

METHODOLOGY FOR STUDUING OF POPULATION

Methodology and basic concepts

Survey objects in the demographic statistics are population and demographic events.

The main category used in the current demographic statistics and population censuses is 'permanent resident population'. This category includes people, who live permanently (usually) in the country and have not left it officially as of 31.12. of the respective year for a period more than one year.

The population is defined at a given critical moment. The critical moment used in the current demographic statistics is 31.12. of the respective year.

The population number and structures at the end of each year are calculated on the basis of the population data for the preceding year and the data for natural and mechanical movement of the population during the current year.

In the census years recalculations of the population are made as of the end of the respective and previous year. The recalculations are based on the census results and the respective calculations of the natural and migration increase, received from the current demographic statistics for the respective year.

The age of the population at the end of the year is calculated as of 31.12. in completed years.

The population at the age of 0 includes live births occurred during the respective reference year only. Live births occurred in previous years, but registered in the reference year, are included in the total number of live births and distributed in the respective population ages.

Main indicators

The number of population and its sub-aggregates represents the actual quantitative amount of these aggregations. They include all persons with present address in Bulgaria.

The demographic indicators are calculated on the basis of average annual population. The average annual number of the population is an arithmetical average quantity from the calculated population at the end of the preceding year and the end of the reporting year:

$$\bar{S}_i = \frac{S_{i-1} + S_i}{2}.$$

In the census years the average annual number of the population is an arithmetical average quantity of the recalculated population at the end of the preceding year and the end of the reporting year.

The age structure of the population is a distribution of the population in the different age groups.

The age dependency ratio (V) is the ratio between the number of 'dependent' population (according to the UN methodology - persons aged 0 - 15 and 65 and older) and number of 'independent' population (15 - 64 years). It is calculated in percentage.

$$V\% = \frac{S_{0-14} + S_{65+}}{S_{15-64}} 100$$

The natural increase of population is the difference between the number of live births and the number of deaths during the respective year.

The natural increase rate (k) shows the number of increase (decrease) of population per 1 000 persons. It is calculated (in %) as a ratio between the difference of the number of live

births and deaths (N-M) during the year and the average annual number (\bar{S}_i) of the population during the same year.

$$k_{\text{‰}} = \frac{N - M}{\bar{S}_i} 1000$$

The sex ratio shows the number of women per 1 000 men.

The population structure by place of residence is calculated as percentage of the urban and rural population. Data for the urban and rural population are received in accordance with the status of settlements as of 31.12. of the respective year.

Territorial distribution and data sources

Data on the population are distributed in regional aspect (settlements, municipalities, districts and statistical regions) in accordance with the administrative-territorial division of the country as of 31.12. of the respective year by persons' present address. That address corresponds to the persons' officially declared residence.

Data source for the number of population and the population structures is Information System "Demography" in the National statistical institute.

Population projections

The demographic prognoses (perspective projections of the population) are formal calculations made in condition that certain suggestions about fertility, mortality and migration future development have been adopted. They give an idea of the possible future development of the population in the prognostic period.

Different scenarios are used for the population projections depending on the expected socio-economic development of the country.

- I variant (target): This variant is defined as realistic and prepared according to the EU regulations on the demographic and socio-economic development of Member States.
- II variant (relative acceleration): This variant suggests that the demographic development will be accompanied by favourable socio-economic processes in the country.
- III variant (relative delay): With this variant the population development is prognosticated under hypotheses for unfavourable socio-economic processes in the country.

The last demographic projection elaborated by NSI refers to the population development up to 2080 and is updated in 2018. A starting point of the projection is the population as of 31.12.2016, and the projection takes into account the number of demographic events in 2017. The projected population is distributed by sex and single ages for every year of the projected period. Data are published by five-year age groups and calendar periods.

In 2018, the NSI updated also the demographic projection on the population development by sex and districts in perspective up to 2080. The trends in the long-term population development of the districts by sex and age groups are bound with the respective projections at national level that meets the conception for convergence of the EU countries. By users' request, NSI could supply projections by settlements by sex and age groups, incl. by single ages.