

UNITED NATIONS
ECONOMIC COMMISSION FOR EUROPE
CONFERENCE OF EUROPEAN STATISTICIANS

Seminar on poverty measurement
12-13 July 2016, Geneva, Switzerland

Item 5: Comparability issues in measuring multidimensional poverty

Measuring Multidimensional Poverty - Evidence from Moldova

Prepared by the National Bureau of Statistics (Republic of Moldova) ¹

Abstract

[T]he job of a ‘measure’ or an ‘index’ is to distill what is particularly relevant for our purpose, and then to focus specifically on that. ... The central issues in devising an index relate to systematic assessment of importance. Measurement has to be integrated with evaluation. This is not an easy task. –Amartya Sen (1989)

According to Oxford Poverty & Human Development Initiative (OPHI) (2015), measuring poverty only from the monetary perspective, we fail to draw a “broader picture of what life is really like for the poor.” Multidimensional poverty includes the many deprivations people can experience in their lifetime, such as lack of education and/or employment, poor health and/or nutrition, inadequate housing etc. One of the tools used to calculate the Multidimensional Poverty Index (MPI) by EU-SILC countries is AROPE (at risk of poverty or social exclusion), also called EU-2020. This index includes indicators such as income, work intensity and material deprivation (MD).

Starting with 1998 the National Bureau of Statistics of Moldova describes poverty through the lenses of monetary indicators. Even though in the 2006 the methodology of calculating the absolute (monetary) poverty indicators was revised and modified, no other poverty indicators have been calculated (i.e. non-monetary indicators, material deprivation etc.). Unavailability of the questions that measure the financial capacity of the household to afford the selected items was one of the main reasons of not being able to measure the material deprivation, and multidimensional poverty as well.

A new set of questions, which measure the financial capacity of the household to afford some goods and services, were included in the Household Budget Survey starting with 2014. This paper uses the data from 2014 to pilot the multidimensional poverty in the Republic of Moldova based on the EU methodology. The main goal is not only to upgrade the poverty indicators to the international standards, but also to provide a richer picture of poverty at the country level, which will help identifying not only monetary-poor people, but also poor people from other non-monetary dimensions.

Keywords: material deprivation, multidimensional poverty

¹Ala Negruta, Veronica Nica

1. Introduction

There are several international tools to measure multidimensional poverty. Eurostat measures the multidimensional poverty using the EU-2020 indicator, which represents the at-risk-of-poverty or social exclusion (AROPE) that consists of three sub-indicators – income, work and material deprivation. UNDP uses a different index built on 3 main dimensions, wealth, education and standard of living, which break down by ten indicators. Other tools are “Bristol”, UNICEF’s MODA, and IFAD’s MPAT.

In order to pilot the multidimensional poverty, National Bureau of Statistics uses the AROPE indicators. The first dimension of this index is income and is measured with the at-risk-of-poverty indicator (AROP). The second dimension of AROPE is living in a household with very low work intensity. Material deprivation is the third dimension and this concept is based on the access and affordability of a selection of goods and services that are considered to be necessary or desirable for population to have an “acceptable” standard of living in the country where they live.

This paper is structured in five main sections. Section “Data” provides a brief description of the data used; the “Methods” section presents the methodology underlying the analysis of social exclusion and material deprivation; in the section “Risk of Poverty and Social Exclusion Profile” are presented the three indicators based on which is calculated the multidimensional poverty, and the “Conclusion” provides some conclusion remarks and recommendations.

2. Data

The main data source for the calculation of multidimensional poverty in the Republic of Moldova is the Household Budget Survey (HBS) conducted annually by the National Bureau of Statistics (NBS). The analysis is based on the 2014 data which included 11 741 individuals from 4 885 households.

As EU-SILC hasn’t been conducted yet in the Republic of Moldova, in order to pilot AROPE indicators in 2014, household roster of HBS has been changed by adding additional questions to the Chapter “Appreciation of the standard of living”. The questions added measure the existence of financial difficulties for the household to buy certain items or to face some expenditure, which are the basic elements of the material deprivation indicator.

3. Methods

• AROP – at risk of poverty

Proportion of the population at risk of poverty represents the share of persons with an equivalised disposable income below the at risk of poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers) (Eurostat, 2014a).

• Low work intensity

Based on the Eurostat (2015) definition, people living in households with very low work intensity are defined as people of all ages (0-59) living in households where the members of working age worked less than 20.0% of their total potential during the previous 12 months. It should be mentioned that the households composed only of children (0-17), of students aged less than 25 and/or people aged 60 or more are completely excluded from the indicator calculation.

The unavailability of the information on the number of months worked during the income reference year in the HBS, made us to include in the computations the number of hours worked in the last week. Therefore for Moldova’s case, *people living in households with very low work intensity* are defined as people of all ages (0-59) living in households where the members of working age worked less than 20.0% of their total potential during the previous week (40 hours/week).

• Material Deprivation

The current EU indicator is built on a set of 9 items recording whether people can afford the following: (1) pay their rent or utility bills; (2) keep their house adequately warm; (3) face unexpected expenses; (4) eat meat, fish, or a protein equivalent every second day; (5) a week of holiday away from home once a

year; (6) a car; (7) a washing machine; (8) a colour TV; and (9) a telephone. The information collected in HBS on these nine items differs slightly from the EU.

Table 1. The items that make the object of the material deprivation in the EU and Moldova

European Union	Moldova	Answer options
<i>Your household could afford financially the follow:</i>	<i>In the last 12 months, your household had arrears conditioned by financial difficulties:</i>	
Avoiding arrears (in mortgage or rent, utility bills, or hire purchase instalments)	1. For paying utility bills 2. For bank credit reimbursement	1. Yes, once 2. Yes, several times 3. No
<i>Your household could afford financially the follow:</i>		
Keeping the home adequately warm	To keep the house adequately warm	1. Yes 2. No 3. I do not know
Face unexpected expenses	Face unexpected expenses of 5000 lei	1. Yes 2. No 3. I do not know
Eat meat, fish or a protein equivalent every second day	To include in the diet meat or fish every second day (if desired)	1. Yes 2. No 3. I do not know
A week of holiday away from home once a year	A week of holiday away from home once a year	1. Yes 2. No 3. I do not know
<i>Your household could afford financially the follow:</i>	<i>Quantity at the moment of the survey:</i>	
A personal car	* Car, personal minivan	Number of items ____
A washing machine	* Automatic Washing Machine * Mechanical Washing machine	Number of items ____
A colour TV	* TV	Number of items ____
A telephone	** Telephone Mobile phone	Number of items ____

Note: * The information is taken from the Chapter 7 of the Main questionnaire “Durable goods in the household” and the lack of these items does not represent that the household has financial difficulties to afford them.

** The information is taken from the Chapter 1 of the Main questionnaire “Household Dwelling”

Source: Household Budget Survey (NBS, 2014)

The difference between Moldovan and EU items is in the way the questions are formulated. For example the possible answers for the items (2) – (5) were “Yes”, “No” and “I do not know”. For the purpose of this exercise, we considered that the persons who answered “No” to the questions, have financial difficulties in affording the items, and the ones who answered “Yes” and “I do not know” do not have financial difficulties. Another difference is for the items (6) – (9), where the information available is whether or not the household possess at least one of the items. If the household does not have at least one of these items, it was assumed that the household financially cannot afford it.

The analysis distinguishes between households that cannot afford one of the items (those materially deprived), and the households that do not possess that item because of another reason, other than financial. The main indicators of the material deprivation are standard material deprivation, and the severe material deprivation.

The standard material deprivation rate represents the share of people who cannot afford to pay for at least three of the nine items.

The severe material deprivation rate is defined as the enforced inability to pay for at least four of the above-mentioned items.

- **Absolute (Monetary) Poor, based on the consumption expenditure**

Moldova measures welfare based on the consumption aggregate. Monetary poverty is not equal to the bottom consumption quintile, but is calculated based on a methodology which takes into account the 2-4 consumption deciles. Due to this fact that other countries are using the bottom consumption quintile, for comparability reason, part of this exercise is to present the distribution of the at-risk-of-poverty group and of other indicators of social exclusion by both consumption quintile and by monetary poor group.

4. Risk of Poverty and Social Exclusion Profile

As discussed above, in order to draw the risk of poverty and social exclusion profile we need to combine three dimensions of the concept. These dimensions are the risk of poverty, low work intensity, and the material deprivation. This section presents a broad description of each indicator and aggregated as in the AROPE measure.

At risk of poverty indicator (AROP)

According to 2014 data from HBS, the at-risk-of-poverty population is comprised approximatively of 607.2 thousand people, or 18.2% of the overall population of Moldova (Table 2).

In Moldova, the at-risk-of-poverty population is concentrated in rural areas, which account for almost $\frac{3}{4}$ of the total population at risk of poverty, compared to total share of the rural population (56.8%) (Annexes, Table A2). The higher risk of poverty in rural areas is consistent with patterns found in Southern European states (Portugal, Spain, Greece, Italy), Bosnia and Herzegovina etc. (Cojocaru & Laderchi, 2013).

Table 2. The share of population at risk of poverty (after social transfers), 2014

	Total	Population at risk of poverty	
		No	Yes
Total	100.0	81.8	18.2
<i>Area of residence</i>			
Urban area	100.0	89.7	10.3
Rural area	100.0	75.7	24.3
<i>Sex</i>			
Men	100.0	84.0	16.0
Women	100.0	79.9	20.1
<i>Area of residence and Sex of HH Head</i>			
Urban area	100.0	86.3	13.8
Men	100.0	93.2	6.8
Women	100.0	78.1	21.9
Rural area	100.0	71.5	28.5
Men	100.0	77.5	22.5
Women	100.0	61.4	38.6

Source: Authors' estimates based on data from HBS (BNS, 2014)

Disaggregating by area of residence and by the sex of the household head, even though in rural area the incidence is higher for both men and women compared to urban area, the difference between women and

men is almost equal in both areas of residence. Women are with 4 percentage points more represented in the at-risk-of-poverty group compared to men (Table 2).

In terms of the age-group, the lowest poverty rate is recorded in the 18-24, and 25-34 age groups (12.8%), and the highest rate amongst the elderly population (65+) with 24.9% (Table 3).

Table 3. Age profile of the at risk of poverty population (%)

Age groups	At risk of poverty (AROP)	Overall population	Incidence of poverty risk
0-17	19.5	20.3	17.5
18-24	6.1	8.7	12.8
25-34	8.5	12.2	12.8
35-44	10.0	10.8	16.9
45-54	13.6	15.0	16.6
55-64	20.6	17.2	21.8
65+	21.7	15.9	24.9
Total	100.0	100.0	18.2

Source: Data calculated based on Household Budget Survey (NBS, 2014)

Those residing in small households (one, two household members) are at a much higher risk of poverty in both urban (37.4%) and rural areas (26.4%). In urban area at a smaller risk of poverty are the four member households, while in rural area the three member households (Annexes, Table A9). Another factor of influence for poverty risk is education. While ¼ of the population reside in households where the head of the household has lower secondary education or less, in the at-risk-of-poverty group, this share is 43.2% (Annexes, Table A10).

Monetary poverty and At-risk-of-poverty: 71.0% of the at-risk-of-poverty population is not considered monetary poor (Table 4).

Table 4. At risk of poverty or exclusion indicator and its components, by monetary poverty and area of residence, 2014

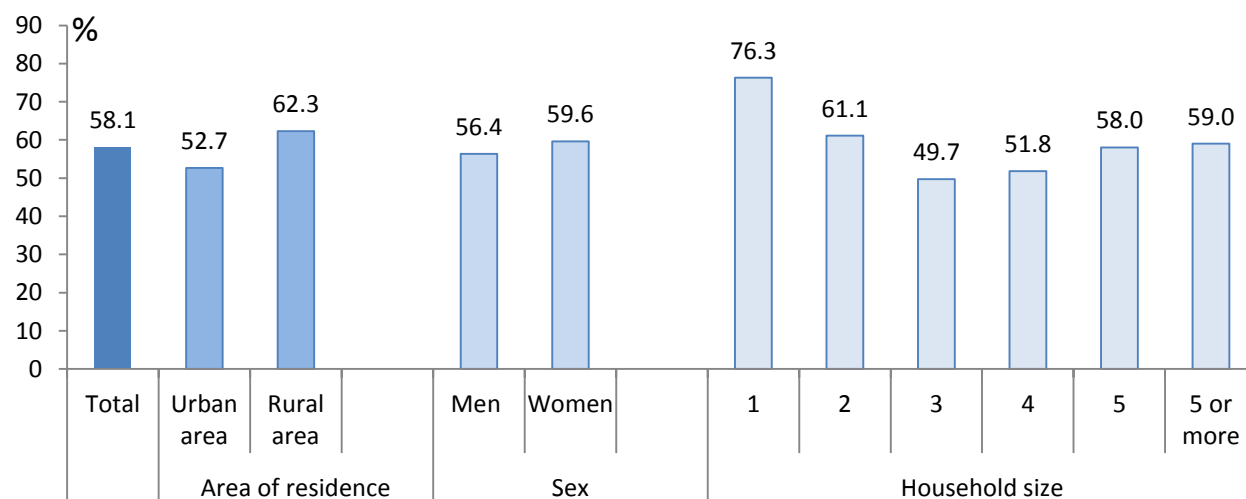
Monetary poverty	At risk of poverty	Material deprivation	Low work intensity	Union (poverty, MD or LWI)	Intersection (poverty risk, MD and LWI)
Total	100.0	100.0	100.0	100.0	100.0
Monetary poor	29.0	17.5	8.6	16.9	29.3
Monetary non-poor	71.0	82.5	91.4	83.1	70.7
Share of monetary poor in:	46.2	89.1	2.6	92.6	1.7
Urban area	100.0	100.0	100.0	100.0	100.0
Monetary poor	18.0	8.4	4.6	8.1	17.9
Monetary non-poor	82.0	91.6	95.4	91.9	82.1
Share of monetary poor in:	37.3	89.2	5.1	92.2	3.1
Rural area	100.0	100.0	100.0	100.0	100.0
Monetary poor	32.5	23.4	17.8	22.6	42.7
Monetary non-poor	67.5	76.6	82.2	77.4	57.3
Share of monetary poor in:	48.2	89.0	2.0	92.6	1.4

Source: Data calculated based on Household Budget Survey (NBS, 2014)

Material deprivation

Severe material deprivation affects more than half of the Moldova's households. In 2014, 58.1% of total population did not possess enough financial resources to afford at least four out of nine items that make the object of material deprivation. In rural area, 62.3% of population was victims of severe material deprivation, whilst in the urban area 52.7% of population was severely materially deprived (Figure 1).

Figure 1. Share of materially deprived people by area of residence, sex and household size, 2014

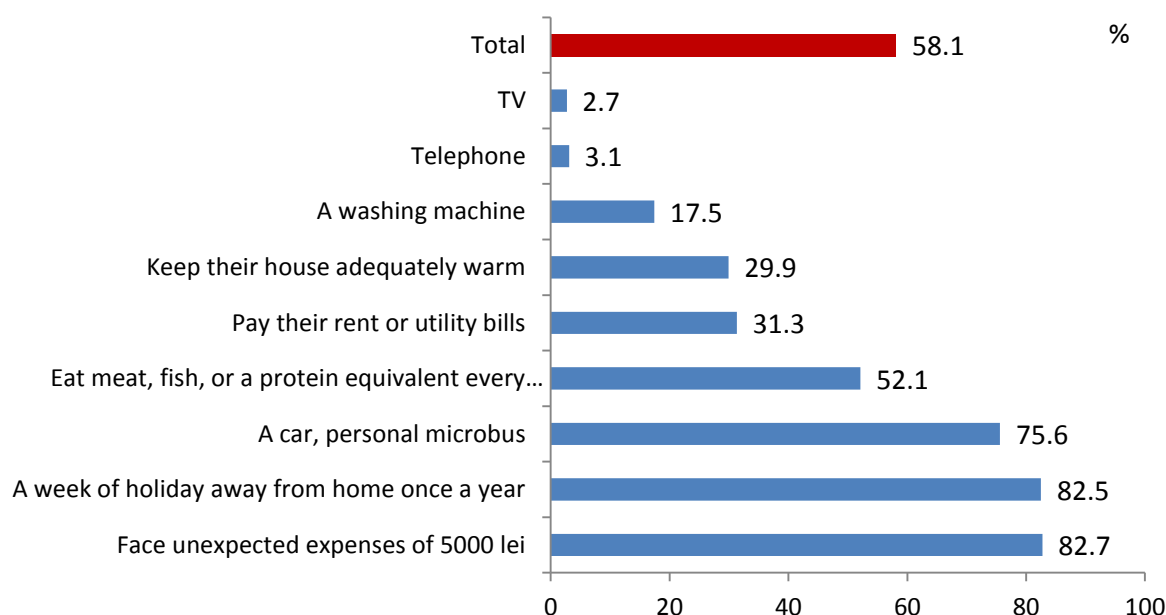


Source: Authors' estimates based on the data from HBS (BNS, 2014).

In order to find an explanation for the high rate of material deprivation it is worth to analyze the items/variables based on which material deprivation is calculated. Variables capturing material deprivation when individually taken can be highly controversial, and indeed, as it was highlighted in other studies, they are not intended to be in themselves alone poverty measure. In Figure 1 there are presented the nine items which construct the material deprivation. The highest rates of deprivation are among the people who cannot afford 'eat meat, fish, or a protein equivalent every second day' (52.1%), to own 'a car' (75.6%), 'a week of holiday away from home once a year' (82.5%), and 'face unexpected expenses of 5000 lei' (82.7%).

There is not a big difference between the share of population materially deprived by area of residence. In rural area there is a higher rate of deprivation of 'a washing machine' (24.4% compared to 8.3% in urban area), of affording 'a week of holiday away from home once a year' (90.9% compared to 71.4%) (Annexes, Table A4).

Figure 2. Material deprivation rates, for total population and by items, 2014



Source: Authors' estimates based on the data from HBS (BNS, 2014).

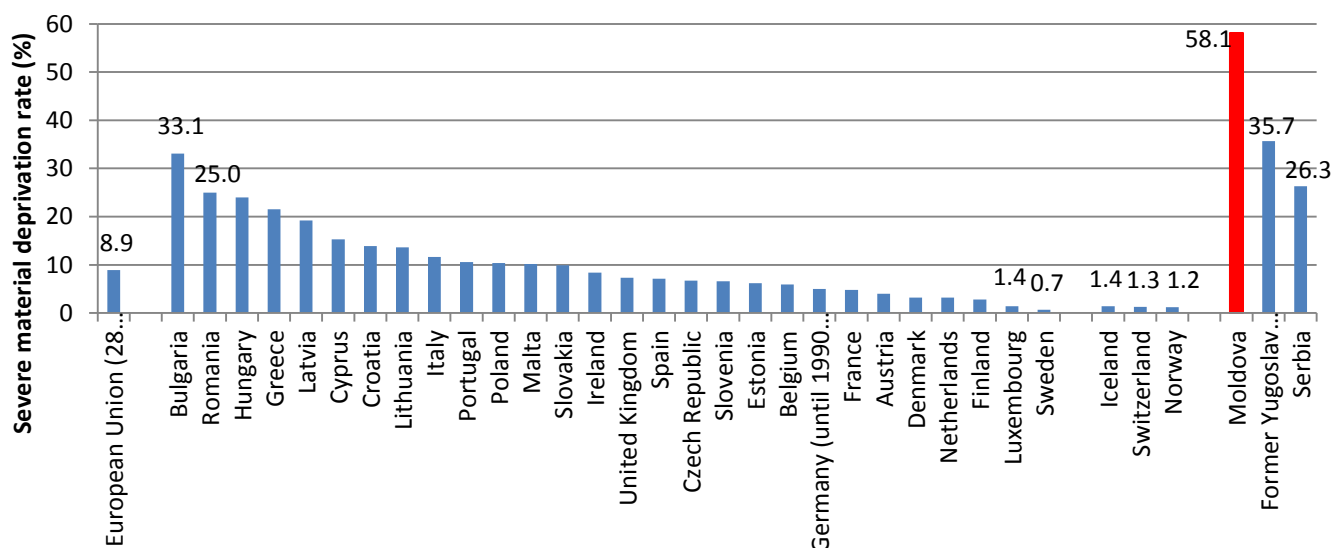
The higher material deprivation rate associated with the elderly population is confirmed for Moldova's households as well. The share of materially deprived population is higher for those that reside in households where the head of the household is in the 50+ age group (Annexes, Table A6). Starting with 50-59 age group, more than half of the people are victims of material deprivation, compared to the individuals younger than 50 years old, where the share is less than 50%.

Based on the data from Table A7 (Annexes) we can see how important the level of education of the HH head is in order to have a lower rate of material deprivation. The material deprivation is much higher for the individuals whose HH head has completed lower-secondary or lower (72.1% - 89.5%), compared to the ones who completed tertiary education (34.6%).

The material deprivation rate by socio-economic status has the same tendency as the monetary poverty rate (absolute poverty rate): entrepreneurs have the lowest rate of material deprivation (2.9%), while the highest rate is recorded across pensioners (75.1%) and employees in the agricultural sector (74.5%) (Annexes, Table A8).

This pattern is different from the one of the EU-28, where the highest prevalence is in the at-risk-of-poverty group, followed by the severe material deprivation (Eurostat, 2015). The Moldovan pattern is similar to Bulgaria and Romania, where material deprivation dominates across all three dimensions (Cojocaru & Laderchi, 2013, p. 87) (Figure 4).

Figure 3. Severe material deprivation rate in Moldova and other EU countries, 2014



Source: Authors' estimates based on the data from HBS (BNS, 2014) and (Eurostat, 2015).

Monetary poverty and Material deprivation: 82.5% of the materially deprived are not considered monetary poor (Table 4).

Low work intensity

The third component of EU's at-risk-of-poverty or social exclusion (AROPE) indicator is living in a household with very low work intensity. According to LFS the employment rate in Moldova is 40.3%, and the inactivity rate is one of the highest in the region (58.8%). With regard to low work intensity, in 2014 only 3.4% of the population was residing in households with very low work intensity (Table 6). Taking into account that this is not comparable with the EU-27, it is important to mention that the Moldova's rate is much lower compared to the EU-27, where 11.2% of the population lives in low work intensity households (Eurostat, 2014).

In urban area the incidence rate of low work intensity households is higher than in rural area (5.5% compared to 1.9%). This can be explained by the fact that in rural area people are involved in agricultural activities, thus reporting that they worked during the previous week compared to urban area. As it was expected, the low work intensity has a seasonal factor. During the 1st and 4th quarters (cold weather) the rate is higher compared to the 2nd and 3rd quarters. When analyzed by area of residence and quarters, the same trend is found for people residing in rural area (Table 5).

Table 5. The share of people living in households with very low work intensity, by area of residence and trimesters, 2014

	People living in households with very low work intensity			
	No	Yes	Urban	Rural
Total	100.0	100.0	100.0	100.0
I trimester	24.9	34.3	29.9	44.3
II trimester	24.9	19.7	23.2	11.6
III trimester	25.2	19.4	23.6	9.8
IV trimester	25.0	26.7	23.3	34.3
Area of residence				
Urban area	42.3	69.3		
Rural area	57.7	30.7		

Source: Authors' estimates based on the data from HBS (BNS, 2014).

When we look at the primary economic activity of the population aged 15 – 59 years, the highest share of the people living in households with very low work intensity is in the 'Agriculture, forestry and fishing' group. More than 2/3 of the population living in LWI households declared working in agriculture, while only 4.4% declared working in 'Wholesale and retail trade' (Annexes, Table A5).

Monetary poverty and Low work intensity: 91.4% of the people living in low work intensity households are not considered monetary poor (Table 4).

5. The Relationship between Poverty Risk, Material Deprivation and Low Work Intensity

The relations between risk of poverty, material deprivation and labour market exclusion are presented in the Table 6 and Figure 4. Overall, 2.1 million people or 62.5% of Moldovan population reside in households that are either at risk of poverty, excluded from the labour market or report at least three material deprivations. Only 0.7% of the population suffers from exclusion in all three dimensions. Among those at risk of poverty, 5.6% also come from low work intensity households, while in the latter group, 29.5% are also at risk of poverty. More than ¾ of the population in the risk-of-poverty group also report three or more material deprivations.

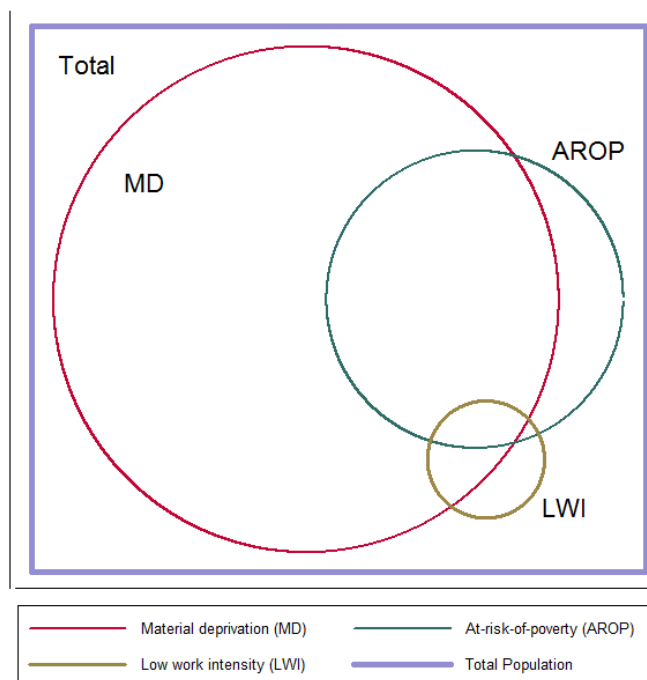
Table 6. How do various dimensions of social exclusion relate?

Category	Population	
	Individuals	Share (%)
1. Residing in low work intensity HH (LWI)	114 394	3.4
2. At risk of poverty (AROP)	607 225	18.2
3. At least 4 material deprivations (out of 9) (MD)	1 937 887	58.1
Intersection of (1) and (2)	33 736	1.0
Intersection of (1) and (3)	70 123	2.1
Intersection of (2) and (3)	495 304	14.9
Intersection of (1), (2) and (3)	22 707	0.7
Union of (1), (2) and (3)	2 083 050	62.5
Population not victim of the 1, 2 and 3	1 250 668	37.5
Monetary poor	380 961	11.4
Total population	3 333 718	100.0

Source: Authors' estimates based on the data from HBS (BNS, 2014).

The most important thing that stands out is that the incidence of the three material deprivations affects more than half of the population (58.1%).

Figure 4. Overlapping domains of poverty, material deprivation and low work intensity



Source: Authors' estimates based on the data from HBS (BNS, 2014).

Note: Size of the bubbles and their overall corresponds to the relative size of the three categories. In the Figure 4.1 from the Annexes there are presented the absolute values of each category.

The profiles of populations at the intersections of exclusion domains are presented in the Table A11 in the Annexes. Estimates reveal that low work intensity households with at least three deprivations are less likely to be rural (35.3% compared to 64.7% in urban area). They also have a good education profile and are more reliant on pensions and remittances as their main livelihood source.

Relative to the overall population, the population at the intersection of all three dimensions (risk of poverty, low work intensity and severe material deprivation) is concentrated almost equally in the urban and rural areas (54.3%, and 45.7%) with a greater prevalence of gymnasium and lyceum education. This group is also much more reliant on income from pensions, remittances and self-employed agricultural activity.

6. The Relation between the at Risk of Poverty and Exclusion Indicator and the Consumption based Poverty Measure

Table 7 presents the distribution of the at-risk-of-poverty group and of other indicators of social exclusion by consumption quintile, and by monetary poor group. It also includes the quintile distribution of the union (AROE indicator) and intersection measures of the three dimensions.

Of those in the at-risk-of-poverty group, 45.1% were also in the bottom consumption quintile. When we look at the share of bottom quintile in at-risk-of-poverty group we notice that around 59% of the population in the bottom consumption quintile in Moldova is not at risk of poverty by the EU definition.

The distribution of severely material deprived households across consumption quintile shows a higher prevalence across the first three consumption quintiles. These three consumption quintiles capture almost $\frac{3}{4}$ of the total households that have at least three material deprivations.

Table 7. At risk of poverty or exclusion indicator and its components, by consumption quintile

Consumption quintile	At risk of poverty	Material deprivation	Low work intensity	Union (poverty, MD or LWI)	Intersection (poverty risk, MD and LWI)
1	45.1	29.4	14.6	28.4	38.9
2	25.3	24.4	20.5	24.2	12.2
3	17.1	21.3	20.7	21.4	25.2
4	8.0	15.5	26.0	15.6	21.7
5	4.4	9.5	18.2	10.3	2.0
Total	100.0	100.0	100.0	100.0	100.0
Share of bottom quintile in:					
Monetary poor	41.1	85.4	2.5	88.7	1.3
Monetary non-poor	29.0	17.5	8.6	16.9	29.3
Total	71.0	82.5	91.4	83.1	70.7
Share of monetary poor in:	100.0	100.0	100.0	100.0	100.0
Share of monetary poor in:	46.2	89.1	2.6	92.6	1.7

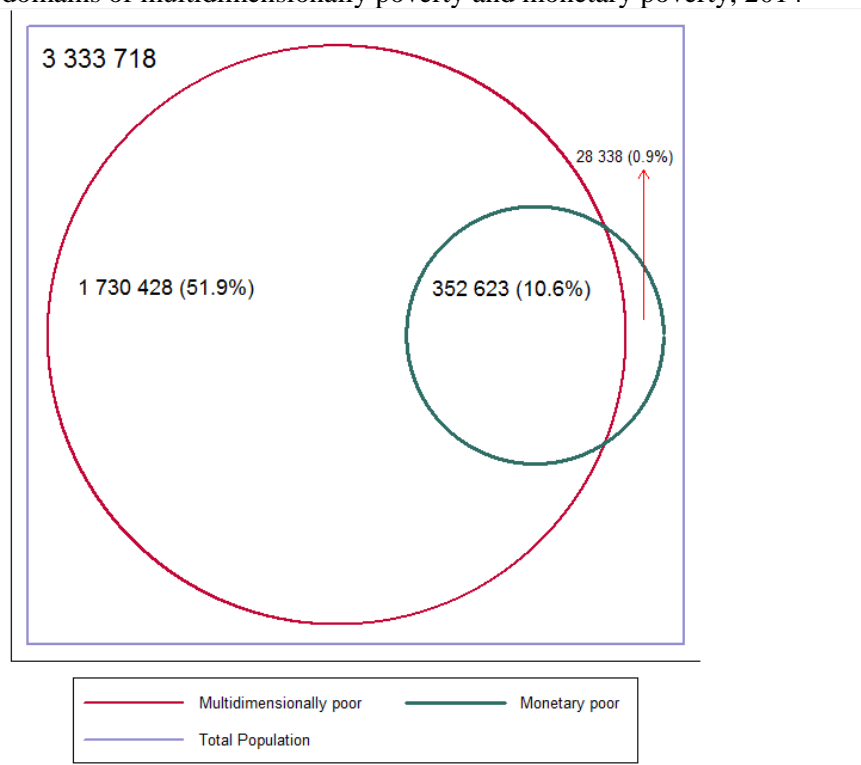
Source: Authors' estimates based on the data from HBS (BNS, 2014).

Note: Values in bold represent the AROPE indicator (the union of the first 3 columns)

More than two thirds of the population identified as poor by AROPE are outside of the bottom consumption quintile. Nevertheless, 88.7% of the population in the bottom consumption quintile is identified as being poor by AROPE. This finding demonstrates that the bottom quintile captures rather well the types of deprivation that can be captured by a consumption-based indicator of poverty.

Similar results are found when comparing the three poverty dimensions with the official monetary poverty rate. Analysing only monetary poverty, only 16.9% of the multidimensional poor population is identified, while the remained 83.1% is left aside (Table 7). A better visualization of these statistics is presented in the Figure 5 with the Venn diagram.

Figure 5. Overlapping domains of multidimensionally poverty and monetary poverty, 2014



Source: Authors' estimates based on the data from HBS (BNS, 2014).

Note: Size of the bubbles and their overall corresponds to the relative size of the three categories. The percentages presented are out of the total population.

The main conclusion of this section is that the multidimensional poverty is important. Using it as a complementary measure for monetary poverty becomes crucial in answering the question “Who are the poor?”

7. Conclusions and further work

The purpose of this paper was to present for the first time estimates of the indicators of social exclusion that all European Union Member States monitor in order to show their progress towards the EU2020 social inclusion targets. As part of this exercise we pilot the multidimensional poverty, and analyze not only all its dimensions individually, but also the relationship between poverty risk, material deprivation, and low work intensity.

In conclusion, we will enumerate the main findings of the paper:

1. The at-risk-of-poverty population is more concentrated in rural area.
2. The material deprivation rate is higher for pensioners and employees in the agricultural sector
3. The incidence rate of low work intensity households is higher in urban area.
4. The seasonal effects of the low work intensity rate are more accentuated in the rural area.
5. The incidence of the three material deprivations affects more than half of the population.
6. Multidimensional poverty covers 92.6% of the monetary poor population.

As further work, it is recommended to:

Long term perspective:

1. EU-SILC is one of the main objective of improvement of social statistics in the next 3 years it is envisaged to conduct a pilot in 2018-2019. , in this case we could collect data at the individual level; also we could calculate the material deprivation rate for children.
2. Apply Alkire-Foster methodology. In this way we will be able to do decomposition by indicators in order to see what is the contribution of every indicator to the overall MPI, not only in the total population, but also in the different regions (i.e. area of residence, zones).

Short term perspective:

3. Include more questions, which would measure the financial capacity to afford some of the items, which we assumed they are not available in the household due to lack of financial resources to buy them.
4. Ask household members on the number of months worked during the last 12 months in order to ensure comparability with the EU countries.
5. Conduct multivariate analysis in order to find potential predictors of the three dimensions of AROPE.

Poverty is a global challenge. It is present in all parts of the world and affects both poor and developed countries. The significance of this study is that shed light on what are other dimensions of the poverty, other than the material one, and what is the amplitude of each of them when constructing a poverty index. It also encourages new studies, and new work to be done to incorporate new indicators in the survey to draw a clearer picture on what poverty really looks like in all its dimensions.

8. Annexes

Table A1. Definitions and summary statistics of the material deprivation variables, 2014

Variables	Definitions	Descriptive statistics	
		Obs.	Share of total (%)
Items	<i>Your household faced financial difficulties to (1-Yes; 0-No):</i>		
	1. Face unexpected expenses of 5000 lei	11741	82.7
	2. A week of holiday away from home once a year	11741	82.5
	3. Pay their rent or utility bills	11741	31.3
	4. Eat meat, fish, or a protein equivalent every second day	11741	52.1
	5. Keep their house adequately warm	11741	29.9
	6. A washing machine	11741	17.4
	7. TV	11741	2.7
	8. Telephone	11741	3.1
	9. A car, personal microbus	11741	75.6
Standard material deprivation	1 – if the person cannot afford financially at least 3 out of 9 items described above; 0 – otherwise.	11741	78.0
Severe material deprivation	1 – if the person cannot afford financially at least 4 out of 9 items described above; 0 – otherwise.	11741	58.1

Source: Household Budget Survey (NBS, 2014)

Table A2. Distribution of people in the sample by area of residence, household size and sex of the household head, 2014

Variables	Definitions	Descriptive statistics	
		Obs.	Share of total (%)
Area of residence	1 – urban area	11 741	43.2
	0 – rural area	11 741	56.8
Household size			
1 member	1- Yes; 0 - no	11 741	11.61
2 members	2- Yes; 0 - no	11 741	29.00
3 members	3- Yes; 0 - no	11 741	20.69
4 members	4- Yes; 0 - no	11 741	21.92
5 members or more	5- Yes; 0 - no	11 741	16.78
Sex of the household head	1- men, 0 - women	11 741	65.91

Source: Household Budget Survey (NBS, 2014)

Table A3. The share of population at risk of poverty (after social transfers), 2014

	Population at risk of poverty	
	No	Yes
Total	100.0	100.0
<i>Area of residence</i>		
Urban area	47.5	24.4
Rural area	52.6	75.7
<i>Sex</i>		
Men	46.9	40.1
Women	53.1	59.9

Source: Authors' estimates based on data from HBS (BNS, 2014)

Table A4. The share of material deprivation items, by area of residence, 2014

<i>Cannot afford financially:</i>	Total	Area of residence	
		Urban area	Rural area
Face unexpected expenses of 5000 lei	82.7	81.0	84.0
A week of holiday away from home once a year	82.5	71.4	90.9
Pay their rent or utility bills	31.3	41.3	23.8
Eat meat, fish, or a protein equivalent every second day	52.1	44.9	57.6
Keep their house adequately warm	29.9	31.7	28.5
A washing machine	17.5	8.3	24.4
TV	2.7	1.7	3.5
Telephone	3.1	1.0	4.7
A car, personal microbus	75.6	75.6	75.6

Source: Authors' estimates based on data from HBS (BNS, 2014)

Table A5. The share of people living in households with very low work intensity, by primary economic activity, 2014

	People living in households with very low work intensity	
	No	Yes
Total	100.0	100.0
A. Agriculture, forestry and fishing	53.4	70.8
G. Wholesale and retail trade	10.0	4.4
Others	36.6	24.8

Source: Authors' estimates based on the data from HBS (BNS, 2014).

Note: Data available only for people aged 15-59 who completed the primary economic activity. The economic activities are structured based on CAEM REV.2, 2000.

Table A6. Share of victims/non-victims of material deprivation, by age groups of the HH head

Age groups of the HH head	Total	Materially deprived	
		No	Yes
Total	100.0	41.9	58.1
< 30 y.o.	100.0	53.4	46.6
30 - 39 y.o.	100.0	51.3	48.7
40 - 49 y.o.	100.0	50.2	49.8
50 - 59 y.o.	100.0	43.0	57.0
60 - 64 y.o.	100.0	34.3	65.7
65 + y.o.	100.0	24.3	75.7

Source: Authors' estimates based on the data from HBS (BNS, 2014).

Table A7. Share of victims/non-victims of material deprivation, by the level of education of the HH head, 2014

Level of education	Total	Materially deprived	
		No	Yes
Total	100.0	41.9	58.1
Pre-primary or no education	100.0	10.5	89.5
Primary education	100.0	12.7	87.3
Gymnasium	100.0	28.0	72.1
Secondary school	100.0	36.1	63.9
Secondary professional	100.0	43.3	56.7
Secondary specialized	100.0	46.3	53.7
Higher education	100.0	65.4	34.6

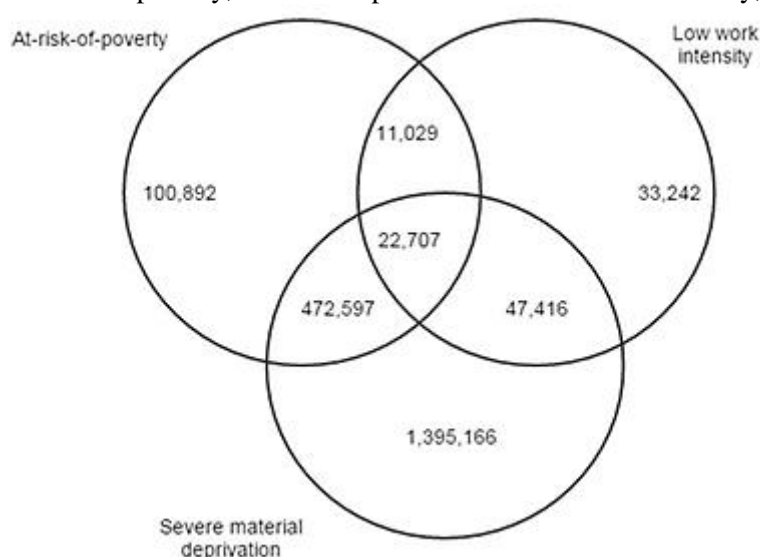
Source: Authors' estimates based on the data from HBS (BNS, 2014).

Table A8. Share of victims/non-victims of material deprivation by social status, 2014

	Total	Materially deprived	
		No	Yes
Farmers	100.0	37.8	62.2
Employees in agricultural sector	100.0	25.5	74.5
Employees in non-agricultural sector	100.0	53.5	46.5
Self-employers	100.0	97.1	2.9
Pensioners	100.0	24.9	75.1
Others	100.0	52.8	47.2

Source: Authors' estimates based on the data from HBS (BNS, 2014).

Figure 4.1. Overlapping domains of poverty, material deprivation and low work intensity, 2014



Source: Authors' estimates based on the data from HBS (BNS, 2014).

Note: Size of the bubbles and their overall does not correspond to the relative size of the three categories.

Table A9. The share of deprivations by household size and area of residence

	Population at risk of poverty		Low work intensity households		Severe material deprivation	
HH size	Urban	Rural	Urban	Rural	Urban	Rural
1	37.4	21.1	18.5	15.4	16.4	14.5
2	21.2	26.4	37.7	24.4	31.8	29.6
3	12.5	15.5	23.0	18.8	19.6	16.5
4	8.6	17.2	10.7	26.0	19.6	19.5
5 or more	20.3	19.8	10.1	15.4	12.5	19.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' estimates based on the data from HBS (BNS, 2014).

Table A10. Welfare distribution by education level of household head, 2014 (%)

	AROP	Overall population
Pre-primary or no education	1.6	0.7
Primary education	10.2	5.0
Gymnasium	31.4	19.8
Secondary school	19.2	17.2
Secondary professional	20.9	26.0
Secondary specialized	11.4	15.3
Higher education	5.4	16.1
Total	100.0	100.0

Source: Authors' estimates based on the data from HBS (BNS, 2014).

Table A11. Profiles of populations at the intersections of exclusion domains (% of total)

	At risk of poverty and 3+ deprivations	At risk of poverty and low work intensity HH	Low work intensity HH and 3+ deprivations	At risk of poverty and low work intensity HH and 3+ deprivations	Overall (total population)
<i>Area of residence</i>					
Urban	24.5	57.1	64.7	54.3	43.2
Rural	75.5	42.9	35.3	45.7	56.8
<i>Age groups</i>					
0-17	18.6	9.2	8.1	3.4	20.3
18-24	4.7	14.3	10.3	13.0	8.7
25-34	8.1	13.9	15.1	10.5	12.2
35-44	9.4	7.2	15.6	7.5	10.8
45-54	12.9	20.3	17.0	20.6	15.0
55-64	21.9	33.0	27.1	41.9	17.2
65+	24.4	2.1	6.9	3.2	15.9
<i>Sex</i>					
Male	38.6	39.3	42.0	37.8	45.7
Female	61.4	60.7	58.0	62.2	54.3
<i>Education</i>					
Pre-primary or no education	12.6	3.4	10.8	1.7	13.1
Primary education	12.5	7.1	4.8	4.8	8.7
Gymnasium	31.8	31.3	25.2	34.4	19.8
Secondary school	17.6	20.0	24.1	26.4	16.3
Secondary professional	14.6	12.4	16.0	10.5	17.0
Secondary specialized	8.1	14.3	11.2	14.4	12.1
Higher education	2.9	11.6	8.0	7.8	12.9
<i>Main income source in HH</i>					
Agricultural own account activity	16.49	14.3	7.2	13.7	8.2
Remunerated work/job in state agricultural sector	0.04	0.0	0.0	0.0	0.2
Remunerated work/job in private agricultural sector	4.76	0.8	0.6	1.2	3.2
Entrepreneurial activity	0	0.0	0.0	0.0	0.2
Non-agricultural own account activity	1.12	0.0	0.8	0.0	3.2
Remunerated work in non- agricultural state sector	3.2	0.5	1.0	0.0	9.7
Remunerated work in non- agricultural private sector	3.77	0.0	1.2	0.0	14.6
Freelance (?) professional activity	-	-	-	-	-
Unemployment allowance	0.03	0.0	0.0	0.0	0.1
Scholarships/stipends	0.31	0.0	0.6	0.0	0.8
Pension	43.34	35.0	33.4	45.0	26.0
Social payments	4.49	5.3	12.7	7.3	3.2
Maintenance	18.24	19.9	13.7	14.6	22.2
Remittances	3.46	19.0	26.5	14.0	7.8
Other income sources	0.75	5.2	2.5	4.2	0.7
Total	100.0	100.0	100.0	100.0	100.0

Source: Authors' estimates based on data from HBS (BNS, 2014)

Table A12. At risk of poverty or exclusion indicator (AROPE), consumption poverty and monetary poor profiles (%)

	AROPE	Bottom quintile	Monetary poor
<i>Area of residence</i>			
Urban	39.0	18.5	18.7
Rural	61.0	81.5	81.3
<i>Age groups</i>			
0-17	19.5	22.8	23.1
18-24	7.7	7.0	7.6
25-34	10.5	9.7	9.9
35-44	10.2	10.8	11.0
45-54	14.1	13.7	14.0
55-64	18.2	16.3	15.3
65+	19.9	19.7	19.3
<i>Sex</i>			
Male	44.4	47.0	47.4
Female	55.6	53.0	52.6
<i>Education</i>			
Pre-primary or no education	13.0	14.9	15.6
Primary education	9.7	14.0	15.1
Gymnasium	23.8	29.7	30.1
Secondary school	17.3	15.8	16.3
Secondary professional	16.8	16.9	16.3
Secondary specialized	10.7	5.8	4.9
Higher education	8.8	2.9	1.7
<i>Main income source in HH</i>			
Agricultural own account activity	9.7	14.2	15.4
Remunerated work/job in state agricultural sector	0.2	0.0	0.0
Remunerated work/job in private agricultural sector	4.0	6.8	7.2
Entrepreneurial activity	0.0	0.0	0.0
Non-agricultural own account activity	2.6	2.2	1.6
Remunerated work in non-agricultural state sector	7.4	5.7	6.0
Remunerated work in non-agricultural private sector	11.1	7.2	7.2
Freelance (?) professional activity	-	-	-
Unemployment allowance	0.1	0.0	0.0
Scholarships/stipends	0.7	0.3	0.5
Pension	32.2	31.9	29.5
Social payments	3.8	4.6	5.3
Maintenance	20.7	22.1	22.5
Remittances	7.0	4.6	4.3
Other income sources	0.8	0.4	0.6
Total	100.0	100.0	100.0

Source: Authors' estimates based on data from HBS (BNS, 2014)

9. References

- Cojocaru, A., & Laderchi, C. R. (2013). Social exclusion in Bosnia and Herzegovina *Poverty and Exclusion in the Western Balkans* (pp. 71-98): Springer.
- Eurostat. (2014a). At-risk-of-poverty rate. *Glossary*. Retrieved from http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:At-risk-of-poverty_rate
- Eurostat. (2014b). Persons living in households with low work intensity. *Glossary*. Retrieved from http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Persons_living_in_households_with_low_work_intensity
- Eurostat. (2015). Material deprivation and low work intensity statistics. Retrieved from http://ec.europa.eu/eurostat/statistics-explained/index.php/Material_deprivation_and_low_work_intensity_statistics#At_risk_of_poverty_or_social_exclusion
- Oxford Poverty & Human Development Initiative (OPHI). (2015). Multidimensional Poverty Measurement & Analysis. Retrieved from <http://multidimensionalpoverty.org/>
-