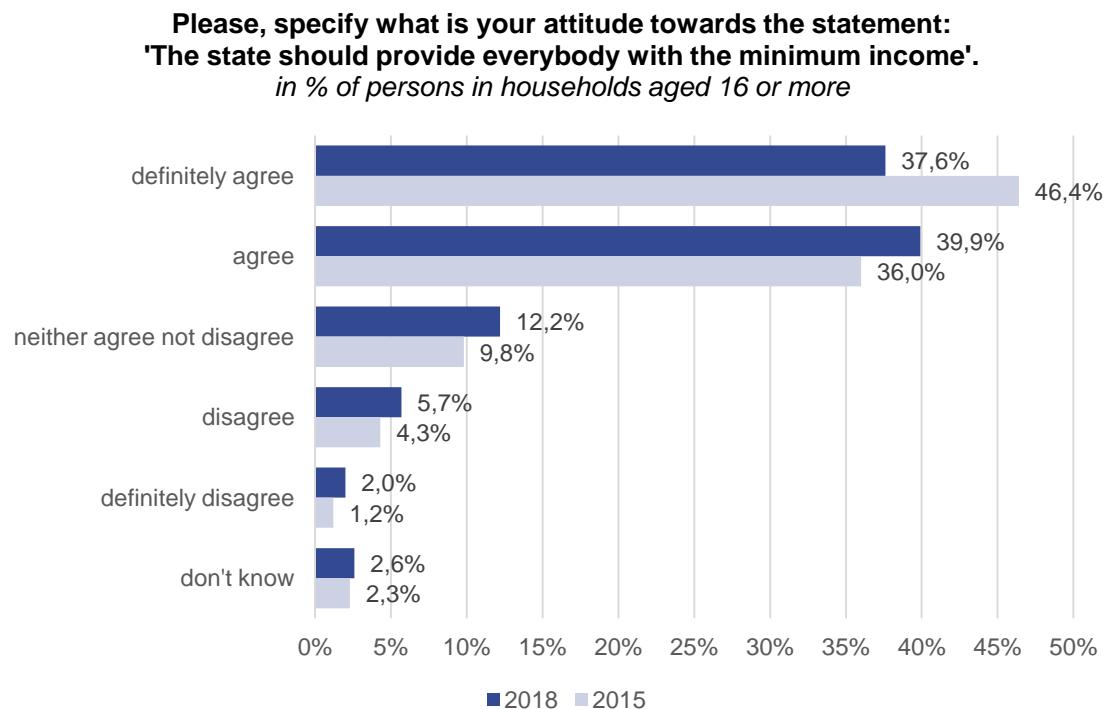
**Figure 5.**



**Figure 6.**

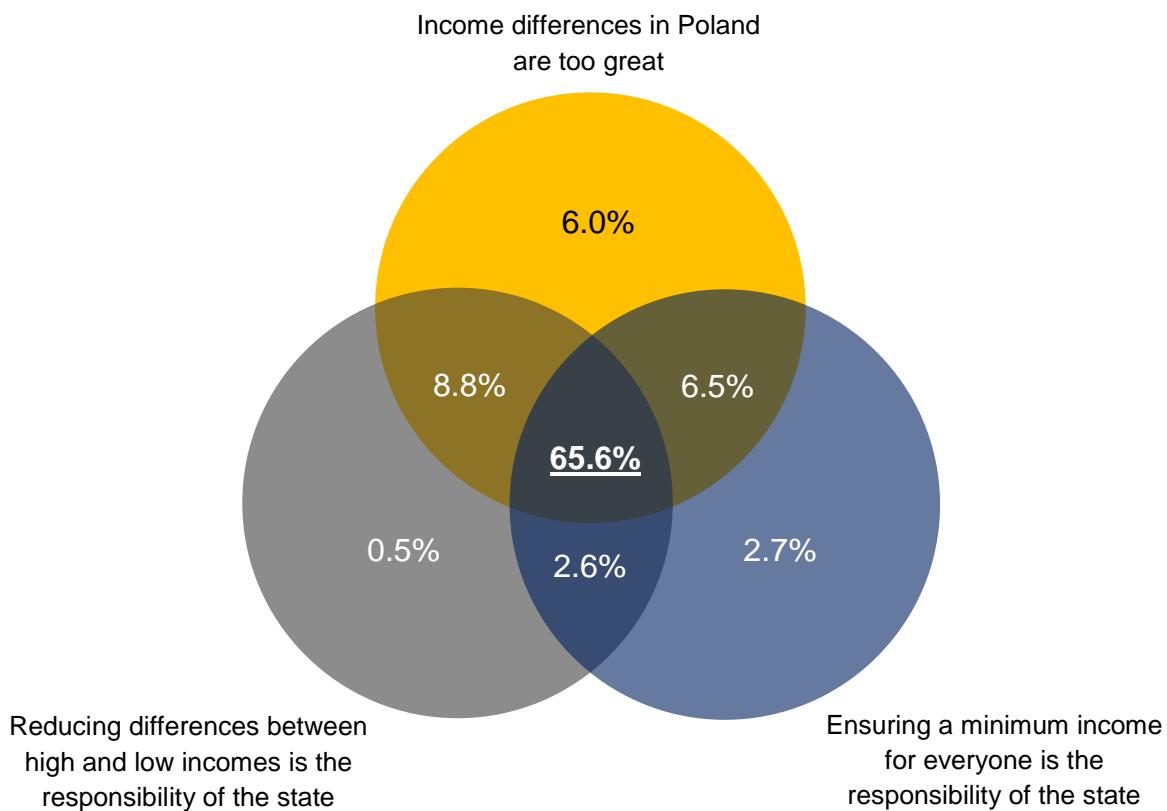


**Figure 7.**



The differences between the number of people who supported opinions about excessive income and the number of people supporting state intervention in this area were one of the reasons to analyse the distribution of these opinions in more detail way. It was examined how many people with egalitarian views on income disparities also believe that the state should be responsible for resolving the issue, i.e. they share the view that it should be the state's responsibility to reduce the income disparity between high and low incomes and that the state should provide everyone with a basic minimum income. The analysis shows that about 93% of people are in agreement with at least one of the three opinions considered. On the other hand, almost 66% of people supported all the three opinions at the same time. Therefore, we can put forward a thesis that about 2/3 of the Polish society (we mean the population of people aged 16 and over) have strong egalitarian views on the state policy on income redistribution.

**Figure 8. The coexistence of the three egalitarian opinions**



#### Determinants of the subjective opinions on income differences

A wide range of information gathered in the Social Cohesion Survey allows not only to learn about the opinions concerning the diversity of income situation and the role of the state in the redistribution of income, but also to analyse the impact of different characteristics of respondents on the opinions expressed, i.e. to look for determinants of specific opinions. For this purpose, models of logistic regression were used.

Two indicators, which are also the subject of descriptive analysis in this article, concerning the perception and evaluation of income differences, as well as broader egalitarian views on income redistribution and the role of the state in shaping the socio-economic situation, are explained. The first one is a simple indicator that reflects the answer to a single question, the second one is a complex indicator that reflects the coincidence of answers to 3 questions, indicating the egalitarian attitude of the respondent. These indicators are defined at the micro-data level as:

- in the first case, the agreement or strong agreement with the view that the differences in income in Poland are too large,
- in the second case, simultaneous agreement or strong agreement with the views that:
  - income differences are too great in Poland
  - the state's responsibility is to reduce differences between high and low incomes
  - the state's responsibility is to provide a basic minimum income for everyone

The second indicator explained can be interpreted as reflecting 'strongly egalitarian' views. It takes into account those people who not only believe that the differences in income in Poland are too great, but also expect the state to intervene in this area, including ensuring a minimum income for everyone.

In the case of both models, the explanatory variables used are the same set of 15 socio-economic and demographic features describing respondents and households of which they are members, as well as more personal individual features related to e.g. life history or religious involvement.

Application of the first model, explaining the support for the view that there were too large income differences in Poland, shows that in this case the most important factor was the region of residence (voivodship) and the presence of poor people in close surroundings (among friends, acquaintances, family, neighbours). Among the features describing the respondent personally, age, education and status on the labour market had the greatest influence on the expression of such opinions (see Table 7). The significance of the material situation turned out to be much smaller. This situation was described by indicators taking into account its three dimensions: income situation (quintile group according to equivalent income), living conditions (on the basis of a composite indicator taking into account the housing standard, durables, the possibility to satisfy various types of material and non-material needs) and the household budget balance (also on the basis of a composite indicator). The impact of the household budget situation and the level of income turned out to be statistically significant. As far as the budget situation is concerned, a bad situation (with the balance of the household budget) is conducive to the aversion to income differences. As far as the amount of income is concerned, the only significant detailed effect is a smaller aversion to income differences in the case of representatives of the highest (5th) quintile group. In the case of other groups, it is not observed that the level of income significantly influences the opinion expressed.

The results of the fitting of the second model, which explains 'strongly egalitarian' views described by a composite indicator, show that the territorial aspect had the greatest impact on the formation of such views. As in the case of a single opinion about too great income differences (model 1), the most important determinant was the region (voivodship) of residence. The influence of the class of the place of residence was also significant. The inhabitants of small towns (up to 20,000 inhabitants) and rural areas were more prone to expressing egalitarian opinions than other people. The accumulation of egalitarian opinions is also facilitated by the presence of poor people in the immediate vicinity, although this factor played a slightly less important role than in the case of explaining a single opinion on too large income difference. The model used indicates a great importance of the level of education and the status in the labour market for expressing 'strongly egalitarian' views. The least inclined to express such views are people with higher education, students and pupils, as well as people working on their own account outside agriculture. The importance of education and status on the labour market

in the case of model 2 (covered explanation of a complex egalitarian opinion) was much greater than in the case of model 1. Age, on the other hand, turned out to be more important determinant in model 1 (provided explanation of a single opinion about too great inequalities).

In both models, a similar impact of the material situation was observed. The accumulation of egalitarian opinions is facilitated by household budget imbalances, while those with the highest income levels are least inclined to express opinions about too large income differences and the need for state intervention to eliminate these differences.

**Table 7. Assessment of the significance of the factors' effects on the opinion about income inequalities in Poland (model 1) and on the complex egalitarian opinion (model 2)**

Explanatory factor	DF	Explanation of the opinion that the income differences in Poland are too great [Model 1]		Explanation of the complex egalitarian opinion (coexistence of the three egalitarian opinions) [Model 2]	
		Wald statistics	p-value	Wald statistics	p-value
Region (voivodship)	15	77.6	<.0001 ***	97.2	<.0001 ***
Type of locality of residence	4	11.7	0.0195 *	51.3	<.0001 ***
Age	6	56.3	<.0001 ***	19.5	0.0034 **
Sex	1	5.1	0.0243 *	2.6	0.1062 n.s.
Being in a marriage or in an informal relationship	2	6.3	0.0427 *	1.4	0.4923 n.s.
Education	4	28.5	<.0001 ***	53.7	<.0001 ***
Status on the labour market	8	28.6	0.0004 ***	37.6	<.0001 ***
Occupation	9	11.8	0.2258 n.s.	21.3	0.0115 *
Income situation	4	17.7	0.0014 **	29.9	<.0001 ***
Living conditions	2	6.5	0.0383 *	8.1	0.017 *
Household budget balance	2	15.3	0.0005 ***	28.3	<.0001 ***
Disability	1	1.9	0.1715 n.s.	0.8	0.3701 n.s.
Religiousness (level of engagement)	4	21.9	0.0002 ***	23.4	0.0001 ***
Type of life pathway (trajectory scheme)	5	20.2	0.0011 **	4.8	0.4408 n.s.

Significance codes: \*\*\* significant at 1%, \*\* significant at 1%, \* significant 5%, n.s. not significant

It is also worth noting that the explanatory variables included in both models describe respondents in a way that goes beyond the typical socio-economic characteristics. These were the "type of life pathway" and the "level of religious involvement". The possibility to examine this type of dependence is a quite unique feature of the data source used, i.e. the Social Cohesion Survey, which is created by its multi-faceted character. The "type of life pathway" is a characteristic resulting from the respondent's answer to the question in which he is to indicate one of the graphical diagrams describing his previous life course. The answer to this question contains synthesized information about the entire life experience of the respondent, but also - or maybe first of all - about how he perceives these

experiences and his whole life and how he evaluates against the background of his life history the point (moment) in which he currently finds himself. The "level of religious involvement" is a composite indicator taking into account different aspects of a person's religious life, created on the basis of answers to several questions concerning this area, including information on attitudes and values as well as on specific practices.

The type of life pathway turned out to be statistically significant only in the case of explaining the single opinions about too great income differences, whereas the level of religious involvement had a statistically significant impact both on this single opinion and on the cumulation of egalitarian opinions.

As far as religiousness (religious involvement) is concerned, egalitarian views are particularly favoured in case of a high, but not the highest, level of involvement. Less egalitarian views are favoured by low and very low engagement, but also the highest level of religious engagement is associated with a slightly higher acceptance of income differences. As far as the life pathway is concerned, the greater number of turning points in the declared scheme leads to a lower acceptance of income differences (more egalitarian opinions).

Summing up this part of the analysis, it is worth noting once again the importance of the presence of the poor in the surrounding as the determinant of opinions expressed on income inequalities, especially the simple opinion that such differences are not accepted. This relationship shows that opinions related to the perception of income inequalities are not formed in isolation from the objective situation, but close contact with the phenomenon of poverty sensitizes peoples to inequalities, promotes their negative perception and egalitarian views.

#### Territorial association between the perception of inequalities and the objective situation

The analysis of the features determining the attitude to income inequalities and more broadly understood egalitarian views indicates the importance of the territorial factor, including regional differences. Therefore, it was decided to take a closer look at the territorial diversity of the analysed opinions, trying to identify the association between the diversity of opinions and the objective situation concerning the observed level of income and income inequalities. The research question which was posed concerns whether the greater aversion to income inequalities in some regions (voivodships) is the result of the greater intensity of the phenomenon in these regions (i.e. the occurrence of greater income differences), or whether it is determined by a worse income situation (lower income level). To assess it, on the horizontal axis of the Figure 9 the percentage of people in particular regions expressing the opinion that income inequalities are too high, on the vertical axis the median of equivalent income and the value of the Theil index describing the actual (objective) inequality of equivalent income in the region are presented.

In general, the lack of acceptance of income inequalities was greater in voivodships with a lower level of income and a relatively low level of inequality than in voivodships with high values of the income inequality index, but relatively higher level of income. The lack of acceptance of inequalities is therefore usually stronger not when these inequalities in the environment actually occur, but when the respondent (together with his or her environment) represents a lower level of income.

This does not contradict the previously formulated (on the basis of regression results) thesis about the existence of a relation between an objective situation and the perception of inequality. It only specifies the nature of this relation, showing that direct experience or occurrence of poverty or worse material situation in the environment is of greater importance than the scale of local income inequality.

**Figure 9. The actual level and inequality of income by regions (voivodships) versus the perception of income inequalities**



### Final remarks

The complexity of the poverty issue and the fact that it is linked to practical measures in the social policy sphere speaks in favour of diversifying measurement methodology. The use of several measurement methods enables a more complete diagnosis of this phenomenon and a closer identification of the population affected by its various forms, as well as a more reliable assessment of the implementation of measures to prevent or mitigate poverty. Therefore, it seems fully justified, for example, to use both absolute and relative approaches. It should be remembered that even a small increase in income in the short term (especially when low levels of poverty thresholds are adopted) may significantly reduce the extent of absolute poverty, and a significant improvement in the economic situation may lead to its complete eradication (depicted in statistical measurement). This does not mean, however, that the problem of people experiencing significantly worse material situation than the rest of the society disappears. In the relative approach, poverty cannot be eliminated in practice. Changes in its extent are a consequence of changes in unevenness in the distribution of income, expenditure or other categories adopted as measures of well-being. At the same time, paradoxically, a reduction in the extent of poverty may also occur as a result of a worsening of the economic situation.

It is also important to monitor the extent of multi-dimensional poverty, estimated on the basis of complex indicators of 'poor living conditions' and 'budget imbalances'. In some sense, these indicators can be seen as proxy measures for the increasingly popular concept of poverty from the perspective of wealth, asset-based poverty. Housing conditions, household equipment and the possibility of satisfying various types of needs depend not only on the current income situation, but also on the accumulated resources and assets, on what housing resources the household has at its disposal, whether it is able to use its savings or is forced to repay high loans.

It is clear that the measurement method used (as well as the values of the parameters of the method on which the level of adopted poverty lines depends) has an impact on the value of the poverty rate obtained . The data for the years 2017-2018 show that the level of extreme poverty measured on the basis of expenditure was at the level of 4-5% of people, while the rate of income poverty estimated on the basis of EU-SILC 2018 calculated according to Eurostat criteria (60% of the median equivalent income) - about 15%. Results of the Social Cohesion Survey, carried out in the first half of 2018, indicate that about 2% of people lived in households experiencing so-called multidimensional poverty. This term refers to experiencing three forms of poverty at the same time: income poverty, poverty of living conditions and poverty assessed from the perspective of budget imbalance. On the other hand, the percentage of persons threatened by particular forms of poverty amounted respectively to: ca. 13% (income poverty), ca. 4% (poverty of living conditions and ca. 6% (poverty of budgetary imbalance).

Data on income inequality are equally important for the assessment of the social situation than poverty indicators. The results of EU-SILC (2018), which is currently treated as the main source of data for the analyses of this issue in Poland, show that the Gini coefficient reached the value of 27.8, while the quintile share ratio (S80/S20) 4.25. To complement the picture of poverty and inequality in Poland, prepared on the basis of the so-called objective data, information on the social perception of these phenomena is provided. The Social Cohesion Survey 2018 shows that opinions on the extent of poverty in Poland are differentiated, but it is perceived by the majority of the society as significantly higher than the objective measures indicate. The most frequently indicated assessments of the perceived extent of poverty range from 16% to 30%. The vast majority of the society believes that in Poland we are dealing with too large income inequalities (89%). There is also a common belief that the state should be responsible for reducing disproportions in this field and that the state should provide everyone with a basic minimum income and support people living in poverty. As the most appropriate forms of state aid addressed to the poor, respondents indicate (in order of frequency): assistance in finding a job, care for the disabled and chronically ill, increasing access to free medical services, assistance in running a household for the elderly and cash benefits.

It seems that obtaining systematic information on social perception of such important aspects of social and economic life as poverty or income distribution may be helpful both in conducting social dialogue as well as in creating, verifying and monitoring social policy aimed at improving the quality of life and increasing social cohesion.

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