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Consiliul Național
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Youth Score Card

Methodological Note

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■ Introduction

The successful integration of young people in socio-economic processes is a prerequisite for any country's sustainable development. This was also acknowledged at international level by embedding age-disaggregated data in the 2030 Global Development Agenda and transposing them into the Sustainable Development Goals. In fact, data disaggregation stimulates evidence-based policy making in this area. However, a large number of age-disaggregated indicators have the drawback to distract the attention of decision-makers and of the general public. A solution would be to use composite indices that would integrate more youth development indicators into one single figure that could be used to guide public policies and discussions.

The compilation and implementation of youth development composite indices gains more and more momentum internationally both for the facilitation of policy monitoring and for comparing countries' performance. Such composite indices were calculated for the Republic of Moldova too, at national level only. However, the situation of the youth can differ quite significantly from one region to another in a country. For this reason, to develop youth policies geared to local conditions, composite indices have to be compiled for the specific administrative level.

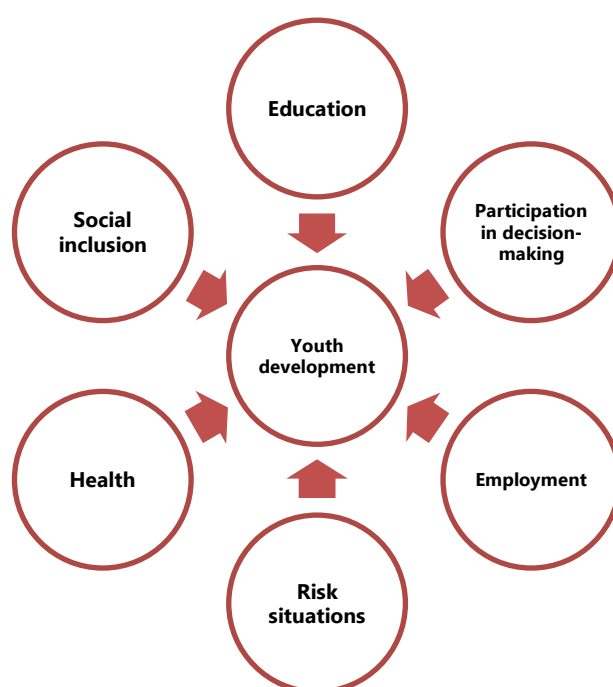
This report is meant to close the methodological gap related to the development of composite indices on the situation of youth at local level. The key purpose of the methodology is to estimate the situation of the youth in administrative territorial units of second level of the Republic of Moldova in order to facilitate policy-making and monitoring over time. The report contains both the calculation aspects of the composite index according to the best international practices, and the practical application taking an administrative territorial unit as an example. Finally, the Annex contains both area-disaggregated scores for all administrative units of second level, and the final scores of the composite index.

■ The Youth Score Card Calculation Stages

The compilation of any composite index is complex and is divided into several distinct stages. The number of these stages varies depending on the complexity of the methods applied to compilation of the final index, but it can be reduced down to four most essential ones.¹ The description of these stages for the composite index in the youth area, which can be entitled the Youth Score Card (YSC), is following:

1. Conceptual definition of the phenomenon. This stage is meant to define the phenomenon that the composite index is going to quantify both from theoretical perspective and in terms of fundamental factors that influence the given phenomenon. Thus, the areas that are critical for the young people from socio-economic point of view were identified for the YSC. The conceptual basis for the YS was taken over from the equivalent indicator developed and implemented internationally in the area of youth – the Youth Development Index (YDI).² The YDI identified the following areas important for the young people: (i) education; (ii) health and wellbeing; (iii) employment and opportunities; (iv) political participation and (v) civic participation. These areas are mostly taken over for the YSC too, with some adjustments made due to statistical constraints. So, the areas chosen for the YSC are: (i) education; (ii) participation in decision-making; (iii) employment; (iv) risk situations; (v) health and (vi) social inclusion (Figure 1).

Figure 1. Key Areas of the Youth Score Card



Source: Author's estimations

2. Selection of separate indicators for each area. Each indicator needs to be included depending on criteria, such as relevance, availability, publication periodicity, etc. Also, indicators that reflect a fundamental problem and policy efforts in a particular area mustn't be included in that same area. For instance, 'x' disease incidence indicators and the number of people treated against 'x' should not be part of the same 'health' area because the dynamics of the first indicator already reflects the efficiency of policies in this area. Another important factor that needs to be taken into account when selecting separate indicators relates to the strategic policy commitments made in the area concerned. Such a strategic

¹ M. Mazziotta, A. Pareto 'Methods for constructing composite indices: One for all or all for one?', Rivista Italiana di Economia Demografia e Statistica, Volume LXVII n.2 Aprile – Giugno 2013.

² <http://cmypdiprod.uksouth.cloudapp.azure.com/sites/default/files/2016-10/National%20YDI%20Toolkit.pdf>

commitment that needs to be taken into account is the 2030 Global Development Agenda. Thus, priority was given to the indicators for the Sustainable Development Goals (SDGs) from the 2030 Agenda. The number of indicators also needs to be balanced out by area, both on the basis of data availability and complementarity of some indicators. Thus, the list of YSC indicators was drawn up on the basis of these criteria, but also considering statistical constraints (Table 1). This list can be adjusted afterwards once other district-disaggregated indicators (including from the SDG list) become available.

Table 1. List of areas and indicators of the Youth Score Card

Area	Indicator	SDG
Education	Lower secondary education graduation rate	Yes
	Unjustified absences in hours per pupil	
	Baccalaureate pass rate	
	Share of educational institutions with access to sanitary utilities	Yes
Participation in decision-making	Youth share of total number of local councilors	
	Share of youth participating in elections	
Employment	Share of youth in long-term unemployment (more than six months)	
Risk situations	Youth crime rate	
Healthcare	Youth mortality rate (traumatism, poisoning)	Yes
	Syphilis incidence among 15-29-year-old (per 100 thousand young people of respective age group)	Yes
	Gonorrhea incidence among 15-29-year-old (per 100 thousand young people of respective age group)	Yes
	Adolescent birth rate among 10-19-years old (per 1000 women of respective age group)	Yes
Social inclusion	Share of young people with disabilities integrated in general education	
	Share of young people with disabilities registered at NEA	

Source: Author's compilation

3. Normalisation of indicators. The normalisation methods are employed to make all indicators comparable with one another, because the units of measurement can differ (e.g. indicators measured in monetary or percentage units). Normalisation is also needed to be able to include in the final index both positive correlated indicators (e.g. access to education) and negative correlated indicators (e.g. unemployment) with the measurable phenomenon, so as the rise in the value of the normalised indicators would also lead to an increase in the composite index. The Min-Max method was chosen for the normalisation of YSC indicators (the rationale behind this choice is explained in Figure 2). This method compresses the value of each indicator in the [0, 1] interval in accordance with Formulae 1 and 2. The method applies both to indicators with positive (Formula 1) and in negative correlation (Formula 2) with the quantified phenomenon. For the normalised values to be comparable from year to year, the maximum and minimum values were chosen for 2017 as reference for each indicator.

Formula 1. The Min-Max Formula for Positive Correlated Indicators

$$Indicator = \frac{Value\ in\ year\ i - Minimum\ reference\ value\ in\ 2017}{Maximum\ reference\ value\ in\ 2017 - Minimum\ reference\ value\ in\ 2017}$$

Formula 2. The Min-Max Formula for Negative Correlated Indicators

$$Indicator = 1 - \frac{Value\ in\ year\ i - Minimum\ reference\ value\ in\ 2017}{Maximum\ reference\ value\ in\ 2017 - Minimum\ reference\ value\ in\ 2017}$$

‘Indicator’ is the normalised value of the indicator (score);

‘Value in year i’ is the value of the indicator in the year for which the index is being calculated;

'Maximum reference value in 2017' is selected for each separate indicator as the highest value found in all the districts of the Republic of Moldova in 2017 (reference year);

'Minimum reference value in 2017' is selected for each separate indicator as the lowest value found in all the districts of the Republic of Moldova in 2017 (reference year).

4. Aggregation of normalised indicators. At this stage, the normalised values of each separate indicator are being combined into one single figure of the composite index. The methods of aggregation differ depending on their complexity, but also on the typology and way of combination of separate indicators. The indicators can be 'substitutable' and 'non-substitutable', depending on whether the deficit in an indicator can be set off by the surplus in another. In our case, the 'substitutable' indicators are included in distinct areas, e.g. – there are only indicators describing the quantitative and qualitative aspects of education in the area of 'Education'. The YSC areas are 'non-substitutable', though, because a better situation of the health area cannot offset a worse situation of the education area. Usually, additive methods (e.g. arithmetic means) are used for 'substitutable' indicators, while the recommended methods for dealing with 'non-substitutable' indicators are non-linear aggregation methods (e.g. geometric means). For these considerations, the arithmetic mean will be used for the aggregation of indicators for each area of the YSC (Formula 3), while the aggregation of the areas into one single index will be made via the geometric means.

Formula 3. Aggregation of Indicators in Each Area

$$Index\ by\ area_i = \frac{Indicator_1 + Indicator_2 + \dots + Indicator_n}{n}$$

Where i – 'Education', 'Participation in decision-making', 'Employment', 'Risk situations', 'Health', 'Social inclusion'.

Formula 4. Aggregation of indices by areas in the YSC

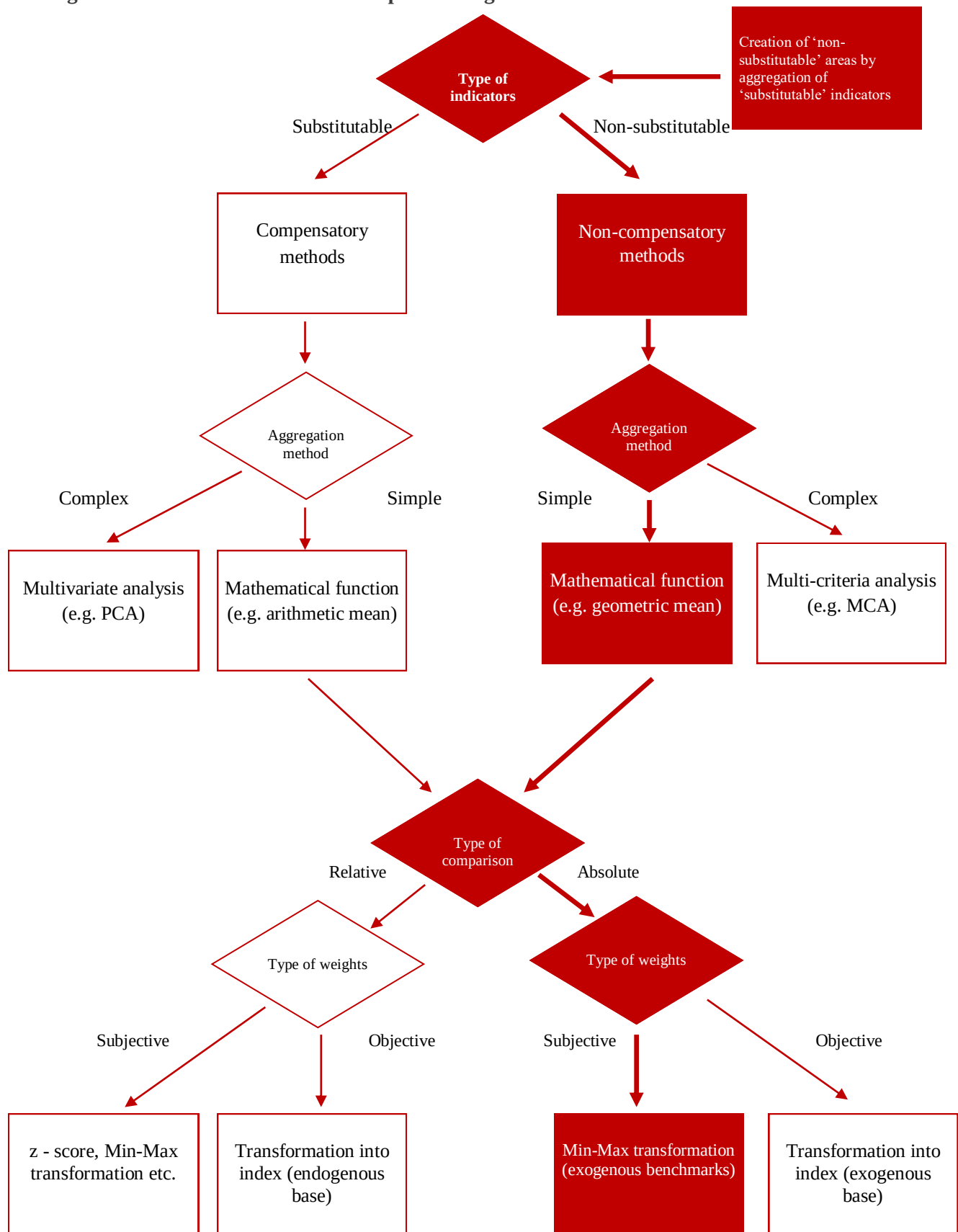
$$IDT = (Ind_{Edu} * Ind_{Particip} * Ind_{Empl} * Ind_{Risk} * Ind_{Health} * Ind_{Inclusion})^{1/6}$$

Where Ind_{Edu} etc., are the sub-indices calculated per area according to Formula 3.

The compilation of the YSC and substantiation of each stage according to good practices is described in Figure 2:³

³Graphical illustration developed on the basis of M. Mazziotta, A. Pareto 'Methods for constructing composite indices: One for all or all for one?', Rivista Italiana di Economia Demografia e Statistica, Volume LXVII n.2 Aprile – Giugno 2013.

Figure 2. The Youth Score Card Compilation Algorithm



■ Calculation of the Youth Score Card

The model calculation will be applied on Chisinau municipality for each separate area and indicator, and will be replicated for the other administrative territorial units.

Stage 1. Normalisation of indicators by area

‘Education’ Area

Indicator – Lower secondary education graduation rate.

The data for this indicator can be obtained from public sources on the website of the National Bureau of Statistics (the NBS). The indicator is found as the ratio between the number of lower secondary education graduates and the total number of the 14-year-old population living in the country in the year for which the index was calculated. This indicator is one with positive correlation with the final index because higher values of the graduation rate are indicative of a more favourable situation of the young people. In this case, the indicator will be normalised according to Formula 1.

The highest graduation rate in 2017 was registered in Chisinau municipality – 94.1% and will be used as the ‘Maximum reference value in 2017’. The lowest graduation rate was registered in Basarabeasca District – 56.7% and will be used as the ‘Minimum reference value in 2017’. Introducing these figures in Formula 1 will result in a maximum score of 1 for Chisinau municipality in 2017, this being the best performance for this indicator:

$$\begin{aligned} \text{Ind (Chisinau)} &= \frac{\text{Value in year } i - \text{Minimum reference value in 2017}}{\text{Maximum reference value in 2017} - \text{Minimum reference value in 2017}} = \frac{94.1 - 56.7}{94.1 - 56.7} \\ &= \frac{37.4}{37.4} = 1 \end{aligned}$$

Indicator – Unjustified absences in hours per pupil .

The data for this indicator are available in the Education Management Information System (EMIS) for each educational sub-level.⁴ The indicator is calculated as the arithmetic means of the number of unjustified absences per pupil for each educational sub-level (values for classes 1-4, 5-9 and 10-12). This indicator has a negative correlation with the composite index because a smaller number of unjustified absences from classes per pupil reflects a more desirable situation. Thus, the normalisation Formula 2 should be applied in this case.

The smallest average of unjustified absences per pupil in 2017 was registered in Taraclia district (5.48 hours per pupil) and it will be used as the ‘Minimum reference value in 2017’. The greatest average of unjustified absences was registered in Leova (55.17 hours per pupil), which will be used as the ‘Maximum reference value in 2017’. This value reached 13.12 hours per pupil in Chisinau municipality. Thus, using these figures in Formula 2, the score will be 0.85 for Chisinau.

$$\begin{aligned} \text{Ind (Chisinau)} &= 1 - \frac{\text{Value in year } i - \text{Minimum reference value in 2017}}{\text{Maximum reference value in 2017} - \text{Minimum reference value in 2017}} \\ &= 1 - \frac{13.12 - 5.48}{55.17 - 5.48} = 0.85 \end{aligned}$$

⁴ <https://www.sime.md:8443/ords/f?p=200:1:15989831390177:::>

Indicator – Baccalaureate pass rate.

The data for this indicator are public and available on the official website of the National Curriculum and Evaluation Agency.⁵The indicator has a positive correlation with the final index. Therefore, Formula 1 will be applied.

The highest pass rate was registered in Taraclia district in 2017 – 90.82%. It will be used as the ‘Maximum reference value in 2017’. The lowest pass rate was registered in Briceni district in 2017 – 63.74%. It will be used as the ‘Minimum reference value in 2017’. The pass rate was of 83.18% in Chisinau municipality. Using these figures in Formula 1 will lead to a score of 0.72 in Chisinau.

$$\begin{aligned} Ind (Chisinau) &= \frac{\text{Value in year } i - \text{Minimum reference value in 2017}}{\text{Maximum reference value in 2017} - \text{Minimum reference value in 2017}} \\ &= \frac{83.18 - 63.74}{90.82 - 63.74} = \frac{19.44}{27.08} = 0.72 \end{aligned}$$

Indicator – Share of educational institutions with access to sanitary utilities.

The data for this indicator are partially public. The total number of mainstream educational institutions is available in EMIS, while the number of institutions that have access to sanitary utilities can be requested from the Ministry of Education, Culture and Research. This indicator has a positive correlation with the composite index and Formula 1 will be applied.

In 2017, the greatest share of educational institutions with access to sanitary utilities was registered in Taraclia district – 83.3%. It will be used as the ‘Maximum reference value in 2017’. The lowest share – of 24.4% – was registered in Soroca district. It will be used as the ‘Minimum reference value in 2017’. This weight was of 81.9% in Chisinau municipality. Using these figures in Formula 1 will lead to a score of 0.98 in Chisinau.

$$\begin{aligned} Ind (Chisinau) &= \frac{\text{Value in year } i - \text{Minimum reference value in 2017}}{\text{Maximum reference value in 2017} - \text{Minimum reference value in 2017}} = \frac{81.9 - 24.4}{83.3 - 24.4} \\ &= \frac{57.5}{58.9} = 0.98 \end{aligned}$$

The Area of ‘Participation in Decision-Making’**Indicator – Youth share of total number of local councilors .**

This indicator is calculated as the ratio between the total number of young local councilors (18-35-year-old) and the total number of local councilors. The data for this indicator are not public, but they can be requested from the Central Electoral Commission. This indicator has a positive correlation with the composite index and Formula 1 will be applied.

When local elections were held in 2015, the greatest weight of young councilors was registered in Ialoveni district – 16.9%, and it will be used as the ‘Maximum reference value in 2017’. The lowest weight – of 4.9% – was registered in Rezina district. It will be used as the ‘Minimum reference value in 2017’. This share was of 16.5% in Chisinau municipality. Using these figures in Formula 1 will lead to a score of 0.97 in Chisinau.

⁵ <http://aee.edu.md/content/transparen%C8%9B>

$$\begin{aligned} \text{Ind (Chisinau)} &= \frac{\text{Value in year } i - \text{Minimum reference value in 2017}}{\text{Maximum reference value in 2017} - \text{Minimum reference value in 2017}} = \frac{16.5 - 4.9}{16.9 - 4.9} \\ &= \frac{11.6}{12.0} = 0.97 \end{aligned}$$

Indicator –Share of youth participating in elections.

This indicator is calculated as the ratio between the total number of young people (18-35-year-old) who voted and the total number of young people on the voter list. The data are not public, but they can be requested from the Central Electoral Commission. This indicator has a positive correlation with the composite index and Formula 1 will apply.

When local elections were held in 2015, the greatest weight of young people who cast their vote was registered in Chisinau municipality – 47.4%, and it will be used as the ‘Maximum reference value in 2017’. The lowest weights – of 15.6% – was registered in Calarasi district. It will be used as the ‘Minimum reference value in 2017’. Using these figures in Formula 1 will lead to a score of 1.0 in Chisinau.

$$\begin{aligned} \text{Ind (Chisinau)} &= \frac{\text{Value in year } i - \text{Minimum reference value in 2017}}{\text{Maximum reference value in 2017} - \text{Minimum reference value in 2017}} = \frac{47.4 - 15.6}{47.4 - 15.6} \\ &= \frac{31.8}{31.8} = 1.0 \end{aligned}$$

‘Employment’ Area

Indicator – Share of youth in long-term unemployment (more than six months).

This indicator calculates the share of young unemployed people (15-35-year-old) registered at the National Employment Agency (NEA) for longer than six months. The data are not public, but they can be requested from the NEA. This indicator has a negative correlation with the composite index and the Formula 2 will be applied.

The lowest share in 2017 was registered in Cimislia district – 5.9%. It will be used as the ‘Minimum reference value in 2017’. The highest share was registered in Dubasari municipality – 55.1%, which will be used as the ‘Maximum reference value in 2017’. This weight was of 12.0% in Chisinau municipality. Thus, using these figures in Formula 2, the score will be 0.88 for Chisinau.

$$\begin{aligned} \text{Ind (Chisinau)} &= 1 - \frac{\text{Value in year } i - \text{Minimum reference value in 2017}}{\text{Maximum reference value in 2017} - \text{Minimum reference value in 2017}} \\ &= 1 - \frac{12.0 - 5.9}{55.1 - 5.9} = 0.88 \end{aligned}$$

‘Risk Situations’ Area

Indicator – Youth crime rate.

This indicator is calculated as the ratio of the number of young offenders (15-35-year-old) and the total number of population of the same age. The data on the number of offenders are not public, but they can be requested from the Ministry of Internal Affairs, while the total number of population of the aforementioned age can be found on the official NBS page. This indicator has a negative correlation with the composite index and the Formula 2 will be applied.

The lowest crime rate in 2017 was registered in Cimislia district – 0.26%. It will be used as the ‘Minimum reference value in 2017’. The highest crime rate was registered in Balti municipality – 1.39%, which will be used as the ‘Maximum reference value in 2017’. The crime rate in Chisinau municipality was 1.2%. Thus, using these figures in Formula 2, the score will be 0.17 for Chisinau.

$$\begin{aligned} Ind (Chisinau) &= 1 - \frac{Value\ in\ year\ i - Minimum\ reference\ value\ in\ 2017}{Maximum\ reference\ value\ in\ 2017 - Minimum\ reference\ value\ in\ 2017} \\ &= 1 - \frac{1.2 - 0.26}{1.39 - 0.26} = 0.17 \end{aligned}$$

‘Health’ Area

The disaggregated data for certain indicators in the ‘Health’ area are available only for the age group 15-19 years. That is why the majority of indicators for this area were selected for the mentioned age.

Indicator – Youth mortality rate (traumatism, poisoning).

The indicator represents the number of deaths among young people aged 15-29 per 100 thousand inhabitants of respective age. The disaggregated data for this indicator are not public, but can be obtained from the National Public Health Agency. This indicator has a negative correlation with the composite index and Formula 2 will be applied.

The lowest mortality rate in 2017 was registered in Donduseni district with 11.2 cases per 100 thousand 15-29-year-old and will be used as the ‘Minimum reference value in 2017’. The highest mortality rate was registered in Cimislia district – 63.7 cases per 100 thousand inhabitants of the mentioned age and will be used as the ‘Maximum reference value in 2017’. In Chisinau municipality, this rate was 23.0 cases per 100 thousand young people. Thus, using these figures in Formula 2, the score will be 0.78 for Chisinau.

$$\begin{aligned} Ind (Chisinau) &= 1 - \frac{Value\ in\ year\ i - Minimum\ reference\ value\ in\ 2017}{Maximum\ reference\ value\ in\ 2017 - Minimum\ reference\ value\ in\ 2017} \\ &= 1 - \frac{23.0 - 11.2}{63.7 - 11.2} = 0.78 \end{aligned}$$

Indicator – Syphilis incidence among 15-29-year-olds (per 100 thousand young people of respective age group).

The data for this indicator are not available in public sources, but can be requested from the National Public Health Agency. This indicator has a negative correlation with the composite index and Formula 2 will be applied.

The lowest syphilis incidence (number of new cases of syphilis reported per 100 thousand young people aged 15-29 years) was registered in 2017 in Basarabeasca district (zero cases) and will be used as ‘Minimum reference value in 2017’. The highest incidence was registered in Chisinau municipality – 157.1 new cases of syphilis per 100 thousand young people and will be used as the ‘Maximum reference value in 2017’. Thus, using these figures in Formula 2, the score will be 0.00 for Chisinau.

$$\begin{aligned} Ind (Chisinau) &= 1 - \frac{Value\ in\ year\ i - Minimum\ reference\ value\ in\ 2017}{Maximum\ reference\ value\ in\ 2017 - Minimum\ reference\ value\ in\ 2017} \\ &= 1 - \frac{157.1 - 0.0}{157.1 - 0.0} = 0.0 \end{aligned}$$

Indicator – Gonorrhea incidence among 15-29-year-olds (per 100 thousand young people of respective age group).

The data for this indicator are not available in public sources, but can be requested from the National Public Health Agency. This indicator has a negative correlation with the composite index and Formula 2 will be applied.

The lowest gonorrhea incidence (number of new cases of gonorrhea reported per 100 thousand young people aged 15-29 years) was registered in 2017 in Dubasari and Orhei districts (zero cases) and will be used as 'Minimum reference value in 2017'. The highest incidence was registered in Chisinau municipality – 136.06 new cases of gonorrhea per 100 thousand young people and will be used as the 'Maximum reference value in 2017'. Thus, using these figures in Formula 2, the score will be 0.00 for Chisinau.

$$\begin{aligned} Ind (Chisinau) &= 1 - \frac{Value\ in\ year\ i - Minimum\ reference\ value\ in\ 2017}{Maximum\ reference\ value\ in\ 2017 - Minimum\ reference\ value\ in\ 2017} \\ &= 1 - \frac{136.06 - 0.0}{136.06 - 0.0} = 0.0 \end{aligned}$$

Indicator – Adolescent birth rate among 10-19-years olds (per 1000 women of respective age group).

The data regarding the number of births at the age of 10-19 years are not available in public sources and can be requested from the National Public Health Agency. The total number of girls aged 10-19 years is available on the official website of NBS. This indicator has a negative correlation with the composite index and Formula 2 will be applied.

The lowest adolescent birth rate in 2017 was registered in four districts (Causeni, Dubasari, Floresti and Orhei) – 0 (zero) cases per 1000 women aged 10-19 years and will be used as the 'Minimum reference value in 2017'. The highest rate was registered in Balti municipality – 27.5 cases per 1000 young women and will be used as the 'Maximum reference value in 2017'. Six cases were identified in Chisinau municipality. Thus, using these figures in Formula 2, the score will be 0.78 for Chisinau.

$$\begin{aligned} Ind (Chisinau) &= 1 - \frac{Value\ in\ year\ i - Minimum\ reference\ value\ in\ 2017}{Maximum\ reference\ value\ in\ 2017 - Minimum\ reference\ value\ in\ 2017} \\ &= 1 - \frac{6.0 - 0.0}{27.5 - 0.0} = 0.78 \end{aligned}$$

'Social inclusion' Area

Indicator – Share of young people with disabilities integrated in general education.

This indicator is calculated as the ratio between the number of young people integrated in the general education and the number of beneficiaries of social benefits for people with disabilities (7-18 years). The data for this indicator are not available for public and need to be requested from the Ministry of Education, Culture and Social Protection (integrated young people) and from the National Social Insurance House (NSIH). This indicator has a positive correlation with the composite index and Formula 1 will apply.

The greatest weight of young people integrated in the education system was registered in Calarasi district – 47.0% and will be used as the 'Maximum reference value in 2017'. The lowest weight – of 4.4% – was registered in Donduseni district. It will be used as the 'Minimum reference value in 2017'. This weight

was of 10.5% in Chisinau municipality. Using these figures in Formula 1 will lead to a score of 0.14 in Chisinau.

$$\begin{aligned} \text{Ind (Chisinau)} &= \frac{\text{Value in year } i - \text{Minimum reference value in 2017}}{\text{Maximum reference value in 2017} - \text{Minimum reference value in 2017}} = \frac{10.5 - 4.4}{47.0 - 4.4} \\ &= \frac{6.1}{42.6} = 0.14 \end{aligned}$$

Indicator – Share of young people with disabilities registered at the NEA.

This indicator is calculated as the ratio between the number of young people with disabilities aged 15-35 years registered at NEA and the number of beneficiaries of social benefits for people of the same age. The data from the first indicator can be obtained from NEA, and for the second – from NSIH because they are not available in public sources. This indicator has a negative correlation with the composite index and Formula 2 will be applied.

The lowest weight of unemployed young people with disabilities was registered in 2017 in two districts (Cimislia and Nisporeni) – 0%. It will be used as the ‘Minimum reference value in 2017’. The highest weight was registered in Taraclia district – 12.1%, which will be used as the ‘Maximum reference value in 2017’. This share was of 4.7% in Chisinau municipality. Thus, using these figures in Formula 2, the score will be 0.78 for Chisinau.

$$\begin{aligned} \text{Ind (Chisinau)} &= 1 - \frac{\text{Value in year } i - \text{Minimum reference value in 2017}}{\text{Maximum reference value in 2017} - \text{Minimum reference value in 2017}} \\ &= 1 - \frac{4.7 - 0.0}{12.1 - 0.0} = 0.61 \end{aligned}$$

Stage 2. Aggregation of normalised indicators by areas

Aggregation of normalised indicators by areas is done by calculating the arithmetic mean and for Chisinau municipality these sub-indices will be:

$$\begin{aligned} \text{Index (Chisinau)}_{\text{Education}} &= \frac{\text{Ind (Graduation rate)} + \text{Ind (Absenteeism)} + \text{Ind (Baccalaureate)} + \text{Ind (Water closet)}}{4} = \frac{1 + 0.85 + 0.72 + 0.98}{4} = \frac{2.99}{4} = \\ &0.63 \end{aligned}$$

$$\text{Index (Chisinau)}_{\text{Participation}} = \frac{\text{Ind (Local councilors)} + \text{Ind (Participation in voting)}}{2} = \frac{0.97 + 1}{2} = 0.98$$

$$\text{Index (Chisinau)}_{\text{Employment}} = \text{Ind (Long term unemployment)} = 0.88$$

$$\text{Index (Chisinau)}_{\text{Risk}} = \text{Ind (Delinquency)} = 0.17$$

$$\begin{aligned} \text{Index (Chisinau)}_{\text{Health}} &= \frac{\text{Ind (Mortality)} + \text{Ind (Syphilis)} + \text{Ind (Gonorrhea)} + \text{Ind (early motherhood)}}{4} = \\ \frac{0.78 + 0.0 + 0.0 + 0.78}{4} &= 0.39 \end{aligned}$$

$$\text{Index (Chisinau)}_{\text{Inclusion}} = \frac{\text{Ind (Integrated in education)} + \text{Ind (Unemployed)}}{2} = \frac{0.14 + 0.61}{2} = 0.38$$

Classification of administrative territorial units of second level by areas, based on the values of sub-indices by areas are shown in Annexes 1-6.

Stage 3. Compilation of the composite index

Based on the sub-indices by areas the compilation of the YSC is done according to the following formula (geometric mean):

$$IDT(Chisinau) = (Ind_{Edu} * Ind_{Particip} * Ind_{Empl} * Ind_{Risk} * Ind_{Health} * Ind_{Inclusion})^{\frac{1}{6}} =$$
$$(0.63 * 0.98 * 0.88 * 0.17 * 0.39 * 0.38)^{\frac{1}{6}} = 0.49$$

Using the geometric mean as a method for aggregating the composite index requires certain adjustments for the sub-indices by areas which contain a single indicator ('Risk situations' and 'Employment'). Whereas for these areas certain administrative units will receive the lowest score – 0 (zero), it is necessary to modify it in 0.01 to avoid obtaining the score 0 (zero) for YSC. For example if Ind_{Empl} or Ind_{Risk} for Chisinau had been 0 (zero) (the worst performance), these scores would have been replaced with 0,01.

The final scores for each administrative territorial unit and their classification are shown in Annex 7, and Annex 8 contains a set of additional demographic indicators.

■ Classification of administrative territorial units

The main goal of the YSC compilation is to facilitate the comparison of the performance of administrative territorial units in areas related to the young people. To facilitate this comparison, it is useful to group the administrative territorial units in performance groups. Based on YSC values at aggregated level and by areas, these groups may be:

- **Very high performance** (YSC has values between 1.00-0.75);
- **High performance** (YSC has values between 0.74-0.50);
- **Average performance** (YSC has values between 0.49-0.25);
- **Low performance** (YSC has values between 0.24-0.00).

The analysis of administrative territorial units of second level based on this classification highlights the fact that none of them registered a very high performance score. The absolute majority fell whether within the category with high performance (17 units), whether with average performance (17 units). Only Dubasari district falls in the category with low performance (under 0.24). The YSC was compiled on the basis of data concerning Chisinau municipality, which registered an average performance (Table3).

Table3. Classification of administrative territorial units according to the Youth Score Card

No	Administrative Unit	Score	Performance
1	Cimislia	0.65	High
2	Drochia	0.60	High
3	Anenii Noi	0.60	High
4	Ialoveni	0.59	High
5	Singerei	0.58	High
6 - 7	Orhei	0.57	High
6 - 7	Calarasi	0.57	High
8 - 11	Telenesti	0.54	High
8 - 11	Straseni	0.54	High
8 - 11	Nisporeni	0.54	High
8 - 11	Basarabeasca	0.54	High
12 - 13	Causeni	0.52	High
12 - 13	Falesti	0.52	High
14	Gagauzia ATU	0.51	High
15 - 17	Edinet	0.50	High
15 - 17	Cahul	0.50	High
15 - 17	Criuleni	0.50	High
18 - 20	Cantemir	0.49	Medium
18 - 20	Chisinau mun.	0.49	Medium
18 - 20	Stefan Voda	0.49	Medium
21 - 22	Riscani	0.48	Medium
21 - 22	Floresti	0.48	Medium
23 - 24	Soroca	0.47	Medium
23 - 24	Glodeni	0.47	Medium
25 - 26	Leova	0.46	Medium
25 - 26	Taracia	0.46	Medium
27 - 28	Ungheni	0.45	Medium
27 - 28	Donduseni	0.45	Medium
29 - 30	Briceni	0.44	Medium
29 - 30	Rezina	0.44	Medium
31	Hincesti	0.43	Medium
32	Soldanesti	0.41	Medium
33	Ocnita	0.31	Medium
34	Balti mun.	0.28	Medium
35	Dubasari	0.24	Low

Source: Author's calculations

Factors which influence the aggregated performance of territorial administrative units can be identified by analysing the scores by areas which form the YSC. For example, the average performance of Chisinau municipality is mainly due to the minimum score for the area 'Risk situations' that is for youth delinquency. In addition, the vulnerable areas for the municipality are still health and social inclusion of young people. Thus, these areas can be identified as priorities for the activity of relevant public authorities. At the same time, a more in-depth analysis is necessary to identify the factors that influence each area and the comparative performance of the municipality with other territorial administrative units.

Table 4. Performance of Chisinau municipality according to the Youth Scorecard

Area	Score	Performance
Education	0.63	High
Participation in decision-making	0.98	Very high
Employment	0.88	Very high
Risk situations	0.17	Low
Health	0.39	Medium
Social inclusion	0.38	Medium

Source: Author's calculations

■ Anexes

Annex 1. Classification of administrative territorial units for the ‘Education’ area

No	Administrative Unit	Score
1	Taracalia	0.89
2 - 3	Stefan Voda	0.88
2 - 3	Telenesti	0.88
4	Ialoveni	0.72
5	Hincesti	0.71
6 - 8	Donduseni	0.70
6 - 8	Falesti	0.70
6 - 8	Glodeni	0.70
9 - 10	Floresti	0.68
9 - 10	Briceni	0.68
11 - 12	Anenii Noi	0.67
11 - 12	Cimislia	0.67
13 - 14	Dubasari	0.66
13 - 14	Gagauzia ATU	0.66
15	Ungheni	0.64
16 - 18	Drochia	0.63
17	Calarasi	0.63
18	Chisinau mun.	0.63
19	Basarabeasca	0.61
20	Singerei	0.60
21	Edinet	0.59
22 - 23	Leova	0.58
22 - 23	Riscani	0.58
24	Straseni	0.57
25	Cahul	0.55
26	Causeni	0.54
27	Ocnita	0.47
28	Balti mun.	0.46
29 - 30	Criuleni	0.45
29 - 30	Soroca	0.45
31	Cantemir	0.44
32	Orhei	0.42
33 - 34	Nisporeni	0.41
33 - 34	Rezina	0.41
35	Soldanesti	0.39

Source: Author's calculations

Annex 2. Classification of administrative territorial units for the ‘Participation in decision-making’ area

No	Administrative Unit	Score
1	Chisinau mun.	0.98
2	Ialoveni	0.89
3	Criuleni	0.82
4	Straseni	0.74
5	Anenii Noi	0.66
6	Orhei	0.65
7	Dubasari	0.61
8	Riscani	0.58
9	Balti mun.	0.57
10 - 11	Briceni	0.51
10 - 11	Falesti	0.51
12 - 13	Donduseni	0.50
12 - 13	Ungheni	0.50
14 - 16	Edinet	0.49
14 - 16	Nisporeni	0.49
14 - 16	Glodeni	0.49
17 - 18	Soroca	0.46
17 - 18	Drochia	0.46
19 - 20	Ocnita	0.43

19 - 20	Taracليا	0.43
21	Singerei	0.42
22	Basarabeasca	0.41
23	Gagauzia ATU	0.38
24	Cimislia	0.37
25 - 28	Hincesti	0.36
25 - 28	Cantemir	0.36
25 - 28	Causeni	0.36
25 - 28	Cahul	0.36
29	Rezina	0.35
30	Floresti	0.34
31	Soldanesti	0.31
32 - 33	Stefan Voda	0.30
32 - 33	Leova	0.30
34	Telenesti	0.26
35	Calarasi	0.22

Source: Author's calculations

Annex 3. Classification of administrative territorial units for the 'Employment' area

No	Administrative Unit	Score
1	Cimislia	1.00
2 - 3	Leova	0.89
2 - 3	Balti mun.	0.89
4	Chisinau mun.	0.88
5	Calarasi	0.84
6	Stefan Voda	0.78
7	Straseni	0.77
8 - 9	Cantemir	0.76
8 - 9	Drochia	0.76
10	Telenesti	0.68
11	Orhei	0.66
12	Anenii Noi	0.61
13	Nisporeni	0.60
14	Cahul	0.59
15	Basarabeasca	0.56
16	Ialoveni	0.54
17	Gagauzia ATU	0.52
18	Rezina	0.51
19	Singerei	0.49
20	Causeni	0.48
21	Ungheni	0.45
22	Soroca	0.42
23	Edinet	0.41
24	Donduseni	0.40
25	Briceni	0.33
26	Criuleni	0.32
27	Soldanesti	0.30
28 - 29	Falesti	0.25
28 - 29	Riscani	0.25
30	Taracليا	0.23
31	Floresti	0.19
32	Hincesti	0.17
33	Glodeni	0.13
34	Ocnita	0.05
35	Dubasari	0.01

Source: Author's calculations

Annex 4. Classification of administrative territorial units for the 'Risk Situations' area

No	Administrative Unit	Score
1	Cimislia	1.00
2	Glodeni	0.83
3	Drochia	0.78
4	Singerei	0.77
5	Cahul	0.76

6	Taracليا	0.73
7	Anenii Noi	0.70
8 - 9	Riscani	0.67
8 - 9	Calarasi	0.67
10	Nisporeni	0.66
11 - 12	Falesti	0.65
11 - 12	Causeni	0.65
13	Cantemir	0.61
14 - 15	Criuleni	0.60
14 - 15	Basarabeasca	0.60
16 - 18	Telenesti	0.57
16 - 18	Gagauzia ATU	0.57
16 - 18	Floresti	0.57
19	Hincesti	0.50
20	Orhei	0.49
21	Soldanesti	0.47
22	Ocnita	0.46
23	Edinet	0.46
24	Briceni	0.39
25	Leova	0.38
26	Ialoveni	0.36
27	Soroca	0.35
28	Ungheni	0.33
29 - 30	Donduseni	0.32
29 - 30	Straseni	0.32
31	Rezina	0.30
32	Dubasari	0.23
33	Stefan Voda	0.21
34	Chisinau mun.	0.17
35	Balti mun.	0.01

Source: Author's calculations

Annex 5. Classification of administrative territorial units for the 'Health' area

No	Administrative Unit	Score
1	Glodeni	0.84
2	Singerei	0.81
3	Floresti	0.80
4	Orhei	0.77
5	Dubasari	0.74
6 - 7	Taracليا	0.73
6 - 7	Briceni	0.73
8	Edinet	0.72
9 - 10	Criuleni	0.71
9 - 10	Donduseni	0.71
11 - 12	Soroca	0,68
11 - 12	Basarabeasca	0,68
13 - 15	Ialoveni	0.65
13 - 15	Calarasi	0.65
13 - 15	Drochia	0.65
16	Falesti	0.64
17 - 20	Gagauzia ATU	0.62
17 - 20	Telenesti	0.62
17 - 20	Riscani	0.62
17 - 20	Hincesti	0.62
21	Anenii Noi	0.60
22 - 24	Straseni	0,58
22 - 24	Stefan Voda	0,58
22 - 24	Balti mun.	0,58
25	Leova	0.57
26 - 28	Cahul	0.56
26 - 28	Cimislia	0.56
26 - 28	Ocnita	0.56
29	Nisporeni	0.55
30	Rezina	0.52

31	Causeni	0.52
32	Cantemir	0.51
33	Soldanesti	0.50
34	Ungheni	0.47
35	Chisinau mun.	0.39

Source: Author's calculations

Annex 6. Classification of administrative territorial units for the 'Social Inclusion' area

No	Administrative Unit	Score
1	Calarasi	0.68
2	Rezina	0.67
3 - 4	Causeni	0.61
3 - 4	Floresti	0.61
5	Cimislia	0.57
6	Nisporeni	0.55
7	Soroca	0.53
8 - 9	Falesti	0.52
8 - 9	Soldanesti	0.52
10 - 11	Orhei	0.51
10 - 11	Ialoveni	0.51
12 - 13	Stefan Voda	0.50
12 - 13	Hincesti	0.50
14	Singerei	0.49
15	Telenesti	0.45
16	Drochia	0.43
17 - 19	Basarabasca	0.42
17 - 19	Edinet	0.42
17 - 19	Anenii Noi	0.42
20 - 22	Straseni	0.40
20 - 22	Gagauzia ATU	0.40
20 - 22	Ungheni	0.40
23	Balti mun.	0.39
24 - 25	Chisinau mun.	0.38
24 - 25	Riscani	0.38
26	Cantemir	0.37
27	Cahul	0.34
28 - 29	Glodeni	0.32
28 - 29	Criuleni	0.32
30 - 31	Dubasari	0.31
30 - 31	Ocnita	0.31
32	Leova	0.30
33	Donduseni	0.26
34	Briceni	0.24
35	Taraclia	0.20

Source: Author's calculations

Annex 7. Classification of administrative territorial units according to the Youth Scorecard at aggregated level

No	Administrative Unit	Score
1	Cimislia	0.65
2	Drochia	0.60
3	Anenii Noi	0.60
4	Ialoveni	0.59
5	Singerei	0.58
6 - 7	Orhei	0.57
6 - 7	Calarasi	0.57
8 - 11	Telenesti	0.54
8 - 11	Straseni	0.54
8 - 11	Nisporeni	0.54
8 - 11	Basarabasca	0.54
12 - 13	Causeni	0.52
12 - 13	Falesti	0.52
14 - 15	Gagauzia ATU	0.51
14 - 15	Edinet	0.51

16 - 17	Cahul	0.50
16 - 17	Criuleni	0.50
18 - 20	Cantemir	0.49
18 - 20	Chisinau mun.	0.49
18 - 20	Stefan Voda	0.49
21 - 22	Riscani	0.48
21 - 22	Floresti	0.48
23 - 24	Soroca	0.47
23 - 24	Glodeni	0.47
25 - 26	Leova	0.46
25 - 26	Taraclia	0.46
27 - 28	Ungheni	0.45
27 - 28	Donduseni	0.45
29 - 30	Briceni	0.44
29 - 30	Rezina	0.44
31	Hincesti	0.43
32	Soldanesti	0.41
33	Ocnita	0.31
34	Balti mun.	0.28
35	Dubasari	0.24

Source: Author's calculations

Annex 8. Classification of administrative territorial units and key demographic indicators

No	Administrative Unit	Score	Population (thousand people)	Urban (% of total population)	Young people (% of total population)
1	Cimislia	0.65	59,550	24.0	36.4
2/3	Drochia	0.60	86,763	23.5	28.3
2/3	Anenii Noi	0.60	83,422	10.6	33.2
4	Ialoveni	0.59	101,549	16.3	35.8
5	Singerei	0.58	91,962	20.3	33.3
6/7	Orhei	0.57	124,802	27.2	33.7
6/7	Calarasi	0.57	77,425	21.0	34.0
8/11	Telenesti	0.54	71,911	11.3	35.1
8/11	Straseni	0.54	92,359	24.0	34.1
8/11	Nisporeni	0.54	65,397	21.9	35.5
8/11	Basarabeasca	0.54	28,254	43.9	34.7
12/13	Causeni	0.52	90,160	27.1	33.7
12/13	Falesti	0.52	91,156	18.5	31.5
14/15	Gagauzia ATU	0.51	161,997	40.7	33.9
14/15	Edinet	0.51	80,290	32.3	28.8
16/17	Cahul	0.50	124,472	31.7	35.5
16/17	Criuleni	0.50	73,576	11.6	34.2
18/20	Cantemir	0.49	61,752	9.3	36.5
18/20	Chisinau mun.	0.49	820,464	90.9	35.6
18/20	Stefan Voda	0.49	70,208	12.2	33.7
21/22	Riscani	0.48	67,462	22.9	29.8
21/22	Floresti	0.48	86,864	22.7	30.9
23/24	Soroca	0.47	100,010	37.6	32.4
23/24	Glodeni	0.47	59,349	19.1	30.6
25/26	Leova	0.46	52,545	29.4	34.8
25/26	Taraclia	0.46	43,417	47.6	32.4
27/28	Ungheni	0.45	117,057	35.1	33.9
27/28	Donduseni	0.45	42,474	24.3	28.3
29/30	Briceni	0.44	72,448	21.0	30.0
29/30	Rezina	0.44	50,448	25.5	32.4
31	Hincesti	0.43	119,690	14.4	36.2
32	Soldanesti	0.41	41,539	18.1	31.4
33	Ocnita	0.31	53,524	35.6	28.2
34	Balti mun.	0.28	151,249	96.7	32.9
35	Dubasari	0.24	35,267	0.0	33.1

Source: Author's calculations based on National Bureau of Statistics data