

Multidimensional poverty: Methodology and calculations on Russian data

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Abstract

This article focuses on Multidimensional poverty index (MPI)—the alternative approach to poverty measurement. While the official monetary approach is based on a comparison of income with a certain poverty line (until 2021 in Russia it was based on the minimum subsistence level, since 2021 it has been calculated as a share of median income of the population), the MPI also includes deprivations that poor people may face. The text contains the description of the index calculation methodology, the results of its computation on Russian data (Statistical Survey of Income and Participation in Social Programs-2017), and the description of vulnerable groups of population in accordance with the MPI. Population groups that are identified as being at risk of poverty (according to the index) are similar to the vulnerable population based on the absolute monetary poverty approach. However, the index widens the list of such groups, covering older people and people with disabilities.

Keywords: poverty, multidimensional poverty approach, poverty measurement, poverty profiles.

JEL classification: I32, I38.

1. Introduction

Overcoming poverty is still the core task for social policy, both in Russia and abroad. Hence the issues concerning poverty measurement are of high importance. All the existing approaches to poverty measurement can be divided into monetary (or welfare) and non-monetary ones. The first one is based on the sums of money that a household or an individual has, while the latter focuses on other criteria.

The monetary approach methodology is adopted by the World Bank (2022), Eurostat (2021b), and OECD (2019). When this methodology is used, the core question is what are the criteria of being poor, i.e., what is the poverty line? Three possible answers to this question have formed three different monetary approaches to poverty: absolute, relative, and subjective.

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The absolute monetary approach employs the idea that those who cannot afford the minimal set of goods and services, those deemed necessary to survive, are poor. This approach has a rich history; the first attempts to implement it were made at the end of the 19th century by S. Rowntree and C. Booth in London and, later, in York (Laderchi et al., 2003). This poses the question: which goods and services are necessary and how do we evaluate their price? Usually, the set of such goods includes certain foods and durables. The list of food products can be formed in different ways: the necessary calorie intake or the consumption rate of fats and proteins can be considered. Some calculations can also include the requirements for vitamins and mineral consumption (see, for example, Allan, 2016). The main disadvantage of the absolute approach is that poverty becomes similar to survival.

In the case of the relative approach, income is compared with the consumption standard typical for a certain society. The median income is supposed to be the indicator of such level of consumption, while the poverty line is set at 60% of median income. Sometimes the criteria set at 40% or 50% of the median are also used. The approach is highly dependent on income distribution among the population.

The critics of absolute and relative approaches resulted in the development of the so-called subjective approach. Its core idea is to define the poverty line in accordance with the perception of the people. For the first time, this methodology was adopted by P. Streeten (Wagle, 2002). The same idea was employed in Gallup Institute and Eurobarometer studies (Ovcharova, 2009).

Monetary approaches provide a useful tool for poverty analysis; however, with the development of poverty studies, it became evident that poverty is not only about lack of money. This idea was developed in non-monetary approaches. They usually describe poverty in terms of deprivations (lack of necessary resources) or social exclusion. The deprivation approach is based on the idea that poor people have no access to certain goods, services, or practices that are widespread in society. The notion of social exclusion appeared in France in the 1960s. Later, the concept of social exclusion was developed further to include limitations in consumption, civil rights, etc. (Ovcharova, 2009). As well as with monetary approaches, the core issue is to identify the poverty line: the list of deprivations and the number of them for someone to be considered poor. In some cases, such a list of deprivations can be formed by the researcher. Such an approach was implemented by P. Townsend (1979) and T. Atkinson (World Bank, 2017). The attempt to form the list of deprivations in accordance with public opinion was made by Mack and Lansley (1985). Only the deprivations that were perceived as connected with poverty by 90% of the population were included in the list (Ovcharova, 2009).

Previous studies have demonstrated that the adoption of different approaches gives a high variation in poverty level evaluations (Laderchi et al., 2003). Each of the approaches has its advantages and disadvantages. The absolute one provides the ability to evaluate the number of people who cannot afford the minimum necessary set of goods and services, however, it doesn't enable to assess the number of people who have standards of living that are lower than in society in general. This problem can be solved by the relative approach, but its critics emphasize that any evaluation of poverty should include criteria other than mere income level, and other deprivations that poor people face should be considered. The latter are included in subjective and non-monetary methodologies; however, they also appear to be an imperfect solution as they raise the question regarding

specific deprivations that determine poverty. There is no perfect poverty measure. Its most complex vision can be acquired by combining the aforementioned approaches. While monetary indicators of poverty are constantly tracked by scholars and policymakers, less attention is paid to non-monetary ones.

To combine the advantages of all the approaches described above a complex index has been developed, which is called the Multidimensional Poverty Index (MPI). Nowadays, it is seen as a valuable tool not only to assess the poverty level, but also to develop social policy measures. In 2019, UNDP in cooperation with Oxford University released the step-by-step guide for developing the national MPI. The guide introduced the complex approach combining the development and assessment of the index and the measures for its popularization. Index decomposition and the ability to evaluate deprivations that are most typical for the poor population are core aspects for using the index as a social policy tool because they help to prioritize policy measures. Such an approach also makes it possible to track the effectiveness of implemented measures: if the weight of the domain in the index structure decreases, the social support system has a positive influence. The following countries use the MPI as a social policy tool: Mexico, Columbia, Costa Rica, Chile, and Vietnam (UNDP, 2019b).

The article is devoted to the index description and its calculation on Russian data. Recently, interest in poverty methodology measurement has risen. In 2017 the Ministry of Labor and Social Support introduced an initiative to change the structure of the consumer basket by 2021. However, in 2021 this question became irrelevant as the relative approach to poverty measurement was set for the official statistics. The minimum subsistence level is now based not on the consumer basket but on the income distribution of the population. The poverty line was set at 44.2% of median population income. The changes were fixed in the Federal Law dated October 23, 1997 No. 134-FZ “About the minimum subsistence level in Russia”; it is planned to review this ratio in 5 years.

As the poverty assessment was long based on the consumer basket, it was necessary to use the comparable approach to follow the poverty dynamics. For such evaluations, the notion of “poverty bound” was introduced. The calculation was based on the consumer basket that was multiplied by the price index.

Despite all the changes in the methodology of poverty measurement, all the introduced indicators have one characteristic in common: they are aimed at assessing monetary indicators and ignore the non-monetary aspects of poverty.

The problems of poverty in Russia seem to be an interesting case for research also in the political context. In 2018, the Decree of the President of the Russian Federation No. 204 dated May 7, 2018 “On national goals and strategic objectives of the development of the Russian Federation for the period up to 2024” was signed. The Decree aimed at halving the incidence of poverty levels: from 13.2% in 2017 to 6.6% in 2024. The COVID-19 pandemic changed the timing and the Decree “On the national development goals of the Russian Federation for the period up to 2030” was signed. The latter revises the period of expected poverty reduction to 2030. This indicates that the relatively rapid decrease of officially measured monetary poverty is planned while other poverty indicators fall out of the scope. The calculation of the MPI and its evaluation at the beginning and at the end of the considered period can show changes in non-monetary poverty aspects that accompany the rapid decrease in monetary poverty.

Summarizing all the ideas above, Russia seems to be a good example for MPI evaluation as the poverty line in the country changed several times over the last 30 years; however, it was always based on monetary approaches. As a result, the level and profile of absolute poverty are well-known, but less is known about non-monetary issues. This paper aims to fill this gap.

2. Poverty in Russia: Core issues

The dynamics of different poverty indicators are tracked by the Federal State Statistics Service (Rosstat). The open data demonstrates the share of the poor following the official methodology of poverty measurement and in accordance with international standards (Fig. 1). The World Bank sets the poverty lines at \$1.9 per day (if it is employed, the poverty level in Russia is close to zero), \$3.2 per day, and \$5.5 per day. The share of the poor identified by non-monetary approaches is not available.

Poverty in Russia is quite changeable: the transformations touch upon both the number of the poor and the composition of this group. In accordance with monetary poverty indicators, in the 1990s the decrease in living standards, that started during the transformation period, pushed into poverty about $\frac{1}{3}$ of the population, and the group of “the new poor” appeared. In the 2000s the economic growth that accompanied the favorable situation on the world raw materials market resulted in gradual poverty reduction. The economic crisis of 2008–2009 had a severe impact on the population; however, poverty levels didn’t change dramatically. The situation after this crisis turned out to be different: after 2013 the longest period of the decrease in real income took place—the process of recovery lasted several years, and the officially registered number of poor reached 13.3% (in 2015). The most significant reason for the poverty growth was the decrease in real wages and the growth in prices of basic goods (the spending on this category has a high share in the budget of the poor). In addition, for the first time in 15 years the decrease in real pensions was evidenced (in 2015), which dropped to 96.2% of the previous year’s level (Rosstat, 2022).

The comparative analysis of the structure of the poor population shows the most vulnerable groups (Tables 1–2). Those who live in rural areas, and members of

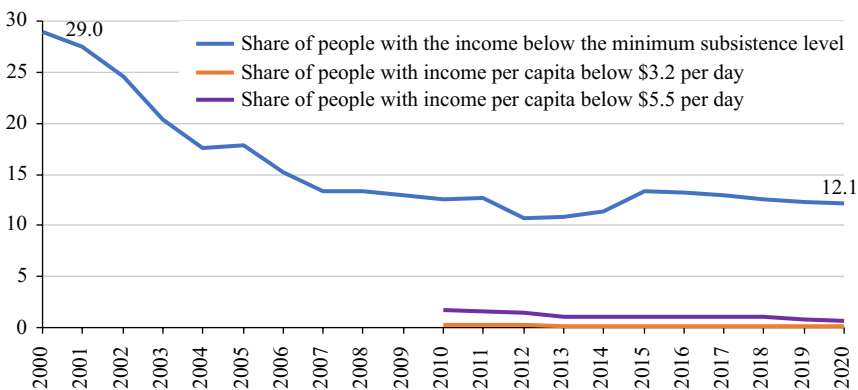


Fig. 1. The poverty level in Russia according to different approaches.

Table 1
The distribution of the poor households (official monetary approach) by different characteristics (%).

	All poor households							All households in the survey, 2019
	2013	2014	2015	2016	2017	2018	2019	
Households with income per capita below the minimum subsistence level								
<i>By the type and the size of the settlement</i>								
Living in urban areas								
<i>population size, thousand people:</i>								
Less than 50	41.8	41.1	47.1	47.8	48.5	49.1	47.4	76.2
50–99.9	17.2	19	17.1	17.2	15.2	16	15.7	13.7
100–249.9	6.4	5.4	7.0	6.4	7.6	7.7	6.7	8.4
250–499.9	5.9	5.1	6.3	6.6	6.1	6	6.3	10.2
500–999.9	4.1	4.3	6.3	6.2	5.9	6.5	4.7	10.4
1 million and more	3.6	3.7	5.1	5.6	6.1	7.2	6.2	10.1
Living in rural areas								
<i>population size, people:</i>								
Less than 200	58.2	58.9	52.9	52.2	51.5	50.9	52.6	23.5
201–1,000	1.0	2.1	1.6	2.3	4.2	1.3	4.9	2.0
1,001–5,000	22.6	25.2	19.8	21.3	21.1	17.4	20.0	7.5
More than 5,000	21.4	21.8	20.3	17.7	15.8	18.6	18.1	9.5
<i>By household size</i>								
Households consist of:								
1 person	13.2	9.7	11.1	11	10.4	13.6	9.6	4.7
2 people	8.5	7.3	6.8	5.1	5.3	5.0	5.0	26.4
3 people	13.8	12.0	11.4	11.4	10.7	9.5	10.0	29.0
4 people	20.5	22.1	21.0	19.9	20.9	18.6	19.4	21.0
5 or more people	28.2	28.8	28.2	29.4	28.2	28.4	28.7	14.0
<i>By the number of children</i>								
Households without children below 18 years old								
Households with children below 18 years old								
<i>number of children:</i>								
1 child	29.0	29.8	32.7	34.3	34.9	38.5	36.9	9.6
2 children	27.8	24.5	22.3	21.2	19	17.6	19.2	67.2
3 or more children	72.2	75.5	77.7	78.8	81	82.4	80.8	32.8
	28.1	28.3	28.1	26.0	25.6	23.8	21.4	17.8
	28.5	30.3	30.7	33.1	33.5	33.2	33.3	11.0
	15.6	16.9	18.9	19.8	21.9	25.4	26.0	4.0

Source: Rosstat.

Table 2
The distribution of the poor population (official monetary approach) by different characteristics (%).

	All poor population							All population in the survey, 2019
	2013	2014	2015	2016	2017	2018	2019	
<i>People with income per capita below the minimum subsistence level</i>								
<i>By the age</i>								
Children under 16 years old	34.6	35.6	36.6	37.5	39.3	39.9	41.0	19.0
Under 3 years old	7.5	7.1	7.2	7.1	7.1	7.3	7.0	2.4
3–6 years old	8.9	9.5	9.3	9.9	10.3	11.2	10.7	5.1
7–15 years old	18.2	19.1	20.0	20.4	21.8	21.4	23.3	11.6
Adults 18–29 years old	16.1	16.1	14.9	13.4	12.3	12.1	10.6	10.6
In working age	58.9	58.2	56.4	55.1	54.1	53.7	52.0	55.0
Male	28.1	27.8	26.8	26.7	26.2	25.9	24.8	28.5
Female	30.8	30.4	29.6	28.4	27.9	27.8	27.2	26.5
Above the working age	6.5	6.1	7.0	7.4	6.6	6.5	6.9	26.1
Male	1.5	1.4	1.6	1.8	1.5	1.7	1.8	7.8
Female	5.1	4.7	5.4	5.6	5.1	4.8	5.2	18.2
<i>By the economic activity</i>								
Employed (working)	32.0	32.4	33.6	31.9	31.5	31.0	28.9	53.3
including working retirees	0.7	1.0	1.0	1.0	0.7	0.8	0.7	10.0
Unemployed (not-working)	33.4	32.0	29.8	30.7	29.2	29.2	30.1	27.7
Not-working retirees	8.7	8.0	8.9	9.2	8.2	8.2	8.5	19.0
Other unemployed	24.7	24.0	20.9	21.5	21.0	21.0	21.6	8.7
including								
Old-age pensioners	7.3	6.4	7.0	7.5	6.7	6.8	7.0	27.2
Disabled pensioners	1.3	1.3	1.3	1.3	1.2	1.6	1.5	1.4
Receiving pension on the occasion of loss of the wage-earner	0.4	0.4	0.4	0.4	0.4	1.4	1.7	0.7
Recipients of social pensions	1.1	1.2	1.2	1.1	0.7	0.8	1.0	0.6
Recipients of unemployment benefit	3.3	3.1	2.4	2.3	2.1	1.9	1.9	0.6

Source: Rosstat.

large families (the share of households with 5 or more people among the poor is almost 4 times higher than among the families in general) face the highest risks of poverty. Families with children also often suffer from lack of money.

When the gender and age structure of the poor are considered, the dominance of the children aged below 16 years old should be mentioned. The share of those above the working age is lower than for the population in general. High risks of poverty are also typical for non-working people (except for non-working retirees).

The poverty profiles mentioned above were described by a number of scholars and remained stable in recent years (Ovcharova, 2014; Pishnyak et al., 2021; Gorshkov and Tikhonova, 2014).

The steps for evaluating non-monetary deprivation approaches were previously taken in the Russian scientific field (Tikhonova, 2014; Institute for Social Policy, 2017). The usage of different methodologies (different lists of deprivations and their number set as a poverty line) caused high variation in the estimated share of the poor: from 25% in 2013 (Tikhonova, 2014) to 14% in 2016 (Institute for Social Policy, 2017). The assessment based on the deprivation approach highlighted the higher poverty risks for retirees, who are seldom considered to be poor by the official statistics, especially in the case of families that consist only of retirees. The families with children, that are usually monetary poor, were relatively low deprived in comparison with households in general (Institute for Social Policy, 2017).

3. Material and methods

There are different ways to widen the scope of poverty analysis and include non-monetary indicators (like evaluation of subjective poverty or deprivations analysis). One of the examples of such an approach is the AROPE index (at risk of poverty or social exclusion) (Eurostat, 2021a). This index has a long history; in 2021 it was modified. Now it consists of three domains: severe material deprivation (presence of 7 of 13 different material deprivations), at risk of poverty rate, and low work intensity indicator. Such an index structure widens the definition of poverty, including not only monetary deprivations in the index. However, the index structure is rigid in that it enables cross-country comparisons but doesn't allow to adapt the index for a regional context.

The deprivation index, which was described above, is the alternative to the AROPE index. When such a methodology is employed, the set of deprivations is formed. Those who suffer from a certain number of problems are classified as poor (UNECE, 2017). The list of deprivations can be changed, making it possible to adapt the index for each country. However, some problems can be more harmful to people than others. This idea can be taken into account when the Multidimensional poverty index is used, which introduces the weights for each index component (the higher is the weight, the more serious is the problem). Below, the index methodology is described.

We focus on the MPI that has different implementations all over the world. The renowned economist Amartya Sen is considered to be the founder of this approach, as he was the first to formulate the idea that poverty is not just about the lack of money, but rather the lack of capabilities. According to his theory, the development of society should result in widening the range of human capa-

bilities. If there are no such capabilities, or they are not enough, one can be considered poor. Sen (1995) supposed that just reducing the definition of poverty to a mere lack of money makes people set lower requirements and, finally, they adjust their expectations and wishes to the issues that appear feasible which is a sort of “adapted preferences.” However, people should live a “valued life.”

Sen’s idea was developed by his followers, Sabina Alkire and James E. Foster (Alkire and Foster, 2008). They proposed a methodology that included the aggregated indicator to take into account the problems that the poor face and which capabilities they lack (in the paper we will call it “deprivation”). The MPI was approved by many scholars, and used as a basis for the United Nations Development Program Global Multidimensional Poverty Index (UNDP, 2019a).

Two steps should be taken to build this index. Firstly, the set of deprivations that a person or family can face is formulated. The criteria for suffering from each problem are set up, to make it clear whether one faces deprivation or not. For example, for such deprivation as “access to drinking water,” the following criteria can be used: “having access to improved drinking water within 30-minute walk from home, round trip”.

Secondly, all the identified problems are divided into groups or domains. As a result, the index consists of domains, and each domain consists of a list of deprivations. The methodology of the index calculation is based on the assumption that the importance of different domains, for poverty evaluation, can differ. To take it into account, the weight coefficient for each domain can be introduced: the higher is the weight, the more important is the domain and the higher is its impact on the total index. The coefficients are set in accordance with expert opinion or mathematical calculations. In any case, all the coefficients should sum up to 1.

The weight of each domain is allocated evenly to each deprivation it includes. After that, for each case in the sample (person or family), the total sum of the weights of deprivations it faces is computed. The result is compared with a threshold—the specific poverty line (sum of weights that depends on the number of deprivations) and, if the sum is higher than this threshold, the individual or household is considered to be poor.

MPI is calculated as the product of two indicators:

$$MPI = H \times A, \quad (1)$$

where H is poverty headcount; A is average intensity of deprivation.

The share of the poor is calculated as the ratio:

$$H = \frac{q}{n}, \quad (2)$$

where q is the number of poor, n is all the population.

The average intensity of deprivation is estimated as the weighted average of deprivations among the poor population:

$$A = \frac{\sum_1^q c_i}{q}, \quad (3)$$

where q is the number of the poor, c_i is the Poverty index (weighted) for individual i .

The MPI methodology is still developing nowadays. Initially, it was used to evaluate poverty indicators in a certain period, but later, the authors decided that it was important to track a person's position: can one escape from poverty, or do they have to stay poor for a long time? The MPI methodology was widened and used to evaluate chronic poverty (Alkire et al., 2017a). The index is also used for cross-country comparisons (Alkire et al., 2017b) and for tracking the position of specific population categories (for example, to assess poverty in children; Alkire and Sumner, 2013).

Proposing the tool for poverty index measurement, the authors rejected the idea of constructing a unique set of domains and deprivations, believing that each situation of poverty measurement has its peculiarities, and the list of problems should depend on the research tasks. That made it possible to conduct similar computations, but using the data that were available for them (Alkire and Foster, 2011).

The principles of MPI construction become more evident when looking at the examples of the index (Table 3). The Poverty index, proposed for developing countries, and used in the UN work, is probably one of the most well-known cases. The index includes three domains (UNDP, 2016): education (school attainment, school attendance), health (nutrition, child mortality), and standard of living (electricity, drinking water, sanitation, cooking fuel, having a home with dirt, sand or dung floor, assets). In this case, the weights of the domains are

Table 3

The examples of MPI composition for different countries.

Country	Domains	Source
Developing countries	Education (school attainment, school attendance) Health (nutrition, child mortality) Standard of living (electricity, drinking water, sanitation, cooking fuel, having a home with dirt, sand, or dung floor, assets)	UNDP (2016)
Indonesia	Expenditure Health: Low body mass index (BMI) Schooling (years of schooling completed) Cooking fuel Drinking water Sanitation Sewage disposal Solid waste disposal	Alkire and Foster (2008)
European countries	Basic deprivation Consumption deprivation Health Neighborhood environment	Whelan et al. (2014)
	Income Employment Material deprivation Education Environment Health	Alkire and Apablaza (2016)
USA	Income Health Schooling Health insurance	Alkire and Foster (2008)

Source: Compiled by the authors.

distributed evenly, and the threshold is set at 33.3%. The indices with a similar structure were used by the MPI authors to assess chronic poverty and poverty dynamics in different countries, for example, for chronic poverty evaluation on survey data in Chile in 1996, 2001, and 2016. In this case, the weights were also distributed evenly among the domains (with the threshold set at 33.3%; Alkire et al., 2017a). Cross-country comparisons, which cover 34 countries from different regions, were also conducted, with the last observations made in 2010–2012 (Alkire et al., 2017b).

The other index structure was chosen by the authors for Indonesia. The index included eight domains. The authors compared the poverty level using the different poverty cut-offs. The poverty level varied from 0.5% (criteria set at eight domains) to 83.2% (poverty line set at one domain, i.e., to be considered poor one needed to suffer from only one domain included in the analysis) (Alkire and Foster, 2008).

There is no unique index structure for developed countries; the calculations were usually performed on EU-SILC (European Union statistics on income and living conditions) data. One of the MPI variations included four domains: basic deprivations, consumption deprivations, health, and environment (Whelan et al., 2014). The alternative modification was based on six domains with equal weights: income, employment, material deprivation, education, environment, and health. The authors also emphasize the dependence of MPI share of the chosen poverty line. Finally, they choose the poverty line set at 33.3% of all the domains and estimated the MPI poverty headcount in Europe as 8.8% for 2012.

The case of MPI for the USA is also worth noting (Alkire and Foster, 2008). The index had the following structure: income, health, schooling, and health insurance. The authors also considered different poverty lines and the poverty headcount based on each of them. The indicator varied from 0.44% (while the poverty line was set at four domains) to 23.82% when the poverty line was set at one domain.

The examples of the MPIs described above show the huge difference in indicators for different objects. However, general ideas for all the MPIs considered are quite similar. Using the different survey questions, all of them include health, education, and material well-being. Besides this, the data demonstrates the variation in poverty headcount for different poverty lines. The MPI with a structure similar to the UNDP one was calculated for Russia; however, it dates back to 2003 and the situation has changed dramatically in subsequent years (as we demonstrated for monetary poverty). Besides this, the relevance of the indicators included in the index nowadays is to some extent questionable. The index equals 0.005 and the poverty headcount achieved 1.3% (the share of the poor in accordance with official statistics for the same period was 17.4%). The alternative version of the index, introduced in 2019, was made with the correction of its structure. The calculation on the Comprehensive Monitoring of Living Conditions of the Population for 2014 included three domains: education, health, and living conditions. In accordance with this approach, the poverty headcount was 22.8% and the MPI was 0.100 (Kapelyuk and Ryabushkin, 2019). The attention to MPI was paid even in more recent studies; however, scholars focused on theoretical aspects of the MPI and AROPE calculation (Maleva et al., 2019).

The adepts of MPI made many attempts to construct similar indices for different countries, including developed ones. However, in most cases, they faced problems owing to the lack of totally comparable data and the existence of some specific traits of each country (as we've mentioned, initially, MPI was constructed for developing countries and included deprivations that are typical for them, like access to drinking water, having a ground floor, and the type of construction material—concrete, for example, in the house, etc.).

When adapting the index for the goals of different countries, many scholars tried to keep the structure of the index, using the same list of domains as the UN, but changing the set of problems. Other authors made attempts to expand the list of domains or formulate a new one, grouping the deprivations that are relevant for a certain country.¹ In most cases, the research strategies were conditioned by the data available to the scholars. Taking into account the existence of several approaches to index construction, we assess the ability to use it on Russian data.

4. Calculation

4.1. Constructing the index

It's not possible to fully replicate the existing methods of MPI building on Russian data: none of the Russian surveys cover the full list of deprivations that is used for calculating the index abroad. However, like other authors, we can modify the index structure in accordance with our knowledge of the problems that poor families face in Russia. Such a strategy was used, for example, in (Whelan et al., 2014), after the data analysis the authors proposed four domains (basic deprivation, consumption deprivation, health, and neighborhood environment). Similar ideas were adapted to construct the MPI for the USA (Dghongde and Haveman, 2015), and other domains were identified (health, education, income, and housing).

The abilities for MPI measurement are mainly limited by the data available for the researchers. As MPI is based primarily on information about the deprivations, the data of two large surveys can be used. The first one was mentioned above—the Comprehensive Monitoring of Living Conditions of the Population; the other is the Statistical Survey of Income and Participation in Social Programs.² None of them is able to replicate the index structure used in the European countries totally, however, the specific Russian index can be constructed. To find out the proper index composition, several index modifications were calculated on the data of both studies. Finally, the Statistical Survey of Income and Participation in Social Programs was chosen as it has a wider range of monetary indicators and holds more potential for further analysis.

The chosen dataset is also used as the basis for calculating official monetary poverty indicators in Russia (as a result it's possible to compare the groups identified in accordance with MPI and absolute monetary approaches). The set

¹ For examples of the index for developing countries, see Rogan (2016), Montoya and Teixeira (2017), Pinilla-Roncancio (2017), Santos and Villatoro (2018), Beycan et al. (2019). Examples of the index for developed countries can be found in Dghongde and Haveman (2015), Whelan et al. (2014), Yang and Vizard (2017).

² For more details see the site of Rosstat: http://www.gks.ru/free_doc/new_site/vndn-2016/index.html (in Russian).

of deprivations included in the questionnaire is stable (for some years the wording was changed but the list in general remained unchanged); it reflects the core problems of the poor and is conventionally used for the analysis of deprivations by both social scholars and official statistics.

The most detailed and suitable for our tasks data of the Statistical Survey of Income and Participation in Social Programs describes the situation typical for 2016. The survey is conducted in all Russian regions, and respondents fill in two questionnaires. The first contains questions about the household (its welfare, social benefits, etc.), and the other consists of questions about each member of the family. The database covers 160,008 households and 370,130 members (both children and adults).

The list of deprivations that are available for analysis is rather wide: it covers 22 problems that vary by their incidence (Fig. 2; the table with questions wording in Appendix A). Some of the deprivations are included in the household questionnaire (like having the ability to purchase durable goods, facing problems with paying for accommodation rent, or communal services). When such data is analyzed, the deprivations are attributed to each member of the family that suffers from the specific problem. The share of people that face some of the deprivations

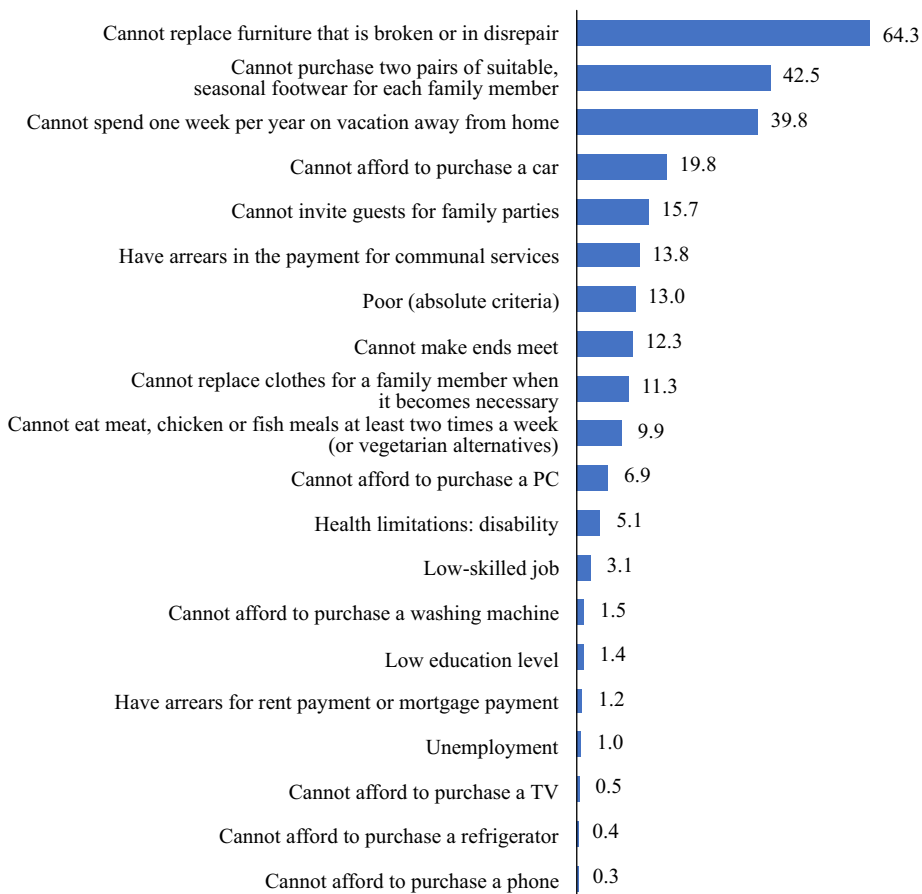


Fig. 2. The incidence of deprivations among the Russian population.

Source: Authors' calculations.

is close to zero. However, even the presence of a small number of people with such deprivations highlights the necessity to provide social support for them. Moreover, the index structure is rather heterogeneous, and the combinations of deprivations have an impact on the index level. As a result, even not especially widespread deprivations, if they exist alongside other problems, can push people into poverty.

The most widespread problem is the inability to replace furniture that is old or in a state of disrepair; such a situation is typical for 64% of all Russians. The inability to purchase two pairs of suitable, seasonal footwear for each family member (43%) and to spend one week on vacation per year away from home (40%) are less widespread but also mentioned rather frequently.

There are also some deprivations that are relatively rare: less than 1% of respondents mentioned that they live in dorms or communal apartments, also less than 1% answered that they are not able to purchase a TV, refrigerator, or phone. The percentage of families which have children with socially significant diseases³ is close to zero.

The structure of the index is highly dependent on the data available. The deprivations that are assessed in the study can be grouped into three domains: education, health, and standard of living. However, in this case, the overwhelming majority of deprivations will fall into the “standard of living” domain.

As we have shown above, the weight of the domain is distributed among all the deprivations it consists of. And if the domain “standard of living” includes many problems, the weight of each of them will be small. However, the domain contains such serious problems as the inability to make ends meet and having an income below the subsistence level. Taking into account their importance for “living the valued life,” using the minimum weights for them (and reducing their impact on the MPI), seems to be incorrect.

To avoid such drawbacks, all the deprivations included in the database were divided into eleven small domains, with a comparable number of deprivations in each one, in accordance with expert views (Table 4). All domains have equal weights, and all deprivations in these domains have the same weight.⁴

When MPI is calculated three indicators are assessed:

- H—Poverty headcount ratio;
- A—Average intensity of deprivation;
- M_0 —Multidimensional poverty index itself.

First, let’s have a look at the share of the poor population. The MPI methodology makes it possible to track how this indicator varies, depending on the changes in the poverty threshold (the sum of weights of the problems the individual faces). Fig. 3 shows how the share of the poor changes in accordance with the number of domains that makes us consider somebody poor.

Choosing the poverty threshold is an issue that requires specific consideration. In this article, we follow the ideas of the authors who made the comparative analysis of multidimensional poverty in different European countries

³ The list of socially significant diseases is defined by the Government Decree and includes infectious diseases such as tuberculosis, hepatitis B and C, sexually transmitted diseases, HIV, diabetes, malignant neoplasms, mental and behavioral disorders, and high blood pressure diseases.

⁴ We use the structure of the MPI based on EU-SILC data as a benchmark when choosing the structure of our index and domains’ weights (see, for example, Whelan et al., 2014).

Table 4

The structure of the MPI domains.

Indicator	Domain	Domain weight	Deprivations weight
Health limitations: disability	D1: Health	0.091	0.091
Low education level	D2: Education	0.091	0.091
Low-skilled job	D3: Employment	0.091	0.046
Unemployment			0.046
Have arrears for rent payment or mortgage payment	D4: Basic needs	0.091	0.003
Cannot make ends meet			0.003
Have arrears in the payment for communal services			0.003
Cannot eat meat, chicken, or fish meals at least twice a week (or vegetarian alternatives)	D5: Nutrition	0.091	0.091
Cannot replace clothes for a family member when it becomes necessary	D6: Clothes and footwear	0.091	0.046
Cannot purchase two pairs of suitable, seasonal footwear for each family member			0.046
Cannot invite guests for family parties	D7: Communication and rest	0.091	0.046
Cannot spend one week per year on vacation away from home			0.046
Cannot afford to purchase a refrigerator	D8: Basic goods	0.091	0.046
Cannot afford to purchase a washing machine			0.046
Cannot afford to purchase a PC	D9: Means of communication	0.091	0.003
Cannot afford to purchase a TV			0.003
Cannot afford to purchase a phone			0.003
Cannot afford to purchase a car	D10: Large purchases	0.091	0.046
Cannot replace furniture that is broken or in disrepair			0.046
Poor (absolute criteria) ^{a)}	D11: Income	0.091	0.091

^{a)} Russia is a large country that consists of a number of regions. They differ by income and price levels. These differences are considered in the regional minimum subsistence level (MSL). Poverty estimations in our study are based on this MSL.

Source: Authors' calculations.

(Whelan et al., 2014) and set the threshold that results in a poverty headcount ratio, similar to the case of relative poverty line usage. To evaluate the latter, the poverty line is set at 60% of the median disposable income of the population; the income is modified with equivalence scales. The data of Statistical Survey of Income and Participation in Social Programs demonstrates that, in this case, the share of the poor achieves 22.3%. So, identifying those who are poor, by three or more domains, seems to be the most reasonable (the poverty headcount will achieve 24.8%).

At the time when the survey was conducted, official Russian statistics used the absolute monetary approach, comparing the income with the minimum subsistence level. The poverty headcount assessed in accordance with it is significantly lower—13.0% (Fig. 3). As our work is rooted in European methodology, the poverty threshold is based on calculations of the relative poverty level.

Researchers working with MPI usually consider not only the dependence of the poverty headcount on the threshold, but also the dependence of the index itself and its parts. Below, two more indicators are considered—the average

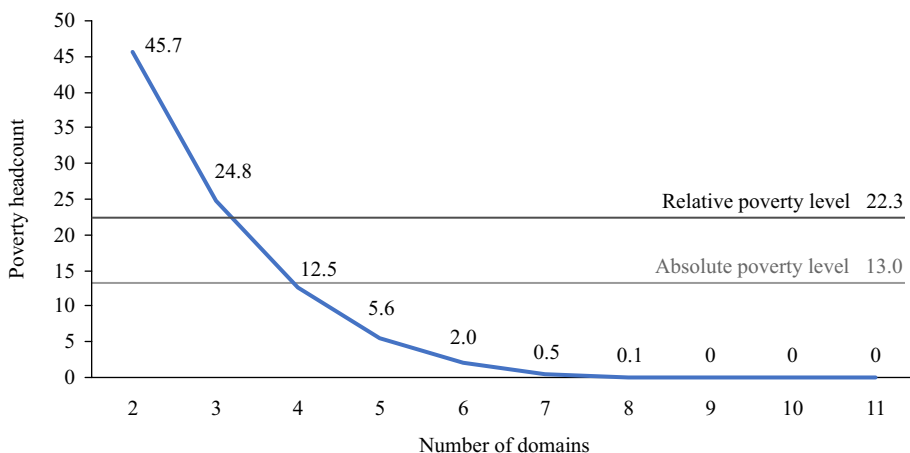


Fig. 3. The share of the poor in accordance with the number of domains.

Source: Authors' calculations.

Table 5

The poverty headcount, the average intensity of deprivations, and the MPI.

	Number of domains			
	3	4	5	6
H (poverty headcount)	24.8	12.5	5.6	2.0
A (average intensity of deprivations)	30.9	38.0	45.1	52.7
M (poverty index)	7.7	4.8	2.5	1.0

Source: Authors' calculations.

intensity of deprivation and the Poverty index itself. As Fig. 3 shows, when the poverty threshold is set at two domains, the poverty headcount achieves half of the population and when the threshold is set at seven domains, the share of the poor reduces to less than 1%. This means that almost everyone or nobody is poor. We reject such extra cases and focus on the situation when only those who suffer from deprivations from three–six domains are considered to be poor.

As Table 5 shows, the MPI varies from 7.7 to 1.0, the average intensity of deprivations—from 30.9 to 52.7. In other words, when the number of domains increases, the poverty headcount reduces, but the poverty becomes deeper.

The contribution of each domain to the index is another aspect that is traditionally considered when working with the MPI. To evaluate it the sum of weights of all deprivations in a certain domain for the poor is divided by the sum of all deprivations that all poor individuals in the sample have. All the contributions should sum up to 1. The data of Statistical Survey of Income and Participation in Social Programs shows that the domain “communication and rest” makes the largest contribution to the MPI. It means that, among those who are poor according to the MPI, there are a lot of people who cannot invite friends to their place and afford to go on vacation away from home (these two problems form this domain). These problems remain the core ones with no impact on the number of domains chosen to set a threshold (Table 6).

Table 6
Contribution of each domain to the MPI.

	Number of domains			
	3	4	5	6
Health	0.036	0.030	0.028	0.025
Education	0.013	0.017	0.024	0.035
Employment	0.014	0.015	0.015	0.020
Basic needs	0.078	0.084	0.087	0.085
Nutrition	0.109	0.133	0.149	0.154
Clothes and footwear	0.185	0.174	0.163	0.152
Communication and rest	0.195	0.182	0.170	0.157
Basic goods	0.010	0.014	0.020	0.031
Means of communication	0.026	0.033	0.039	0.045
Large purchases	0.208	0.181	0.162	0.148
Income	0.126	0.137	0.143	0.148

Source: Authors' calculations.

Raising the threshold means making the criteria for poverty identification firmer: the higher is the threshold, the more deprivation one should suffer simultaneously, and the more difficult one's circumstances should be. The MPI structure shows how the contribution of each domain changes when the threshold is raised: when it is relatively low, the domain "large purchases" has the highest impact, when the threshold is higher, the share of the people who cannot satisfy basic needs increases (like purchasing clothes, footwear, and food).

So, the MPI enables finding out which deprivations the poor face most frequently and how the figures change when different thresholds are chosen. However, these questions do not make clear which social groups have the highest risks of poverty that is very important for developing a pro-poor social policy.

This makes evident the task of comparison of the MPI for different social groups. All the calculations described above were performed at individual levels. However, one should consider not only individual data but also the information about the household, as its composition can influence the risks of poverty. We'll calculate the MPI for households as the mean for the individuals living there. The share of poor families in this case is 23.6%.

Summarizing the results, we should underline that the threshold was set at three domains level (as it results in the poverty headcount similar to the one set at 60% of median income). The poverty headcount will reach 24.8%, the MPI—7.7.

4.2. The ratio of groups of the poor identified using the MPI and the other approaches

Before moving to MPI poverty profiles evaluation, we should consider the ratio of the poor, identified by the MPI and the absolute monetary approach. When choosing the proper MPI threshold, we mentioned that the level of relative poverty was 22.3%,⁵ and we chose the threshold for the index to get 24.8% poverty headcount, while the absolute monetary poverty level for the same period was 13.0%. Below, the description of these figures' ratio is given.

⁵ Here and below the income evaluations with scales of equivalence are used.

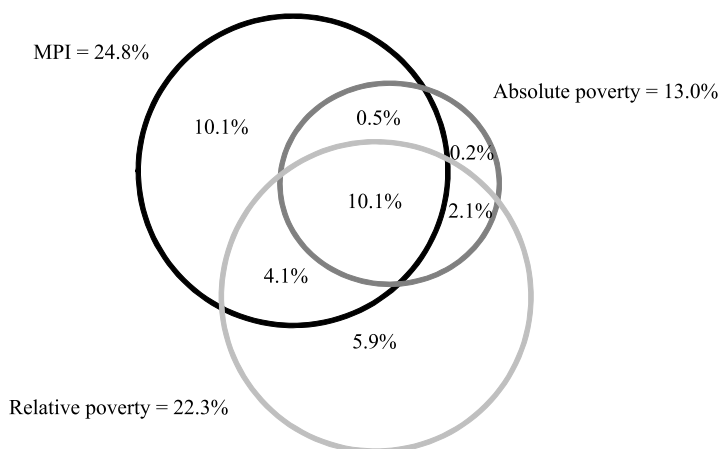


Fig. 4. The intersection of absolute, relative, and multidimensional poverty.

Source: Authors' calculations.

The share of those who are poor, according to three approaches altogether (relative, absolute, or MPI) is one of the highest among Russian households—10.1%. Almost the same number of individuals are considered poor only in accordance with the MPI criteria. The share of those who are poor only when the criteria of relative approach are adapted is also rather high—5.9%. The share of those who are poor in accordance with both relative and MPI criteria is a bit lower and equals 4.1% (Fig. 4).

The MPI approach to poverty measurement provides wider scope to the problems of low-income groups. Due to the fact that the absolute approach is used in the official statistics in Russia, below, we compare the structure of the MPI for those who are poor, in accordance with MPI only and those who are poor in accordance with MPI and the absolute approach.

In the case of the absolute approach, as well as in the case of the MPI implementation, most Russians suffer from problems that fall into “communication and rest” and “large purchases” domains. A high headcount ratio of those who face the problems listed above can be explained, not by the specific traits of the poor Russian population but by their high incidence in Russia. As Fig. 1 demonstrated, the inability to replace furniture that is in a state of disrepair is typical for 64% of the Russians, and to purchase a new car—for 20%. These two problems form the domain “large purchases.” Problems with communication and vacation are also not unique for the poor: 40% of all Russians cannot afford to spend one week per year away from home, 16% of all survey participants cannot invite guests to a party. Such a component as the inability to purchase two pairs of suitable, seasonal footwear for each family member is also widespread and was mentioned by 43% of the population.

It should also be noted that the income of those who are poor according to the MPI is sometimes rather far from the poverty line. If we look at the income quintile distribution of those who are poor according to the MPI criteria, we'll see that even in the highest quintile there are some MPI-poor people, but their share is only 3%. When going to lower quintiles their share increases and in the first (the poorest) one achieves 59% (Table 7).

Table 7

Poverty headcount ratio depending on the quintile group by per capita income.

Quintile	The share of the poor according to the MPI, %	N
Q1 (the lowest)	59.0	149,648
Q2	25.1	100,812
Q3	13.5	60,626
Q4	6.3	35,946
Q5 (the highest)	3.1	20,074

Source: Authors' calculations.

The presence of those who are poor by the MPI criteria even in relatively rich social strata can be explained, to some extent, by the deprivations that are included in the index. For example, having debts for rent or mortgage payments can be an indicator of serious housing problems as well as an indicator of good financial capabilities: one could choose this answer in case of problems with rented commodities or debt over an expensive mortgage. Besides this, the status of the disabled is considered as an indicator of poor health but it can have no connection with financial problems. Unemployment is also used as one of the MPI components; however, it could be short-term and have no influence on material well-being in the long-term. All these statements should be checked further to build the optimal index composition.

4.3. The impact of household and individual traits on the MPI

Here we compare the MPI for different social groups that will clarify which families mainly face the problems of poverty⁶ (Table 8). First, the highest values of the MPI among children under 19 years old should be mentioned. Such data only confirms the well-known idea about the high vulnerability of Russian families with children.⁷ One more confirmation will be presented below comparing the MPI for different types of households. For groups of people above 20 years old, the MPI meanings are rather similar; they remain relatively low until retirement age while the significant increase in the index can be seen.

This fact is important: when monetary approaches to poverty measurement are used the households with retired members usually appear not to be poor because they have a stable income.⁸ However, the MPI demonstrates that even when they have income above the poverty line, older people suffer from deprivations that prevent them from maintaining an acceptable standard of living. The reduction of monetary poverty among the oldest population was caused by the growth of pensions and by the development of social benefits for older people. Since 2010, a social benefit that increases the pension up to the minimum subsistence level was introduced (Ovcharova, 2014). But although this measure removes them from the “statistical” poor, their lifestyle remains largely unchanged.

⁶ When the MPI is calculated for socio-demographic groups, the means are calculated for sub-sample in general (for both the poor and non-poor population). But the MPI equals 0 in instances where one is not poor.

⁷ Regarding child poverty, see Ovcharova, 2019.

⁸ According to Rosstat (2020) data, in 2017 the share of people older than employment age among the overall poor population was 6.6% (1.5%—male, 5.1%—female), among all the population—25.1% (7.4%—male, 17.7%—female).

Table 8
MPI for different groups of population and households (HH).

Group	Mean	Std. error	95% confidence interval		Sample size
			Min	Max	
<i>Individuals</i>					
Total	7.67	0.02	7.63	7.71	367,106
By age					
16–19 years old	9.29	0.14	9.03	9.57	12,170
20–29 years old	6.87	0.07	6.73	7.00	38,515
30–39 years old	7.32	0.06	7.20	7.44	52,568
40–49 years old	6.71	0.06	6.59	6.83	49,412
50–59 years old	5.95	0.05	5.85	6.06	58,069
60–69 years old	7.20	0.06	7.08	7.31	54,035
70–79 years old	10.07	0.09	9.89	10.25	26,161
80 years old and above	8.68	0.12	8.43	8.94	11,160
By age groups					
Aged 14 and below	10.20	0.06	10.09	10.34	60,865
At employment age	6.94	0.002	6.89	6.99	274,821
Aged 72 and above	9.87	0.08	9.71	10.04	29,469
By economic status					
Working retirees	3.57	0.06	3.46	3.70	24,687
Non-working retirees	10.49	0.05	10.40	10.59	100,841
By employment status					
Have work	11.33	0.04	11.24	11.42	131,388
Do not have work	5.10	0.03	5.01	5.12	164,235
By professional positions					
Senior position	1.29	0.08	1.14	1.43	6,140
Specialist with high qualification	2.20	0.04	2.13	2.27	40,180
Specialist with medium qualification	3.66	0.07	3.53	3.80	20,628
Employee	4.79	1.31	4.53	5.05	7,172
Worker of the service sector	7.10	0.08	6.94	7.27	26,250
Qualified agricultural specialist	7.02	0.09	6.84	7.20	21,202
Operator of manufacturing engine	5.98	0.09	5.80	6.15	18,628
Low-skilled workers	18.80	0.15	15.58	19.20	15,091
By educational level					
Postgraduate	2.19	0.16	1.87	2.51	2,193
Higher	2.91	0.03	2.85	2.98	78,367
Incomplete higher	6.39	0.18	6.03	6.74	4,736
Secondary special	7.34	0.04	7.25	7.42	101,300
Technical and vocational	9.89	0.09	9.72	10.07	29,875
Secondary general	11.61	0.07	11.47	11.75	52,565
Incomplete secondary	17.10	0.12	16.86	17.33	26,872
No secondary	15.88	0.24	15.41	16.34	6,159
<i>Households</i>					
Total	7.24	0.03	7.18	7.31	160,008
By household size					
1 person	8.16	0.06	8.03	8.29	48,790
2 people	5.81	0.05	5.71	5.91	53,682
3 people	5.83	0.07	5.69	5.97	29,489
4 people	7.53	0.09	7.34	7.73	18,939
5 or more people	11.59	0.16	11.26	11.92	9,108

(continued on next page)

Table 8 (continued)

Group	Mean	Std. error	95% confidence interval		Sample size
			Min	Max	
By having the retirees in the household					
HH without retirees	6.10	0.05	6.00	6.20	66,016
HH with one retiree and other HH members	7.97	0.09	7.79	8.14	24,782
HH with two retirees and other members	7.04	0.15	6.75	7.33	7,448
HH consists of retirees only	8.60	0.06	8.49	8.71	61,037
By having children in the household					
No children	6.48	0.04	6.41	6.56	116,913
1 child in HH	7.03	0.08	6.87	7.20	25,878
2 children in HH	10.06	0.13	9.80	10.32	13,531
3 or more children in HH	17.58	0.29	17.00	18.16	3,686
By federal district					
Center	5.46	0.06	5.34	5.57	40,560
North-West	5.58	0.09	5.40	5.76	17,448
Volga	7.18	0.08	7.04	7.33	31,536
Ural	7.37	0.12	7.14	7.61	13,152
Siberia	10.06	0.1	9.86	10.27	21,936
Far East	7.87	0.14	7.59	8.14	10,200
South	7.92	0.11	7.70	8.13	16,584
North-Caucasus	10.97	0.17	10.28	11.30	8,592
By settlement type and size, people					
City, less than 50,000	7.97	0.07	7.83	8.10	40,584
City, 50,000–99,000	6.89	0.11	6.67	7.11	12,840
City, 100,000–249,000	6.07	0.11	8.85	6.28	12,744
City, 250,000–499,000	5.66	0.11	5.44	5.87	11,952
City, 500,000–999,000	6.04	0.13	5.80	6.30	9,456
City, 1 million and more	4.11	0.07	3.98	4.25	22,584
Rural, 200 and less	12.60	0.33	11.92	13.23	2,496
Rural, 201–1,000	13.04	0.12	12.81	13.27	20,352
Rural, 1,001–5,000	11.05	0.12	10.81	11.28	17,976
Rural, more than 5,000	10.34	0.16	10.01	10.66	9,024
By disabled people in household					
Disabled in HH	14.63	0.11	14.42	14.84	21,673
No disabled in HH	6.26	0.03	6.20	6.33	138,335
By having unemployed in household					
Unemployed in HH	10.51	0.05	10.42	10.61	91,256
No unemployed in HH	4.19	0.04	4.10	4.27	62,752

Source: Authors' calculations.

Working retirees sometimes manage to overcome the problems of low income; the average MPI for this group drops to 3.6, while for non-working retirees it reaches 10.5 (and 7.7 for the population in general).

The position on the labor market has a significant impact on the risks of poverty not only among the retirees: the higher is one's position in this area, the lower is the probability of falling into the category of poor. The differences become evident when the index is compared for the people at and below, or above, the employment age. Among the first one, the average index is 7.0, while among the people aged 15 and less, and above 72 years, it reaches 10.2 and 9.9 respectively.

The gap between employed and unemployed is even larger: while the MPI for the former equals 5.1, it is twice as high for the latter (11.2). The large difference can also be seen between those who work in the formal and informal sectors.⁹

And finally, the variation of the poverty index for people working in different professional positions should be highlighted. The low-skilled workers significantly differ from any other groups as their index achieves 18.9. This group is closer to those who are unemployed (24.8) than to other workers. Such high values of the index can, to some extent, be explained by including low-skilled work and unemployment in the index as its components.

For other employment groups, the differences are not as large and vary from 1.3 for the people at senior positions to 7.1 for those who work in the service sector.

The position in the labor market is closely connected with the volume of knowledge and skills acquired by the person: the smaller it is the lower labor market position is and the higher are the risks of poverty. The MPI data confirms this idea. The absence of basic education and incomplete secondary education are the components of the index. The MPI in these groups is high and the poverty headcount ratio according to the MPI criteria is about half of all respondents. The decrease in the index that accompanies the increase in the education level is also evident. If the index for the respondents with general secondary education is 11.6, for people with higher education it drops to 2.9.

All the factors that cause high values of the MPI are related to the individual peculiarities of the Russians. But the household composition also plays a great role in the context of poverty risks. To find out which families have the higher poverty indicators let's move to the sample of households and compare the MPI for their different types.

The largest households are at higher poverty risks, and the MPI for them achieves 11.6. For people living alone, the figures are also higher than for the population in general but the gap is not as wide as for large families.

Below, we demonstrate how the presence of different categories of dependents in a household influence poverty indicators. The households with retirees have higher MPI values than those that have no retirees. The core factor is the fact of retirees' presence itself while their number has a weaker impact. The indices for the households with one and two retirees are rather close. The households that consist only of retirees seem to be the most vulnerable. The MPI for them is higher than for the households where retirees live together with other family members, so supporting the contention that even with income above the subsistence minimum, retirees cannot maintain a satisfactory standard of living.

As well as the retirees, children also increase the dependents' burden. The gap between the families with and without children is very large. For households with children under 15 years old the MPI achieves 9.0, while for families without children it is 6.5. The growth in the number of children is accompanied by the in-

⁹ For identifying those who work in the formal and informal sectors, the variable of Statistical Survey of Income and Participation in Social Programs is used. Those who worked at the enterprise or entity are supposed to be formally employed, while the others (working on a farm, or for relatives, or on an individual basis, etc.) are supposed to be employed informally.

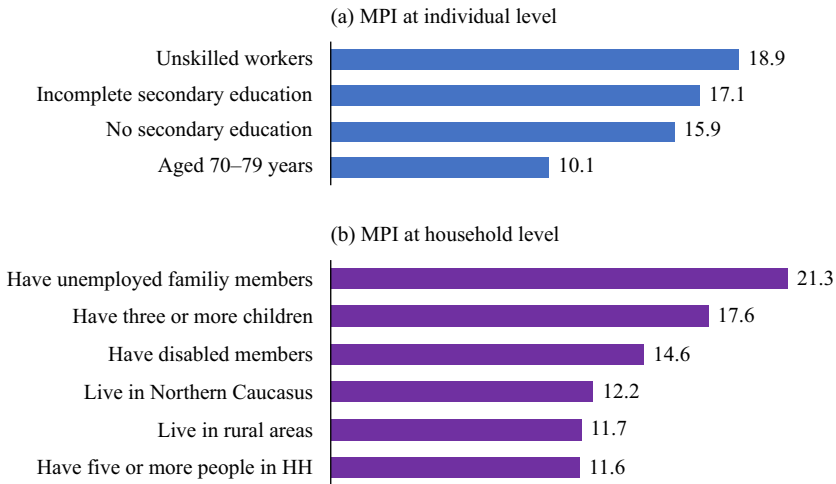


Fig. 5. The MPI comparison for different groups of the population.

Source: Authors' calculations.

crease in the MPI. Large families have the highest MPI: it is twice as high as for the population in general.

Living in households with disabled people also increases the risks of poverty: the MPI for families with people with disabilities reaches 14.6. For families without them, the index is about 6.3.

Having unemployed family members also increases the risks of poverty for the household. The MPI reaches 21.3 for households with unemployed members, while for families without them the index is 6.9. To some extent, all the figures could be explained by the index structure that includes unemployment as one of the components.

Speaking about the poverty profiles, we should also take into account that poverty risks can be caused not only by the specific traits of people or households but also by their locality. Russia has a large territory that covers 8 federal districts with different regions inside. There are large differences among them in terms of standards of living, income per capita, consumption, etc.¹⁰ The highest MPI afflicts Siberian and North-Caucasus federal districts. When the smaller units are considered, the regions that belong to these federal districts appear to be among those with the highest index. Such regions are: the Karachai-Cherkes Republic, Kabardino-Balkarian Republic, and the Republic of Ingushetia that belong to the North-Caucasus federal district, and the Tuva Republic and Altai Republic which are parts of the Siberian federal district.

The minimal MPI characterizes Central and North-Western federal districts, while Moscow and St. Petersburg, being the largest cities in Russia, lead with the lowest poverty indicators. The Moscow region and the Tatarstan Republic follow them with a slight lag.

The poverty level also depends on the type of settlement. Rural citizens more often fall into poverty: the MPI for them is 11.7, while for urban areas it equals 5.8. The tendency for poverty to decrease with increasing settlement size should

¹⁰ For more details see, for example, Zubarevich and Safronov (2019).

also be mentioned. This can be seen most clearly in cities: the MPI for cities with fewer than 50,000 citizens is 8.0, while in big cities with millions of residents, the MPI is at 4.1.

MPI provides not only the ability to identify the groups of the poor population but also to compare these groups with each other to find out who suffers from the largest number of deprivations simultaneously. These are unskilled workers at individual level and families with unemployed members at household level.

Summarizing the results of the MPI analysis, we should admit that the study confirms conclusions based on other approaches: people living in rural areas, having a low level of education, and weak labor market positions are more likely to become poor. The risks of poverty are also higher for families with children and with unemployed individuals.

But the MPI also enables highlighting vulnerable groups that are out of the scope of the social policy while the monetary poverty lines are used. These are people who face difficulties accessing substantial goods, although they are not formally classified as poor. Families with disabled people and retirees are among them.

6. Results and discussion

For a long time, the assessment of poverty was based on monetary indicators, namely the income and expenditures of households. But the monetary approach cannot demonstrate all the dimensions of poverty in the modern world. Besides, this methodology can sometimes be incorrect due to the limitations of sociological and statistical data, the necessity of incorporating inflation (in case of dynamic studies) and the purchasing power parity into calculations (in instances of cross-country, and sometimes cross-regional, comparison). From this point of view, the Multidimensional poverty index seems to be a better tool to provide a detailed and full description of the poor.

Alternative methods for gauging non-monetary poverty also exist (deprivation index, AROPE), however, they do not provide the ability to correct the list of deprivations included in the index and to present the relative importance of the problems included in it. This reasoning became crucial for the MPI choice.

The MPI based on Statistical Survey of Income and Participation in Social Programs and setting the threshold to get the per cent of the poor similar to the relative income poverty level results in the poverty headcount ratio at 24.8% of the Russian population. The poverty headcount ratio based on MPI is higher than the poverty level based on monetary indicators calculated on the same database (13.0%). The overwhelming majority of those considered to be poor were classified as poor by MPI also. The estimations are consistent with the assessment performed by other authors: the calculation on the Comprehensive Monitoring of Living Conditions of the Population treat 22.8% of the population as poor (Kapelyuk and Ryabushkin, 2019). The MPI index can never be a substitution but rather a useful addition to poverty indicators. It shows that groups with a high risk of poverty include: low-educated and low-skilled workers and older people. MPI is also higher for families living in rural areas, larger households, and households with 3 or more children. These tendencies are also fixed in the case of monetary approaches (Ovcharova, 2014).

Nevertheless, the index also widens the scope of poverty analysis adding to the poor retired and disabled people who relatively rarely figure among the poorest in accordance with the absolute monetary approach. This thesis validates the findings that were described in the studies based on non-monetary indicators (Tikhonova, 2014) and still classifies families with several children as poor (contrary to the results of: Institute for Social Policy, 2017).

The comparison of the poor identified in accordance with the MPI and absolute monetary approach criteria also seems to be very important. In contrast with official statistics, the MPI treats twice as many people as poor. The structure of the MPI for those who are poor by the MPI criteria only and by both the MPI and the absolute monetary approach criteria almost doesn't differ.

The core MPI advantage is the ability of index decomposition by the domains. The data shows that the more domains are set as arbiters of poverty, the higher is the impact of severe deprivations (like food and clothing purchase). If the poverty line is set at a lower level, the impact of the domains connected with leisure, travelling, and large purchases increases.

MPI could be especially important when working on social support measures. First, it helps identify vulnerable groups that are ignored by the absolute poverty approach. Second, it makes possible to highlight the sharpest problems of the poor.

6. Conclusions

The MPI index presented in the study is an example of a wide range of multidimensional poverty indices, which are used to identify the poor in different countries (mainly the developing ones). The deprivations included into the index in such countries are not relevant for Russia, but the idea of combining monetary and non-monetary estimations in order to analyze poverty seems to be forward-looking. The study demonstrated that using such a methodology widens the list of vulnerable groups of the population, adding retired and disabled people. The credibility of the results is proved by previous poverty studies based on the analysis of deprivations, which also highlight that older and disabled people are not formally poor; however, they suffer from different non-monetary deprivations.

The MPI approach can also influence decisions concerning social policy in Russia. Nowadays, the idea of combining the monetary (i.e., low income) and non-monetary (connected primarily to property and employment status) criteria to identify the beneficiaries of social policy measures is widely discussed and even implemented in some cases (primarily in the case of new social support measures like social benefits for children aged 3–7 years old). If this idea is developed further, the MPI index will be useful for both poverty evaluation and means testing.

The core limitation of the study is the list of poverty indicators that is now defined by the questionnaire of Statistical Survey of Income and Participation in Social Programs. The next step to develop the MPI for Russia is to construct the index that will be comparable with the indices implemented in developed countries and can be used for the purposes of social policy. However, that will be possible only if the necessary data is collected.

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Appendix A

Table A1
The list of questions included in MPI calculation

No	Questionnaire wording	Variable in the database	The values classified as an indicator of poverty	Indicator name
<i>HH data</i>				
1	Section 7, question 3 Taking into account the income of all household members, is your household able to “make ends meet,” that is, to pay all the necessary daily payments?	H07_03	1—Hardly	Cannot make ends meet
2	Section 7, question 5 Does your household have a TV in working order? If not, are you able to purchase it if you want?	H07_05_01_02	4—We wanted to but cannot afford it due to lack of money	Cannot afford to purchase the TV
3	Section 7, question 5 Does your household have a phone (including a mobile one) in working order? If not, are you able to purchase it if you want?	H07_05_02_02	4—We wanted to but cannot afford it due to lack of money	Cannot afford to purchase a phone
4	Section 7, question 5 Does your household have a PC in working order? If not, are you able to purchase it if you want?	H07_05_03_02	4—We wanted to but cannot afford it due to lack of money	Cannot afford to purchase a PC
5	Section 7, question 5 Does your household have a refrigerator in working order? If not, are you able to purchase it if you want?	H07_05_04_02	4—We wanted to but cannot afford it due to lack of money	Cannot afford to purchase a refrigerator
6	Section 7, question 5 Does your household have a washing machine in working order? If not, are you able to purchase it if you want?	H07_05_05_02	4—We wanted to but cannot afford it due to lack of money	Cannot afford to purchase a washing machine
7	Section 7, question 5 Does your household have a car in working order? If not, are you able to purchase it if you want?	H07_05_06_02	4—We wanted to but cannot afford it due to lack of money	Cannot afford to purchase a car

(continued on next page)

Table A1 (continued)

No	Questionnaire wording	Variable in the database	The values classified as an indicator of poverty	Indicator name
8	Section 7, question 6 Did your household have the arrears in the payment for communal services in the previous year?	H07_06_02	1 — It was once or 2 — Two or more times	Have arrears in the payment for communal services
9	Section 7, question 6 Did your household have the arrears in the payment for rent or mortgage payment for the main accommodation because of the lack of money in the previous year?	H07_06_01	1 — It was once or 2 — Two or more times	Have arrears in the payment for rent payment or mortgage payment
10	Section 7, question 7 Taking into account the income of all household members, is your household able to eat meat, chicken, or fish meals at least two times a week (or vegetarian alternatives)?	H07_07_01	2 — No	Cannot eat meat, chicken, or fish meals at least two times a week (or vegetarian alternatives)
11	Section 7, question 7 Taking into account the income of all household members, is your household able to purchase the clothes for a family member when it becomes necessary?	H07_07_02	2 — No	Cannot replace clothes for a family member when it becomes necessary
12	Section 7, question 7 Taking into account the income of all household members, is your household able to purchase two pairs of suitable, seasonal footwear for each family member?	H07_07_03	2 — No	Cannot purchase two pairs of suitable, seasonal footwear for each family member
13	Section 7, question 7 Taking into account the income of all household members, is your household able to replace the old furniture?	H07_07_04	2 — No	Cannot replace the furniture that is broken or in disrepair
14	Section 7, question 7 Taking into account the income of all household members, is your household able to invite guests for the family parties?	H07_07_05	2 — No	Cannot invite guests for family parties

(continued on next page)

Table A1 (continued)

No	Questionnaire wording	Variable in the database	The values classified as an indicator of poverty	Indicator name
15	Section 7, question 7 Taking into account the income of all household members, is your household able to spend one week per each year on vacation away from home?	H07_07_06	2—No	Cannot spend one week per year on vacation away from home
<i>Individual data</i>				
16	Section 1, question 10 What level of education do you have?	I01_10	8—Basic comprehensive (lower secondary) or 9—No basic comprehensive (age: for women—23–54 years old, for men—23–59 years old)	Low education level
17	Job seekers (unemployed) [calculated variable provided with data]	R_10_1_5	1—Job seekers (unemployed)	Unemployment
18	By occupational groups of respondents [calculated variable provided with data]	R_8_1	8—Unskilled workers	Low-skilled job
19	Presence of disabled people of all ages [calculated variable provided with data]	inv	1—Disabled	Health limitations: disability
20	Poor by absolute monetary measurement [calculated variable provided with data]	MALOIM	1—Poor	Poor (absolute criteria)