



REFERENCE METADATA

POPULATION GRID 2021 (1000m, 100m), Census 2021

1. Contact Top	
1.1. Contact organisation	NSI, National Statistical Institute of Bulgaria (NSI)
1.2. Contact organisation unit	Multi-Domain Statistics, Methodology and Registers Directorate
1.3. Contact name	Arslan Ahmedov
1.4. Contact person function	Head of Regional Statistics and Geographical Information Department
1.5. Contact mail address	National Statistical Institute 2 P.Volov Str, 1038 Sofia, Bulgaria
1.6. Contact email address	Responsible party: info@nsi.bg Metadata point of contact: aahmedov@nsi.bg
1.7. Contact phone number	+35929857111; +35929857751;

2. Metadata update Top	
2.1. Metadata last certified	29/07/2024
2.2. Metadata last posted	29/07/2024
2.3. Metadata last update	29/07/2024

3. Statistical presentation Top				
3.1. Data description				
Population data at grid level, based on the results from the 2021 EU census collection, following Regulation (EC) 763/2008; Regulation (EU) 2017/543; Regulation (EU) 2017/712 and Regulation (EU) 2017/881 and Regulation EU 2018/1799.				
3.1.1. Resource title				
Population Grid 2021				
3.1.2. Resource abstract				
<p>This spatial dataset contains population data on the selected topics from Census 2021 survey (final results), presented at the level of 1000mx1000m and 100mx100m grid cells.</p> <p>The dataset covers the territory of Bulgaria. Population distribution is based on the place of usual residence at the census reference date (07/09/2021). Values for the total population and for the population categories in grid cells are aggregated from point locations of individual census records.</p> <p><i>Total population in the dataset (allocated on map):</i></p>				
Dataset	Variable definition	Field name	Total population - Number	% from the total for the country
Grid 1000mx1000m	Total population	T	6 461 591	99.1
	Sex-- Male	M	3 105 872	99.0
	Sex - Female	F	3 355 719	99.2
	Age - under 15 years	Y_LT15	913 443	99.5
	Age - 15 to 64 years	Y15_64	4 031 129	99.1
	Age - 65 years and over	Y_GE65	1 517 019	99.0
Grid 100mx100m	Total population	T	6 397 556	98.1
	Sex-- Male	M	3 073 166	98.0
	Sex - Female	F	3 324 390	98.3
	Age - under 15 years	Y_LT15	900 183	98.1
	Age - 15 to 64 years	Y15_64	3 996 370	98.2
	Age - 65 years and over	Y_GE65	1 501 003	97.9



3.1.3. Resource type

Spatial data set series; OGC GeoPackage (gpkg); Geodatabase (GDB)

3.2. Classification system

INSPIRE Geographical grid system, Grid_ETRS89-LAEA, resolution 100m, 1000m

3.3. Coverage - sector

Not applicable.

3.4. Statistical concepts and definitions

'**Total population**' means all persons of a grid cell whose usual residence is located in that grid cell

'**Usual residence**' is the place where a person normally spends the daily period of rest, regardless of temporary absences for purposes of recreation, holidays, visits to friends and relatives, business, medical treatment or religious pilgrimage.

The following persons alone shall be considered to be usual residents of the geographical area in question:

- (a) those who have lived in their place of usual residence for a continuous period of at least 12 months before the reference date;
- (b) those who arrived in their place of usual residence during the 12 months before the reference date with the intention of staying there for at least one year.

Where the circumstances described in point (a) or (b) cannot be established, 'usual residence' shall mean the place of legal or registered residence.

'**Sex**' refers to the biological and physiological characteristics that define men and women.

'**Age**' is the age reached in completed years of age at the reference date.

3.5. Statistical unit

Persons

3.6. Statistical population

Persons enumerated in the 2021 census are those who were usually resident in the territory of the reporting country at the census reference date.

3.7. Reference area

Reference area covers the territory of Bulgaria.

3.7.1. Geographic bounding box

West Bound Longitude:	22.348494
South Bound Latitude:	41.227327
East Bound Longitude:	28.636203
North Bound Latitude:	44.219690

3.7.2. Spatial resolution

1000, 100

Unit:m

3.7.3. Coordinate Reference System

EPSG:3035 - ETRS89 / LAEA Europe

3.8. Coverage - Time

The data refer to the situation in the country at the census reference date: 07/09/2021.

3.9. Base period

Not applicable.

4. Unit of measure

[Top](#)

Number of persons.



5. Reference Period	Top
2021-09-07 T00:00:00	
5.1. Temporal extent	
2021-09-07 T00:00:00	

6. Institutional Mandate	Top
6.1. Institutional Mandate - legal acts and other agreements	
EU implementing regulation 2018/1799 on dissemination of selected topics of the 2021 population and housing census geocoded to a 1 km ² grid; Population and Housing Census 2021 in the Republic of Bulgaria Act	
6.2. Institutional Mandate - data sharing	
Data sharing is arranged according to the 2021 Population Census and Housing Census in the Republic of Bulgaria Act and Rules for dissemination of statistical products and services of the National Statistical Institute .	

7. Confidentiality	Top																							
7.1. Confidentiality - policy																								
The census data privacy policy is implemented on the basis of the 2021 Population Census and Housing Census in the Republic of Bulgaria Act , according to which NSI undertakes to ensure the protection of individual data by applying the relevant organizational and technical means. This includes applying methods to statistically control the disclosure of individual or sensitive data on aggregate statistics that may be linked to identify a particular statistical unit.																								
7.2. Confidentiality - data treatment																								
The data in the 1000m population grid is not sensitive/confidential. Some of the data in the 100m population grid have been identified as confidential and have had additional processing applied to them to statistically control the disclosure of individual or sensitive data.																								
7.2.1. Population grid, 1000m																								
No observation values are suppressed.																								
7.2.2. Population grid, 100m																								
A statistical control method was applied only to grid cells with a population of less than 10 people. Sensitive (confidential) values in these cells are replaced with "-1". Total population - values are not confidential. The remaining gender and age variables were identified as sensitive. Gender variables (Male and Female) With a confidential value of '1' or '2' in either gender variable, both values are replaced by '-1'. Age variables (Under 15, 15-64, 65 and over) With a confidential value of "1" or "2" in one of the three age variables, the values in two of them are replaced by "-1". Population affected by disclosure control method (confidentiality) - %																								
	<table border="1"> <thead> <tr> <th rowspan="2">Variable</th> <th>Population in the dataset</th> <th>Threated</th> </tr> <tr> <th>Number</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>Total population (T)</td> <td>6 397 556</td> <td>0.0</td> </tr> <tr> <td>Sex – Male (M)</td> <td>3 073 166</td> <td>7.4</td> </tr> <tr> <td>Sex – Female (F)</td> <td>3 324 390</td> <td>7.0</td> </tr> <tr> <td>Age – under 15 years (Y_LT15)</td> <td>900 183</td> <td>6.6</td> </tr> <tr> <td>Age – 15 to 64 years (Y15_64)</td> <td>3 996 370</td> <td>2.9</td> </tr> <tr> <td>Age – 65 years and over (Y_GE65)</td> <td>1 501 003</td> <td>10.3</td> </tr> </tbody> </table>	Variable	Population in the dataset	Threated	Number	%	Total population (T)	6 397 556	0.0	Sex – Male (M)	3 073 166	7.4	Sex – Female (F)	3 324 390	7.0	Age – under 15 years (Y_LT15)	900 183	6.6	Age – 15 to 64 years (Y15_64)	3 996 370	2.9	Age – 65 years and over (Y_GE65)	1 501 003	10.3
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8. Release policy	Top
8.1. Release calendar	
The schedule of census release dates.	
8.2. Release calendar access	
https://www.nsi.bg/bg/node/19795	
8.3. Release policy - user access	
<p>The Census data and pressreleases are published on the NSI website and Information System Infostat in accordance with the Law on Statistics, Rules for dissemination of statistical products and services of the National Statistical Institute and the European Statistics Code of Practice.</p> <p>In line with the Community legal framework and the European Statistics Code of Practice, Eurostat disseminates European statistics on Eurostat's website.</p> <p>The grid datasets provided (Population Grid 2021, 1000m and 100m) are subject to NSI's general license policy: License to use statistical information produced and disseminated by the NSI.</p> <p>The datasets or parts of the datasets may not be redistributed or published online (including in GIS or visualization applications) in their original form distributed by NSI.</p> <p>Analytical developments and mapping products, based on the statistical information in the dataset, can be published, but without showing the original values in the individual grid cells.</p> <p>NSI is not responsible for the quality of the information after its reproduction (interpretation), as well as for the purposes for which it is used by the user;</p> <p>When using this statistical product (the data sets), the user is obliged to indicate NSI as the source of the primary information.</p>	
9. Frequency of dissemination	Top
Data from the population and housing censuses are disseminated every decade.	
10. Accessibility and clarity	Top
10.1. Dissemination format - News release	
News releases by Census topics are available on NSI webpage and on Census 2021 webpage .	
10.2. Dissemination format - Publications	
No publications available.	
10.3. Dissemination format - online database	
1. EU CENSUS HUB (Eurostat) 2. Information System Infostat (NSI Bulgaria)	
10.4. Dissemination format - microdata access	
Not applicable	
10.5. Dissemination format - other	
Other dissemination formats are listed in Rules for dissemination of statistical products and services of the National Statistical Institute	
10.6. Documentation on methodology	
In Bulgarian only - Census 2021 webpage	
10.7. Quality management - documentation	
Methodological documents, questionnaires, instructions and reports available on the Census 2021 webpage	



11. Quality management	Top
11.1. Quality assurance	
<p>This dataset represents final population data results of the 2021 Census collection in 1 km square grid for the territory of Bulgaria. Spatial based criteria used when calculating aggregates.</p> <p>Population data is collected during the census period (7. September 2021 – 10. October 2021) via online self-enumeration and door-to-door interviews. The proper application of criteria for place of usual residence is assured by trained enumerators and detailed instructions in online questionnaires.</p> <p>Location data in terms of geographic coordinates (longitude and latitude) of dwelling units were collected by NSI. Dedicated census fieldwork and in-office activities were carried out (using mobile devices and desktop applications) to provide a precise point reference base for the whole territory. Census data were georeferenced to the point locations at the time of collection by the enumerators or during the self-enumeration campaign via tools provided by the e-census platform.</p> <p>High quality of the geographical data is ensured via the use of the latest available national cadastral maps, cadastral data and orthophoto imagery. Geocoding, census mapping and census list production activities are implemented with the collaboration of the local authorities and crossed several validation steps in the preparatory and production stages.</p>	
11.2. Quality management - assessment	
<p>Integrated quality and security management system has been implemented in respect of all Census stages and in accordance with the requirements of BDS EN ISO 9001: 2015 and BDS EN ISO 27001: 2017. The certificate fully meets all international requirements and guarantees the quality of the processes and information security of the entire statistical and information infrastructure of the NSI, both at national and regional levels.</p>	
12. Relevance	Top
12.1. Relevance - User Needs	
<p>The census data are addressed to policymakers, researchers, media and the general public.</p>	
12.2. Relevance - User Satisfaction	
<p>No user satisfaction surveys are carried out.</p>	
12.3. Completeness	
<p>Data are available on all breakdowns of census topics specified in Annex I of the Regulation (EU) 2018/1799 for the 1000m grid.</p>	
13. Accuracy	Top
13.1. Accuracy - overall	
<p>Reliability and accuracy of grid data for the topic 'place of usual residence'</p> <ul style="list-style-type: none">• 37% of the census population is enumerated via online questionnaire. Location of the place of usual residence collected via self-enumeration is subject to additional verification procedures carried out by the enumerators during the fieldwork; Locations pinpointed in self-enumeration checked for consistency with provided by respondents detailed address descriptions;• 54% of the census population is enumerated via paper questionnaire. Proper application of criteria for place of usual residence assured at data collection with trained enumerators;• 9% of the census population are imputed from administrative sources. For these records, the place of residence corresponds to the current address of the persons on the census reference date 7 September 2021, according to national law. The 12-month criterion was not applied.	
13.2. Sampling error	
<p>Not applicable</p>	
13.3. Non-sampling error	
<p>Not applicable</p>	
14. Timeliness and punctuality	Top
14.1. Timeliness	
<p>Census 2021 grid dataset with final results delivered by 31st March 2024 according to the requirements of Reg. (EU) 2018/1799</p>	



14.1.1. Date of publication

31/12/2022

14.1.2. Date of last revision

31/03/2024

14.1.3. Date of creation

31/12/2022

15. Coherence and comparability

[Top](#)

15.1. Comparability - geographical

Data are fully comparable between geographical areas. No difference between the production methods used and definitions applied. No differences in quality of location data collected

15.1.1. Geographic information - data quality

Positional accuracy:

Point locations of dwelling units collected by NSI during pre-enumeration and enumeration activities with the requirement to locate within the building footprint. The position of points verified with the available national cadastral data and high-resolution national imagery.

Locations pinpointed in self-enumeration checked for consistency with provided by respondents detailed address descriptions; Identified errors in location reviewed and corrected where possible.

Temporal coherence:

Census data georeferenced to the point locations at the time of collection by the enumerators or during the self-enumeration campaign via tools provided by the e-census platform - September 7, 2021 - October 10, 2021.

Completeness:

Values for the total population in grid cells are obtained by aggregating from geocoded individual census records.

- 91% of census microdata is georeferenced to the point locations at the time of collection by the enumerators or during the self-enumeration campaign via tools provided by the e-census platform.
- 9% of census microdata is subject of address processing and geocoding to obtain the accurate point location on map.

The population unallocated on map is mainly imputed from administrative sources, as well as identified apparent error locations collected via-self-enumeration and with address descriptions not sufficient to determine precise location.

Unallocated population (1000m grid)

Variables	Total for the country	Unallocated on map	
	<i>Number</i>	<i>Number</i>	<i>%</i>
Total population (T)	6 519 789	58 198	0.9
Sex – Male (M)	3 136 262	30 390	1.0
Sex – Female (F)	3 383 527	27 808	0.8
Age – Under 15 years (Y_LT15)	917 722	4 279	0.5
Age – 15 to 64 years (Y15_64)	4 069 400	38 271	0.9
Age – 65 years and over (Y_GE65)	1 532 667	15 648	1.0

Unallocated population (100m grid)

Variables	Total for the country	Unallocated on map	
	<i>Number</i>	<i>Number</i>	<i>%</i>
Total population (T)	6 519 789	122 233	1.9
Sex – Male (M)	3 136 262	63 096	2.0
Sex – Female (F)	3 383 527	59 137	1.7
Age – Under 15 years (Y_LT15)	917 722	17 539	1.9
Age – 15 to 64 years (Y15_64)	4 069 400	73 030	1.8
Age – 65 years and over (Y_GE65)	1 532 667	31 664	2.1

15.2. Comparability - over time



The Census 2011 population grid data was produced using a combination of aggregation and disaggregation techniques, while the Census 2021 grid data is entirely aggregated from point locations. The two datasets, from 2011 and from 2021, are not fully comparable. Population grid data with 100m resolution is available only for the Census 2021 results.	
15.3. Coherence - cross domain	
Not applicable	
15.4. Coherence - internal	
No differences	
16. Cost and Burden Top	
Census 2021 budget.	
17. Data revision Top	
17.1. Data revision - policy	
National policy allows the revision of already published data if there are serious reasons for doing so.	
17.2. Data revision - practice	
National policy allows the revision of already published data if there are serious reasons for doing so.	
18. Statistical processing Top	
18.1. Source data	
Census 2021 dataset, geocoded to high-precision geographic coordinates of place of usual residence.	
18.2. Frequency of data collection	
Decennial.	
18.3. Data collection	
Geospatial data derived during census survey operations.	
18.4. Data validation	
Consistency checks on aggregated values by categories.	
18.5. Data compilation	
Spatial based criteria used when calculating aggregates. Values for the total population and for the population categories in grid cells aggregated from point locations of individual census records.	
18.6. Adjustment	
Not applicable.	
19. Comment Top	
None.	