

REPUBLIC OF BULGARIA

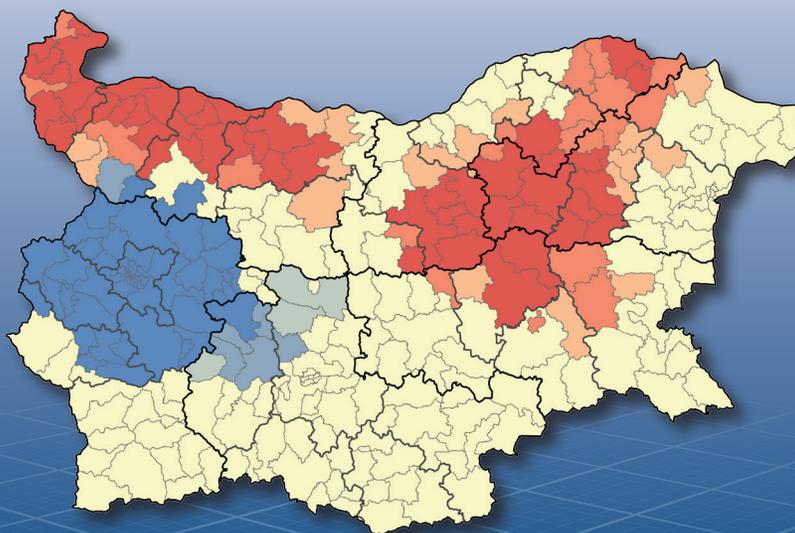


NATIONAL STATISTICAL INSTITUTE

POVERTY MAPPING IN THE REPUBLIC OF BULGARIA



WORLD BANK GROUP





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NATIONAL STATISTICAL INSTITUTE

POVERTY MAPPING IN THE REPUBLIC OF BULGARIA

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Dear readers,

Modern societies are managed based on reliable and timely information. Such information is increasingly demanded in the busy and dynamic economic environment of the twenty-first century. Politicians, economists and analysts need adequate, accurate and timely information to be able to offer practical solutions to businesses and the public.

Statistical institutions face the task to provide information about how our surroundings develop and change. Surveys are the main tool used for obtaining statistical information. Statistical surveys, including sample and exhaustive ones, aim to satisfy the needs for completing or improving the information on specific areas of interests.

Exhaustive surveys aim to gather all the information in a given area. They provide complete, accurate and undisputable information about the units observed. Despite the pros, these surveys have some disadvantages, with one of the biggest being the challenging requirements of time and resources for their conductions.

When the necessary time and resources are not available, sample surveys are used, which can provide timely and effective information. The volume of observed units is considerably smaller than in the case of exhaustive surveys, but the resources required would considerably decrease. Disadvantages of the sample surveys are the statistical errors they are burdened with. Thus, sample surveys provide good estimates for well sampled populations, but not for small subsets.

Modern statistical methods make it possible to overcome such issues of small subsets or small geographical areas, by combining two survey sources. One survey provides strength to the other, and estimates obtained through this methodology are known as small area estimates (SAE). The method uses the matching data from the two surveys as identifiers to transfer the essential information from sample surveys to exhaustive ones using econometric models. The information thus obtained can provide reasonable estimates for small subsets, which cannot be done using sample surveys only. This approach is used in the 'Poverty Mapping in Bulgaria'.

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ABBREVIATIONS

CAWI	Computer Assisted Web Interview
CI	Confidence Interval
ELL	Model proposed by Khris Elbers, Jean Lanjouw and Peter Lanjouw
EU	European Union
GLS	Generalised Least Squares
IBRD	International Bank for Reconstruction and Development
LAU	Local Administrative Units
LPHCRB	Law on Population and Housing Census in the Republic of Bulgaria
NUTS	Classification of Territorial Units for Statistics
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
PAPI	Paper Assisted Personal Interview
PM	Poverty mapping
SILC	Survey of Income and Living Conditions
UN	United Nations

INTRODUCTION

In 2016 the National Statistical Institute and the World Bank started working on the Project ‘Poverty mapping in the Republic of Bulgaria’ (PM). The Project is part of the Government and International Bank for Reconstruction and Development (IBRD) Programme, which is realised by experts of the National Statistical Institute (NSI) and the World Bank (WB).

The Project implemented with the financial support of European Commission through the Europe 2020 Programme Trust Fund (TF0A1034), Project ‘Mapping poverty in the new EU member states’.

The main project objective is to calculate the shares of population at-risk-of-poverty at low territorial levels (districts and municipalities). In Bulgaria, as in other European countries, the Survey of income and living conditions (SILC) is used as the main tool for estimating the population at-risk-of-poverty. The survey ensures the availability of large sets of indicators measuring poverty and living conditions, but due to its nature of being a sample survey, it cannot provide information at low territorial levels like municipalities and settlements.

Small area estimation methods, different from ‘direct’ ones have to be used in order to produce information at low territorial levels. Combining data from sample surveys and additional sources like the population census or administrative data is necessary.

Reference years of the data sources used as a basis for small area estimations have to be as close to each other as possible. Therefore, data from last 2011 Population Census and SILC 2012 (with income reference year 2011) are used. The method used for PM is based on a model proposed by Chris Elbers, Jean Lanjouw and Peter Lanjouw (ELL) and is implemented in the PovMap software, developed by the WB for the poverty mapping purposes.

SAE method, proposed by ELL (2003) is based on a model from which the SAE are produced by simulating multiple vectors of census incomes. It is one of the most widely used small area estimation methods for poverty statistics of lower geographical areas. The estimates are often presented as maps and thus the method was named poverty maps.

I. Data sources

I.1. Survey of income and living conditions (SILC)

The European Survey of Income and Living Conditions (EU-SILC) is part of the European Statistical System and is implemented according to the unified methodology defined by Regulation No. 1177/2003 of the European Parliament and of the Council. The survey was launched in 2003 in six EU countries. In 2004, the survey was expanded to include the 15 Member States. Since 2005, the survey has been conducted in 25 EU countries, including Iceland and Norway. Bulgaria, Romania, Turkey and Switzerland introduced the survey of income and living condition in 2006. In 2015, the survey was conducted in 34 countries, including the 28 EU Member States, FYROM, Ireland, Norway, Serbia, Switzerland and Turkey. EU-SILC is a tool to provide timely and comparable data on income distributions, the level and structure of poverty and social exclusion in the EU. The survey provides two types of annual data:

- Cross-sectional data related to a given time period (year), including information on income, poverty, social exclusion and living conditions, and
- Longitudinal data related to changes in income, poverty, social exclusion and living conditions at an individual level, observed over a four-year period.

SILC is based on an integrated design from a 4-year rotational panel. Rotational design is a group of independent sub-samples, representatives of the entire population. The individual sub-samples have to be identical in volume and design. Between the separate years, some of the sub-samples are tracked again, while others are dropped out and replaced with new ones. After reaching the optimum size/design, each sub-sample remains in the survey for four consecutive years and after that would be replaced by a new one. Thus, each year 25% of the sample is updated. The main feature of the integrated design is the ability to combine the cross-sectional and longitudinal data into one survey and to get information from one and the same sample units.

SILC has been conducted in Bulgaria since 2006. The survey is part of the National Statistical Programme. Bulgaria uses samples based on selection of households¹. The general population used as the basis for the sample comes from the last population census. Two-stage cluster sampling is applied, where samples

¹ Countries are free to choose the sample model. There are two possibilities: selection of households or of persons.

are stratified according to the country's administrative division by districts and the urban/rural typology. There are 28 strata in urban areas and 28 in rural ones. Census enumeration units are used for clusters. The census enumeration units in the respective stratum are selected at the first stage, and at the second one - the households in the respective cluster. The minimum effective sample size is 4 500 households. The target SILC population are the private households and their members living in the country territory at the time of observation. Individuals living in collective households and institutions are excluded from the target population. Units of observations are households and their members. The survey covers the entire territory of the Republic of Bulgaria.

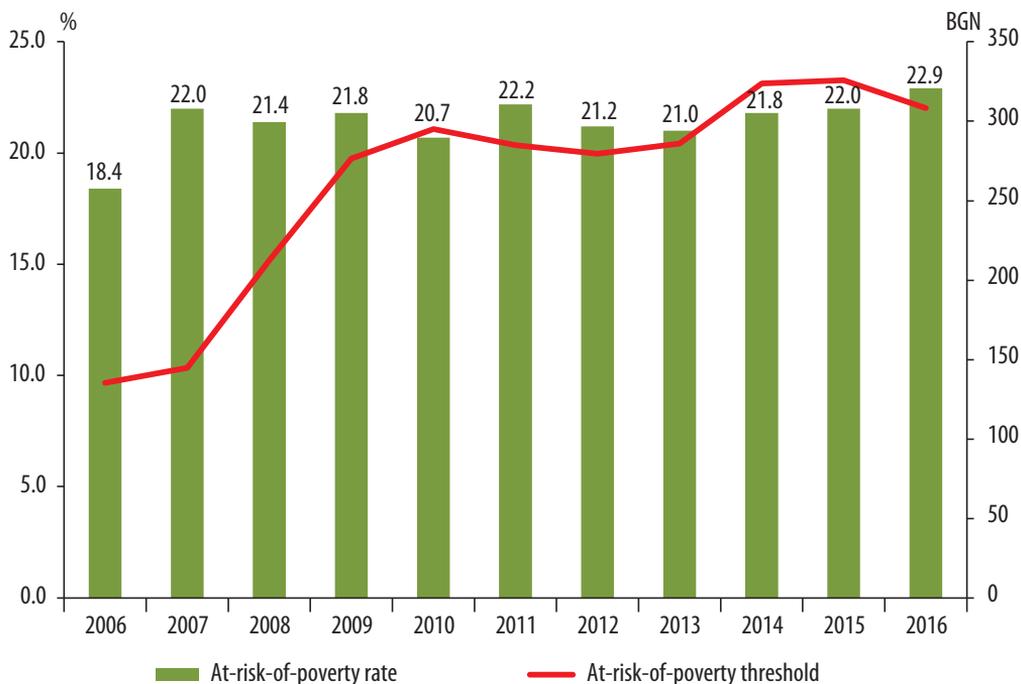
The survey is a main source of information on people at-risk-of-poverty in the country. The relative method is used to assess poverty. According to this method, the poor are considered to be people with income/expenditure lower than a certain percentage of the median equivalised income/expenditure for the observed households. The most commonly used threshold in Eurostat surveys for determining the relative poverty line is 60% of median equivalised disposable income of households.

The income of each separate household is calculated such that individual income of each household member aged 16 and over and household's income as a whole are taken into account. Two basic concepts of total incomes are applied: total gross household income and total disposable (net) household income. The disposable (net) income is obtained as the difference between the total gross household income and the regular taxes and outgoing transfers to other households.

Total Gross Income consists of the following components:

- Gross monetary component of the remuneration;
- Non-monetary component of the remuneration;
- Income of self-employed persons;
- Income from a pension, including voluntary pension insurance;
- Social benefits including unemployment benefits, old-age benefits, survivors benefits, sickness benefits, disability benefits, scholarships;
- Income from lending of movable and immovable property;
- Social benefits, including family and children allowances, target help for housing, targeted help for low income, targeted help for heating, and other;

Figure 1. Poverty line (average monthly size) and relative share of poor in Bulgaria



- Regular transfers received from the household;
- Income from shares, interest, business investment and sale of property;
- Income received from children below 16 years of age.

Regular taxes and outgoing transfers include:

- Regular property taxes;
- Regular transfers provided by the household;
- Income tax and social security contributions.

Total disposable (net) income per equivalent unit is used for calculating poverty indicators. Due to the different compositions and number of persons in the households, equivalent scales are applied. According to the OECD modified scale, the first adult aged 14 years and over is given weight 1, the second and each next adult aged 14 and over 0.5, and each child under 14 is given weight 0.3. Weights given to each member of the household are summed to obtain an equivalent household size. The total disposable (net) income of each household is divided into its equivalent size to obtain the total disposable (net) income of an

equivalent unit. For example, if a household with two adults and two children up to 14 years has net income of 4 200 BGN, the equivalent size of this household is 2.1 and the equivalent disposable income is 2 000 BGN.

Every household with an equivalent income below the poverty line is considered to be poor. Poverty is homogeneous at household level and so all members of the household are considered poor.

Bulgaria is among the countries where the risk of poverty rate is above the EU average, but remains relatively stable at about 1/5 (20 - 22%) of the Bulgarian population. The main factor increasing the risk of falling into the group of the poor for the majority of the population is their economic activity and their participation in the labour market. The share of poor is highest among the unemployed and part-time workers. Poverty estimates by household type indicate that the highest relative share of poor lie among one-person households with a member over 65 years of age, households of single parents with children, and households with three or more children. The social protection system is essential for reducing poverty. If pensions and other social transfers are excluded from the household income, the poverty rate will increase to about 50%.

I.2. Census

Population and Housing Census is the oldest and the most comprehensive study. Its purpose is to provide reliable, exhaustive and, at the same time, sufficiently detailed information on the number and main characteristics of the population, as well as the housing fund in the country at the lowest possible territorial level.

2011 Population and Housing Census is the 17th census in the country history.

For the first time, Bulgaria held a census as a member of the EU and, for the first time, an online questionnaire is used for data collection.

Legal frame

Traditionally, the National Law is developed and adopted for each national census. This was also the case for the 2011 Census as the Law on Population and Housing Census in the Republic of Bulgaria was developed in 2011. The law was adopted by the 40th National Assembly on May 15, 2009 (promulgated SG No. 39 of 26.05.2009) and was amended in 2010 (promulgated SG No. 100 of 21.12.2010). The law establishes conditions for conducting the census, reference dates, census objects, topics on which the data will be collected - mandatory and voluntary, responsible census bodies, sample surveys accompanying the census, conditions for protecting the individual data and methods for estimating the census coverage and quality of the information gathered.

The national law was developed in accordance with the European legal framework governing the conduction of the population and housing censuses in EU Member States, providing quality and comparable data at European level.

Regulation 763/2008 of the European Parliament and of the Council on the Population and Housing Censuses in the EU Member States establishes common rules concerning the basic definitions of census topics, possible data sources and data collection methods, census reference years and deadlines for data transmissions.

In addition, three Commission Regulations were adopted, concerning the technical specifications of the topics and their breakdowns, the population and housing census programme and metadata and the conditions and structures of the quality reports and the technical format for data transmissions.

The recommendations of the Conference of European Statisticians, the UN Economic Commission for Europe on the Population and Housing Census - 2010 round are also taken into account in the development of national and European legal framework.

Data sources and data collection methods

Census 2011 in Bulgaria was conducted as a traditional census. Data on persons, households and housing conditions of the population refer to the reference date 1 February 2011. The main data source was the census questionnaire, using two data collection methods:

- on-line interview (CAWI) - 1 to 9 February 2011 - self-interview through on-line questionnaire;
- paper interview (PAPI) - 10 to 28 February 2011 - personal interview with interviewer.

The main task in preparing the census tools was to ensure the comparability with the previous censuses' results and data comparability at the international level. In addition, the developed census tools were tested by a pilot census conducted in September 2010 and was consulted and coordinated with various government administrations, organizations, data users and others.

The results of the two methods did not show any significant deviations from the definitions, units and classifications used. The data collected on all the topics are comparable at regional and European levels, meeting the necessary quality requirements set out in Commission Regulation No. 1151/2010 on the conditions and structure of quality reports and the technical formats for data transmissions.

Following the 2011 Census Law (LPHCRB) provisions, information from the following administrative registers was used to check the census coverage and applications of usual residence definition:

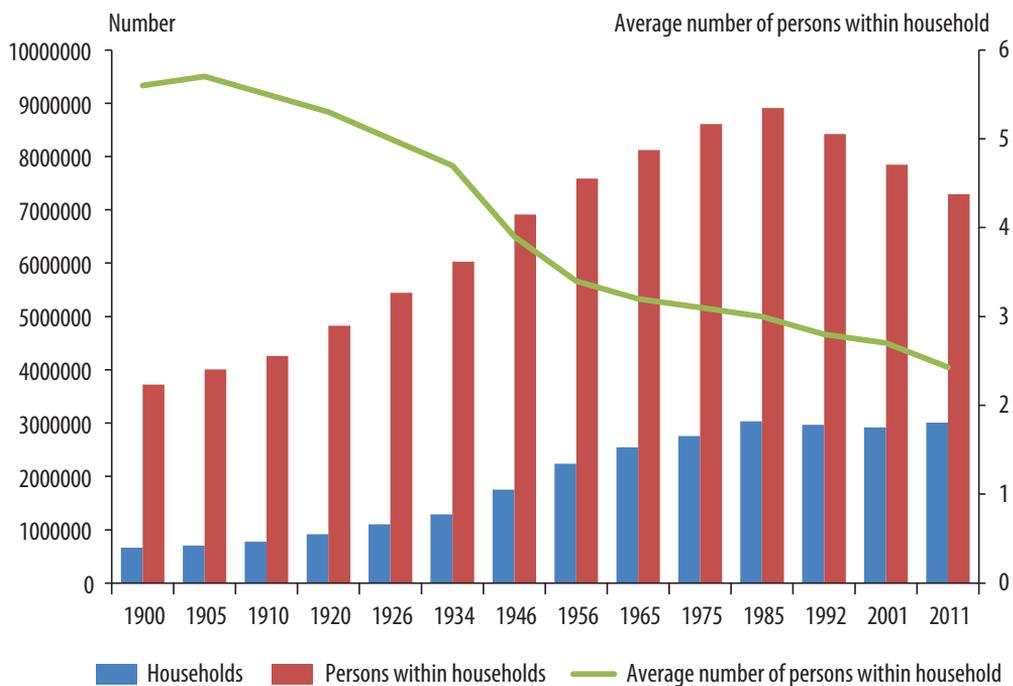
- Register of Insured Persons;
- Register of pensioners;
- Register of unemployed persons insured;
- Register of children and students in pre-school and school education;
- Register of all active students and students who interrupted their study, PhD students;
- Information System Demography.

Units of observation

During the census, information is collected on basic characteristics of the following units:

- Persons - subject to observation are all persons whose usual residence at the critical moment of the census is in the territory of the country;
- Households - all private and institutional households;
- Dwellings - the object of observation are dwellings in residential buildings, no matter if there are households or persons living there; Dwellings in non-residential buildings in which one or more households live permanently at the time of census; Dwellings in primitive and mobile buildings; Dwellings in students/workers dormitories; Collective dwellings;
- Buildings - subject to observation are only residential buildings in which households and persons are usually living or nobody is living there, but are fit for living, incl. newly built buildings.

Figure 2. Households, persons in households and average number of members per household by census years



II. Project poverty mapping

The production of poverty maps, based on small area estimates, relies on two data sources. A data set referred to as the source data, which serves as the data set used for the modelling stage. Ideally this data source is the main source used for welfare statistics in the country. The second source is referred to as the target data set. This is usually the country's national census. Small area estimates rely on the assumption that both data sources cover one and the same target population and time period.

In the case of Bulgaria, the source for official statistics on income distribution, poverty and social exclusion is the Survey of Income and Living Conditions (SILC). Consequently, the Bulgarian SILC for 2012 is used. Incomes reported in the 2012 SILC correspond to the 2011 income year, and thus is an ideal data set for the analysis. The target data set used is the Population and housing census in the Republic of Bulgaria 2011.

II.1. Main stages

Poverty mapping goes through several stages:

At the first stage, a comparison between the observable household characteristics (variables) from the SILC and the census is done. The purpose of the comparison is to ensure that variables have similar distributions, and that these have similar definitions across data sources. Because the exercise consists in simulating welfare in the census data using parameters obtained from SILC observed characteristics, it is imperative that the observed characteristics across data sources are comparable. The selection of candidate variables is done in a two-stage process:

- Comparison of questionnaires between the SILC and the Census, as the candidate variables must come from similar questions. The comparison yields a first set of candidate variables for the estimation.
- Comparison of the distribution of the candidate variables across datasets.

Next to the comparison of both surveys questionnaires, the common questions were identified connected to the population demographic characteristics, economic activities, dwelling conditions and parts of material situations of the household. As both surveys are conducted based on European regulations, there is a correspondence between the definitions and variables used.

Comparisons done between distributions of variables in SILC 2012 and the Census show some discrepancies. The most considerable was the discrepancy in the distribution of households according to the number of their members.

Tables 1 and 2 show the household structure from both surveys by years.

Table 1. Households' structure by number of members according to the censuses

HH by number of members	1946	1956	1965	1975	1985	1992	2001	2011
One member	10.4	17.7	17.0	16.8	18.2	19.7	22.7	30.8
Two members	13.6	15.9	20.7	23.3	26.7	28.0	28.4	28.4
Three members	19.2	20.6	21.6	21.0	20.3	20.4	21.6	20.2
Four members	21.9	21.2	21.1	21.1	21.5	20.4	18.0	13.4
Five members or more	34.9	24.7	19.6	17.8	13.3	11.5	9.3	7.2
Total	100							

(Per cent)

Table 2. Households' structure by number of members according to SILC

HH by number of members	2008	2009	2010	2011	2012	2013	2014	2015
One member	18.4	19.1	19.5	19.9	21.5	22.8	24.3	28.8
Two members	27.2	27.4	27.8	26.7	28.7	28.8	28.9	28.5
Three members	23.0	21.7	20.3	20.4	20.4	21.7	21.3	20.5
Four members	17.1	18.6	19.3	19.2	18.3	17.3	16.8	15.1
Five members or more	14.3	13.2	13.2	13.8	11.1	9.4	8.7	7.1
Total	100	100	100	100	100	100	100	100

(Per cent)

The discrepancy in the share of households between both data sources is in large part due to the fact that the SILC 2012 sampling frame is based on two Censuses. Three rotational groups or 2/3 of the SILC 2012 were drawn from the 2001 Census's sample frame, and only one rotational group was drawn from the 2011 Census's sample frame. Furthermore, the weighing procedure applied to the SILC is integrative calibration, where the total number of households in the country is not taken into consideration. Another aspect of the Bulgarian SILC is that many institutional dwellings, particularly student dormitories have not been included into the sample.

To overcome the discrepancies in the distribution of common variables between both surveys the following is done:

First, the following are removed from the Census dataset:

- all institutional houses;
- persons counted in student dormitories;
- persons added from administrative sources (due to lack of part of information on dwelling conditions and some households' characteristics).

Second, the data on households from both data sources is linked based on person's PINs (Personal Identification Number). The last is done to use the Census data on households with same composition into the modeling of income process. Roughly two thirds of the SILC households were matched to their Census responses. The sample was not entirely matched due to discrepancies in household compositions, results of the different time frames of the fieldwork for each data source. Although the two surveys relate to the same year, the Census was conducted in February 2011, while SILC in March - May 2012. Any difference of this type would, in any case, lead to a partial change in some of the household characteristics, including their compositions.

Additionally, SILC weights are re-calibrated to consider the total number and compositions of households in the country. As a result, the poverty line is changed from 3 356 BGN to 3 236 BGN per year. Table 3 presents the results achieved.

Table 3. Comparison of data produced by PM Project and official SILC 2012

Statistical regions	SILC (linked)		SILC	
	Poverty line (BGN)	Relative share (%)	Poverty line (BGN)	Relative share (%)
Total	3236	22.7	3356	21.2
Severozapaden	3236	29.9	2744	20.1
Severen tsentralen	3236	24.4	3066	20.2
Severoiztochen	3236	25.0	3279	22.5
Yugoiztochen	3236	28.9	3179	22.0
Yugozapaden	3236	11.6	4052	18.0
Yuzhen tsentralen	3236	27.3	3148	23.4

Share of poor differs, to a certain extent, between the official SILC data and SILC (linked). The published official results of the SILC 2012 examine the different statistical regions, independently of each other. When calculating the poverty lines for each region, the same method is applied as for the poverty line at the national level, a.k.a. 60% of the average total disposable (net) household income in the area concerned. Every household in the region with incomes below the poverty line for the region concerned is considered poor. In Poverty Mapping, the relative share of the poor in different regions is determined by the national poverty line for the whole country and not by the regional poverty lines. This is clearly seen in Table 3, where the relative share of the poor in the Severozapaden region is 20.1% at the regional poverty line of 2 744 BGN and 29.9% at the use of the country poverty line of 3 236 BGN.

Table 4 presents the comparisons between the different variables from the different sources after procedures of linking and weighing data.

Table 4. Weighted averages of the candidate variables

	Census	SILC	SILC (linked)
Share of adults unemployed	0.46	0.49	0.49
Share of members who are children	0.13	0.14	0.14
Share of members who are adults	0.68	0.73	0.70
Share of members who are elderly	0.19	0.13	0.17
Number of males	1.63	1.69	1.69
Primary education share	0.08	0.07	0.08
HH size 1	0.10	0.12	0.12
Household size	3.30	3.37	3.36
HH head is male	0.78	0.73	0.74
Number of married members	1.48	1.51	1.48
Number of members employed as managers	0.11	0.07	0.08
Number of retired members in HH	0.64	0.54	0.55
HH owns washing machine	0.81	0.84	0.83
Number of widows in the HH	0.23	0.25	0.24
Lower secondary education share	0.24	0.23	0.24
Upper secondary education share	0.22	0.19	0.19
Tertiary education share	0.46	0.50	0.49
Head's main income is labor	0.51	0.43	0.49
Head's main source of income is retirement	0.34	0.40	0.36
HH member employed in manuf., prof., or technical	0.27	0.27	0.26
Number of rooms in dwelling	3.10	3.12	3.12
Dwelling has central heating	0.23	0.20	0.21
Dwelling has a toilet	0.73	0.77	0.75
HH owns a phone	0.91	0.93	0.93
HH owns car	0.54	0.58	0.56
HH owns computer	0.55	0.58	0.56

SILC data quoted in the following publication chapters concern SILC (linked).

II.2. Modeling

Small area estimates of welfare are based on a model using regression analysis, which models the relationship between the household income and its characteristics. The data on which the regression equation parameters are estimated usually comes from representative sample surveys (in this case SILC 2012), which do not allow poverty estimates to be obtained at low regional levels (municipalities, settlements, etc.). Therefore, a two-stage¹ approach is used to overcome this disadvantage.

At the first stage, data from sample survey (SILC 2012) is used to estimate the parameters of a regression equation, with dependent variable being income and factors being different household characteristics, via ordinary least squares (OLS). A logarithmic model of an adult equalized income is conducted using the generalized least squares estimates (GLS). The transformation to logarithmic income is done because the income is not symmetrically distributed, and the use of a logarithm of income leads to a more symmetric data distribution.

The household income model is:

$$\ln y_{ch} = X'_{ch} \beta + u_{ch},$$

where y_{ch} is the adult equivalized income of household h in locality c , X_{ch} - are the household and locality characteristics, and u_{ch} is the residual. In the specified model the outcomes of households within a same municipality are usually not independent from one another and the following specification is used to account for this:

$$u_{ch} = \eta_c + \varepsilon_{ch},$$

where η and ε are assumed to have mean zero and to be independent from each other.

At the second stage, data from the exhaustive survey (Census 2011) are used, but only for the indicators that formed the set of factors in the regression equation of the first stage. The requirement is that these indicators have methodological comparability at the two data sources - SILC and Census 2011. The aim is, based on the received at the first stage estimates of the parameters of the regression equation, to obtain an estimate of the dependent variable for each of the households from the exhaustive study. Subsequently, the estimates thus obtained are aggregated to the required regional or other level, and estimates of poverty and inequality are obtained.

¹ Model proposed by Chris Elbers, Jean Lanjouw and peter Lanjouw (ELL).

Since the income of households that are territorially close (in a settlement, municipality, etc.) are not independent, it is necessary to use simulations to obtain multiple estimates of the income of a household that are subsequently averaged and this represents the final assessment. The simulations use as input parameters the estimates of the parameters of the regression equation of the first stage, as well as their standard errors.

The value of the logarithmic equivalised adult income \tilde{y}_{ch} for each household is simulated by the use of β , η and ε the parameters of the first stage, where each simulation r is equal to:

$$\tilde{y}_{ch}^r = \exp(X'_{ch}\tilde{\beta}^r + \tilde{\eta}_c^r + \tilde{\varepsilon}_{ch}^r).$$

After the initial testing/simulation of the model was decided, the modelling of SAE for Yugozapaden region (NUTS2:BG41) is done separately from the rest of the country. The reason for this division is the significant difference in economic and social development between the mentioned region and the rest of the country. Yugozapaden region includes Sofia (stolitsa) and is the richest region in the country. Household income in this region is significantly different from household income in the rest of the country. This difference may lead to significant deviations in the modelling results, and that is the reason to include various variables related to well-being into the model for the separate country regions.

The modelling results for the two sub-sets are presented in Tables 5 and 6.

Table 5. Welfare Model for Yugozapaden region (BG41)

Variables related to well-being	OLS		GLS	
	Regression coefficients	Standard error	Regression coefficients	Standard error
Share of adults unemployed (15 - 64 years)	-0.765***	0.11	-0.788***	0.096
Share of children	-0.681***	0.125	-0.747***	0.11
Lower secondary education share	-0.264***	0.058	-0.255***	0.052
Primary education share	-0.451***	0.115	-0.452***	0.098
Heating Central	0.115***	0.039	0.108***	0.037
HH size 1	-0.497***	0.046	-0.504***	0.043
HH size 2	-0.131***	0.041	-0.133***	0.037
Settlement share of households with working individuals	0.726***	0.154	0.732***	0.137
HH member employed in manuf., prof., or technical	0.329***	0.042	0.307***	0.037
Number of retirees	-0.089***	0.026	-0.076***	0.023
Rooms 1	-0.113*	0.066	-0.106*	0.058
Rooms 2	-0.077**	0.039	-0.083**	0.036
Municipal average salary	0.000***	0.000	0.000***	0.000
Household has a student	-0.249***	0.052	-0.252***	0.046
Constant	8.261***	0.105	8.229***	0.098
Adjusted R2		0.439		
Eta Ration		0.027		
Observations		1585		

* Significant at 0.90 percent level.

** Significant at 0.95 percent level.

*** Significant at 0.99 percent level.

Households having inconsistent labour information are excluded.

The Yugozapaden region model (Table 5) includes mainly variables related to the employment and education of household members, as they have a direct impact on the equivalent income. Another important correlate included in the model is the average wage at the municipal level.

The model for the rest of the country, presented in Table 6, includes significantly more variables on the housing and households characteristics. A larger number of territorial variables are also used to better address the income disparities at the municipal level.

In addition to the number of correlates included in the model for the rest of the country, another significant difference is that for the Yugozapaden region the characteristics of the household head are not related significantly to the income. Reasons may be both higher economic development, providing more opportunities, as well as the chance households to have more than one income-earning member.

Table 6. Welfare Model for Bulgaria without Yugozapaden region (BG41)

Variables related to well-being	OLS		GLS	
	Regression coefficients	Standard error	Regression coefficients	Standard error
Share of adults unemployed***	0.377***	0.045	0.407***	0.044
Share of members (0 - 4 years)***	-0.374***	0.144	-0.431***	0.131
Share of members (5 - 14 years)***	-0.421***	0.087	-0.495***	0.080
Household owns car***	0.104***	0.024	0.103***	0.022
Household owns computer***	0.097***	0.026	0.091***	0.023
Lower secondary education share***	0.130***	0.041	0.130***	0.039
Upper secondary education share***	0.448***	0.052	0.448***	0.049
Tertiary education share***	0.252***	0.043	0.239***	0.042
Number of females***	-0.076***	0.016	-0.066***	0.015
Head's main income is labour***	0.176***	0.034	0.158***	0.035
Head's main source of income is retirement***	0.173***	0.039	0.156***	0.038
Heating central**	0.069**	0.030	0.057**	0.026
Household size 1***	-0.141***	0.030	-0.135***	0.029
Household head is male**	0.088***	0.028	0.093***	0.026
Share of households with retirees (Lau2)***	0.327***	0.112	0.436***	0.111
Share of households with students (Lau2)***	0.655*	0.339	0.921***	0.356

(Continued and end)

Variables related to well-being	OLS		GLS	
	Regression coefficients	Standard error	Regression coefficients	Standard error
Household member employed in manuf., prof., or technical***	0.135***	0.034	0.128***	0.028
Number of married members***	0.044***	0.014	0.055***	0.013
Average share of members with tertiary education (Nuts3)***	-1.512***	0.346	-1.356***	0.423
Number of members employed as managers***	0.126***	0.043	0.123***	0.035
Household owns a phone***	0.153***	0.034	0.113***	0.033
Household has a retired member***	0.102***	0.035	0.101***	0.033
Dwelling has 1 room***	-0.115***	0.043	-0.110***	0.042
Municipal average salary***	0.000***	0.000	0.000***	0.000
Dwelling has a toilet***	0.109***	0.026	0.089***	0.024
Household has an unemployed member***	-0.126***	0.031	-0.115***	0.033
Household owns washing machine***	0.098***	0.026	0.071***	0.025
Number of widows in the household	0.087***	0.027	0.088***	0.025
Share of workers in the South***	0.127***	0.035	0.112***	0.036
Constant***	7.169***	0.121	7.151***	0.128
Adjusted R2		0.45		
Eta Ratio		0.0284		
Observations		4061		

* Significant at 0.90 percent level.

** Significant at 0.95 percent level.

*** Significant at 0.99 percent level.

Households having inconsistent labour information are excluded.

All variables show expected relationships and dependencies with the equivalent income. Among the most pronounced are education, labour force characteristics including unemployment rate, average wage, employment by type of activity, and possession of durables.

III. Poverty mapping results

Estimations of all model parameters allow simulation of income on the census data. Values of the distributions of each parameter are derived randomly. Using these values on the census data, 100¹ simulated disposable incomes for each household in the country are obtained. Based on thus obtained simulated incomes, it is possible to produce poverty estimates for each separate territory (region, district, municipality). The calculated relative share of the poor for each territory is the average value of all 100 simulated relative shares, while the standard error is the standard deviation from the respective values.

The poverty mapping results are based on SILC direct estimates (linked for the project purposes) and the poverty line of BGN 3 236 is used to measure the share of the poor. Table 7 shows the direct and SAE estimates at the NUTS2 and at the national level. Validations of the quality of poverty estimates is carried out at the NUTS2 level, which is considered to be sufficiently accurate.

Table 7. Poverty Rates from SILC (linked) and SAE

Statistical regions	Direct estimates			Small Area Estimates		
	Estimate	95% CI		Estimate	95% CI	
Severozapaden	29.9	25.1	34.7	31.8	29.2	34.4
Severen tsentralen	24.4	19.7	29.0	26.8	24.4	29.3
Severoiztochen	25.0	20.9	29.1	25.9	23.2	28.6
Yugoiztochen	28.9	20.5	37.3	26.8	24.3	29.3
Yugozapaden	11.6	9.3	14.0	12.7	11.0	14.4
Yuzhen tsentralen	27.3	21.9	32.7	26.0	24.1	28.0
Bulgaria	22.7	20.6	24.7	23.1	21.9	24.3

(Per cent)

¹The goal is to obtain a sufficient number of simulations so that reliable estimates of poverty to be produced.

The estimate at the national level differs by approximately 0.4 percentage points, or generally there is a very good match between the SAE and direct estimates. Figure 3 illustrates the direct poverty estimates at the NUTS2 level in the cartographic form.

Figure 3. Direct (based on SILC (linked) poverty estimates at NUTS2 level

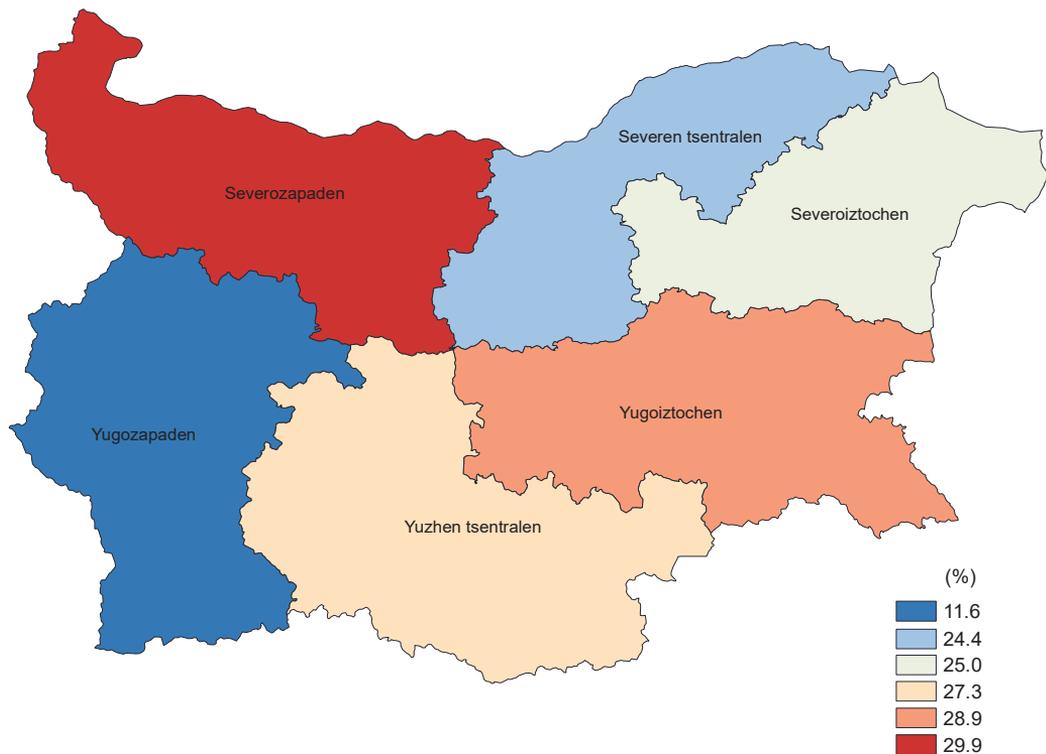


Table 8 presents estimates of poverty by districts. At this territorial level appears the discrepancies in distributions of the poor compared to the statistical regions.

Table 8. NUTS3 level Poverty Estimates

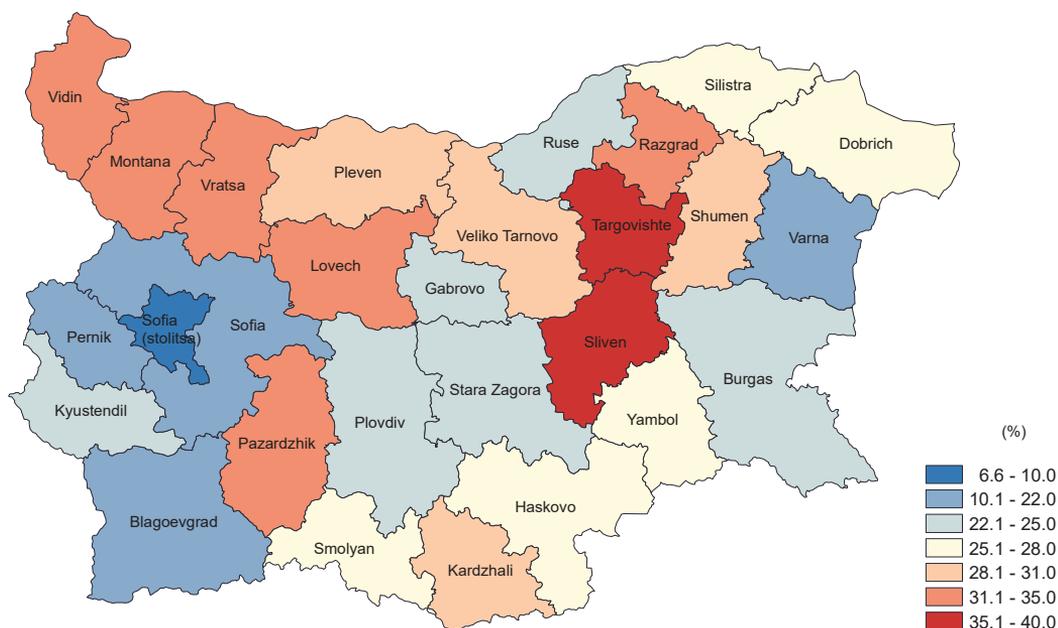
NUTS2	SILC direct estimates			NUTS3	Population in numbers	Small Area Estimates		
	AROP, per cent	95% CI, per cent				AROP, per cent	95% CI, per cent	
Severozapaden	29.9	25.1	34.7	Vidin	97160	34.1	28.0	40.1
				Vratsa	180112	31.1	27.3	34.9
				Lovech	136891	34.2	30.1	38.4
				Montana	142991	31.6	25.9	37.3
				Pleven	260521	30.2	26.0	34.3
Severen tsentralen	24.4	19.7	29.0	Veliko Tarnovo	241370	29.4	25.8	33.0
				Gabrovo	118068	24.7	19.0	30.4
				Razgrad	120971	31.5	26.0	37.0
				Ruse	227542	23.2	17.6	28.7
				Silistra	115808	26.0	20.7	31.3
Severoiztochen	25.0	20.9	29.1	Varna	454631	21.0	18.1	23.9
				Dobrich	182829	27.6	22.6	32.5
				Targovishte	116711	36.1	29.4	42.7
				Shumen	173237	30.3	25.7	34.8
				Burgas	398950	23.9	20.1	27.8
Yugoiztochen	28.9	20.5	37.3	Sliven	189920	38.7	32.4	45.0
				Stara Zagora	319466	22.9	19.1	26.7
				Yambol	126945	27.9	23.4	32.4
				Blagoevgrad	311149	21.5	16.9	26.2
				Kyustendil	132082	23.2	18.0	28.3
Yugozapaden	11.6	9.3	14.0	Pernik	129037	21.9	16.0	27.9
				Sofia (stolitsa)	1185651	6.6	4.6	8.6
				Sofia	240477	20.4	16.7	24.1
				Kardzhali	147045	30.0	24.7	35.4
				Pazardzhik	265764	33.1	28.2	37.9
Yuzhen tsentralen	27.3	21.9	32.7	Plovdiv	654497	22.1	20.1	24.1
				Smolyan	118357	27.7	22.7	32.8
				Haskovo	237871	25.8	22.0	29.5

AROP - relative share of poor from the total population.

Data in the table show that there are districts with high relative share of poor in regions with relatively low ones, and vice versa - for example, in district Pazardzhik the relative share of poor is 33.1%, while the region it is located (Yuzhen tsentralen) is not so poor. The districts in Severozapaden region where the relative share of poor is the highest do not have the highest shares of poor. The two districts with the highest relative share of poor, Targovishte and Sliven, are respectively in Severen tsentralen and Yugoiztochen region.

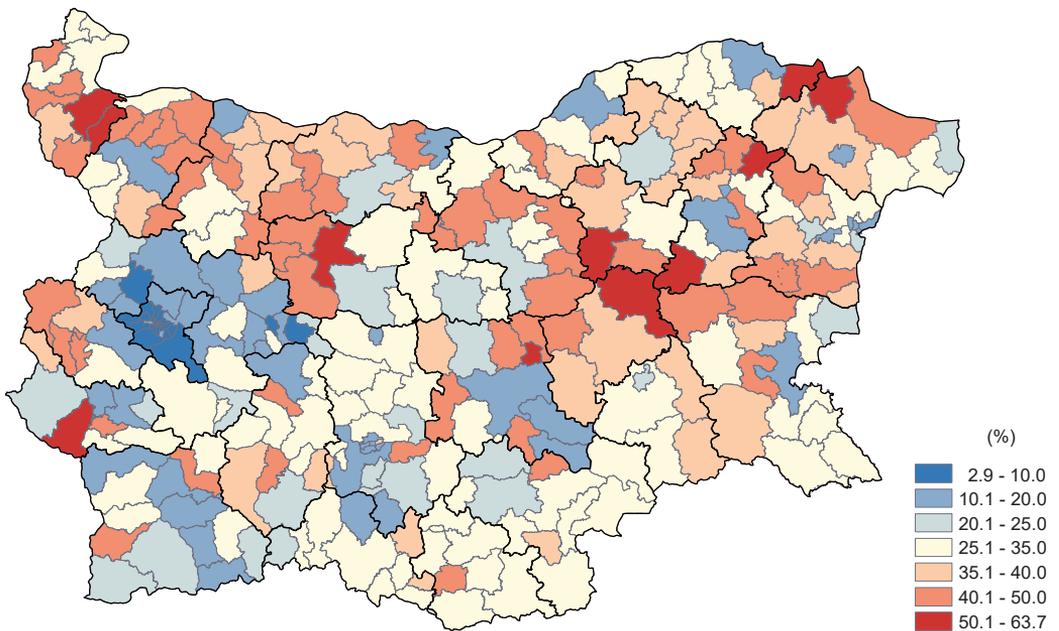
Map of poverty by districts is presented in Figure 4.

Figure 4. SAE of Poverty (NUTS3 level)



At the municipal level, the heterogeneity of poverty is better pronounced. Figure 5 presents the relative share of poor by municipalities. Similar results to those from the NUTS2 level data are also seen here. There are municipalities that are among the less poor located in the poorest country region of the country (Severozapaden), while municipalities which are among the poorest are located in the Yugozapaden region, where the relative share of poor is lowest.

Figure 5. SAE of Poverty (LAU1)



Poverty mapping results show that in northern Bulgaria, concentration of municipalities with high relative share of poor is higher.

Table 9. Distribution of municipalities by relative share of poor (SAE data)

Share of poor	Municipalities in number ¹	Share of population	Cumulative share of population
Up to 15%	39	26.4	26.4
15 - 25%	57	32.3	58.7
25 - 35%	90	23.0	81.7
35 - 45%	75	14.2	95.8
Over 45%	36	4.2	100.0
Total	297	100.0	

¹ There are 264 municipalities in Bulgaria at 31.12.2010. 297 is the number of municipalities with the districts of big cities - Sofia, Plovdiv and Varna. The villages in the municipality of Varna (Zvezditsa, Kazaschko, Kamenar, Konstantinovo and Topoli) are reviewed as separate territorial unit.

III.1. Poverty by statistical regions

According to the territory and administratively Bulgaria is divided into six statistical regions, 28 districts and 264 municipalities. To obtain a detailed and complete picture of the poverty dimensions, the project results are presented for each of the statistical regions, along with the districts and municipalities included within its borders. Two main aspects of the phenomenon are examined: the relative share of poor or the ratio of persons living below the poverty line to the population of the respective territorial unit and the absolute number of poor.

Severozapaden region

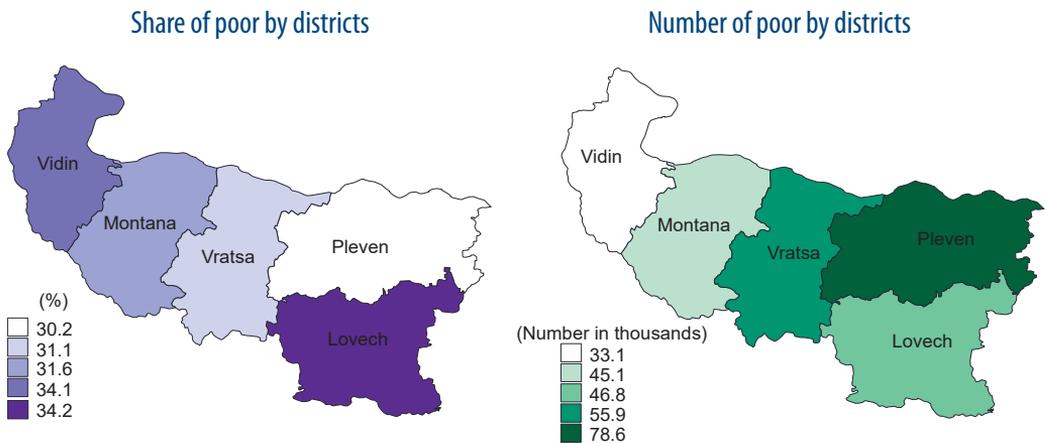
Severozapaden region includes districts of Vidin, Vratsa, Lovech, Montana and Pleven. At the end of 2011 its area is 19 070.3 sq. km and the population is 837 thousand. This is the least populated region in the country (43.9 people per sq. km). There are 529 000 people living in the urban areas, or 63.2% of the total population, and the share of rural population is the highest in the country (37%). The highest in the number of population is district Pleven (267 thousand) and lowest is district Vidin (99 thousand). In 2011, Severozapaden region is at the last place in the country according to the GDP ranking, with BGN 5 824 million, and has the highest share of poor (source SILC 2012 (linked) with 29.9% of the population in the region.

Poverty mapping results show that the highest in the share of poor is district

Lovech with 34.2%, followed by district Vidin with 34.1%. The last two districts are among the poorest five districts in the country. The relative share of the poor in district Pleven is 30.2%. In all districts within the region the relative share of poor is higher than the country average.

In absolute figures, district Pleven has the highest number of poor with almost 80 thousand, district Vidin has the lowest with nearly 33 thousand.

Figure 6. Severozapaden region (BG31)



There are 51 municipalities in Severozapaden region, and 18 of them, or 35% are among the poorest 50 municipalities in the country. Moreover, in three of these municipalities the share of poor is more than half of the population of the respective municipality. These are Ruzhintsi and Dimovo (district Vidin) and municipality Ugarchin (district Lovech). However, there are municipalities in the region with a significantly lower share of poor compared to the others. These are municipality of Chiprovtsi and Montana (district Montana), Vratsa, Mezdra and Kozloduy (district Vratsa), Lovech, Apriltsi and Troyan (district Lovech), Plevan and Belene (district Plevan) and municipality of Vidin. Three of them (Kozloduy, Montana and Belene) are among the fifties municipalities with the lowest share of poor in the country.

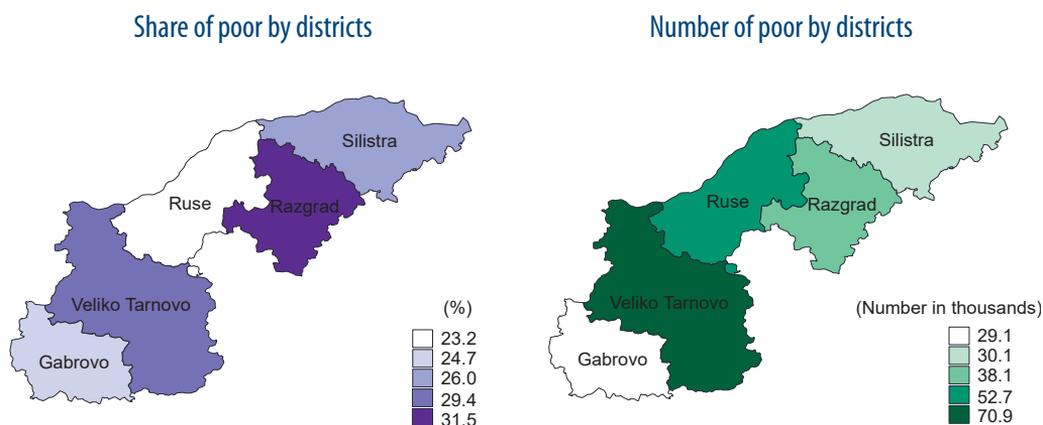
Severen tsentralen region

Severen tsentralen region includes the districts of Veliko Tarnovo, Gabrovo, Razgrad, Ruse and Silistra. At the end of 2011 its area is 14 974.0 sq. km and the population is 853 thousand people. This is the third least populated region in the country after Severozapaden and Yugoiztochen, with a population density of 57.0 people per sq. There are 569 thousand people living in urban areas or 66.6% of the population. Population is the highest in the district Veliko Tarnovo (256 thousand), and the smallest in the district of Silistra (118 thousand). In 2011, the GDP of Severen tsentralen region is BGN 6 360 million, and the share of the poor (source SILC 2012 (linked) is 24.4% of the region's population.

According to the project results, the district with the highest relative share of population living below the poverty line is Razgrad (31.5%) and with the lowest - Ruse (23.2%). As a whole, the share of poor in all district of the region is higher than the country average.

The absolute number of poor is highest in district Veliko Tarnovo, over 70 thousand people. The district with the lowest number of poor is Gabrovo.

Figure 7. Severen tsentralen region (BG32)



Severen tsentralen region includes 36 municipalities and in eight of them the relative share of poor is higher than 40%. These are the municipalities: Borovo (district Ruse), Kaynardzha (district Silistra) and six of the ten municipalities of district Veliko Tarnovo - Pavlikeni, Elena, Polski Trambesh, Suhindol, Strazhitsa and Zlataritsa.

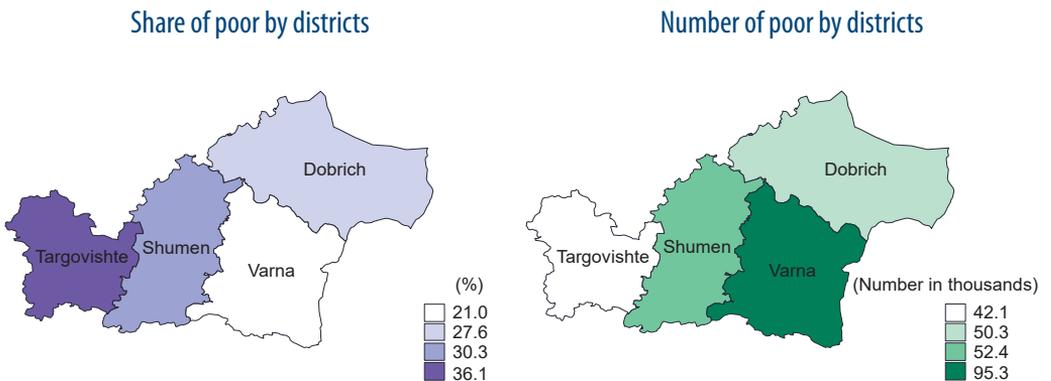
In four municipalities the relative share of poor is lower than the country average. These are the municipalities of Razgrad, Veliko Tarnovo, Ruse and Silistra. These municipalities are among the fifty municipalities in the country with the lowest relative share of the population at risk of poverty.

Severoiztochen region

Severoiztochen region includes the districts of Varna, Dobrich, Targovishte and Shumen. At the end of 2011 its area is 14 487.4 sq. km and the population is 962 thousand people. This is the region with the smallest area and the population density is 66.4 persons per sq. km. In urban areas live 704 thousand persons or 73.2% of the region's population. Population is the largest in district Varna (474 thousand), and the smallest in district of Targovishte (120 thousand). In 2011 the GDP of the Severoiztochen region is BGN 8 615 million, and the relative share of poor (source SILC 2012 (linked) is 25.0% of the population.

According to the project results, the highest is the relative share of poor in district of Targovishte (36.1%), which puts the district at the second place in the country after district of Sliven. In district Varna, the relative share of the poor (21.0%) is the lowest in the region and is at the same time one of the lowest for the country. On the other hand, taking into account the number of the poor, around 40% of all the poor in the region are concentrated in district Varna, with over 95 thousand persons. The lowest is this figure in district Targovishte with 42 thousand.

Figure. 8. Severoiztochen region (BG33)



Severoiztochen region includes 35 municipalities, 10 of which are among the 50 municipalities in the country with the highest relative share of poor. In seven of them the relative share of poor is over 45% of the respective population. These are municipalities of Varbitsa, Venets, Nikola Kozlevo (district Shumen), Antonovo (district Targovishte), Krushari (district Dobrich), Dolni Chiflik and Dalgopol (district Varna).

In five municipalities the relative share of poor is lower than the country average: Varna, Beloslav, Devnya (district Varna), Dobrich (district Dobrich) and Shumen (district Shumen).

With regard to the absolute number, the number of people living below the poverty line is the highest in the municipalities of Varna, Shumen, Targovishte, Popovo (district Targovishte) and Dobrich. In these municipalities the number of poor exceeds 10 thousand and in the municipality of Varna there are almost 50 thousand.

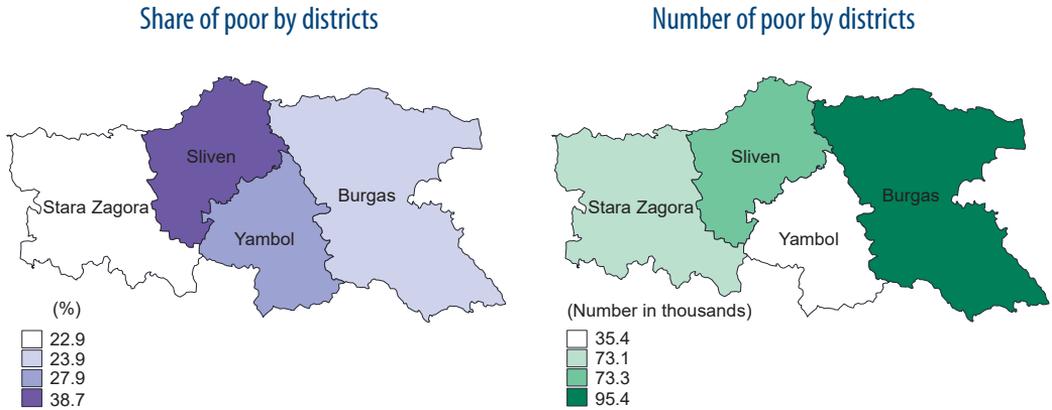
Yugoiztochen region

Yugoiztochen region includes the districts of Burgas, Sliven, Stara Zagora and Yambol. At the end of 2011 its area is 19 798.7 sq. km and the population - 1 073 thousand. This is the second least populated region after Severozapaden, with a population density of 54.2 people per sq. km. There are 768 thousand people living in urban areas or 71.6% of the region's population. The number of population is the highest in district Burgas (415 thousand) and the smallest in district Yambol (130 thousand). In 2011, the GDP of Yugoiztochen region is BGN 9 514 million, while the relative share of poor is 28.9% of the population of the region.

The district with the highest relative share of poor in the country is situated in the region. This is district Sliven, where 38.6% of the population live below the poverty line. The district with the lowest relative share of poor is district Stara Zagora with 22.9%.

The number of the poor is the highest in district Burgas with 95 thousand and the lowest in district Yambol with 35 thousand. In the districts of Sliven and Stara Zagora the number of poor is about 73 000 for each of them.

Figure 9. Yugoiztochen region (BG34)



Yugoiztochen region is the region with the smallest number of municipalities, only 33. In eleven of them the poor population exceeds 40% of the population of the respective municipality. The outstanding are five municipalities, in which the poor population is more than 45% of the population, including Kotel, Tvarditsa (district Sliven) and Nikolaevo, Maglizh and Bratya Daskalovi (district Stara Zagora). At the same time, five other municipalities rank among the 50 municipalities with the lowest relative share of poor population, including Stara Zagora, Kazanlak, Galabovo, Radnevo (district Stara Zagora) and Burgas.

The absolute number of poor is the highest in municipality of Sliven with 40 thousand people.

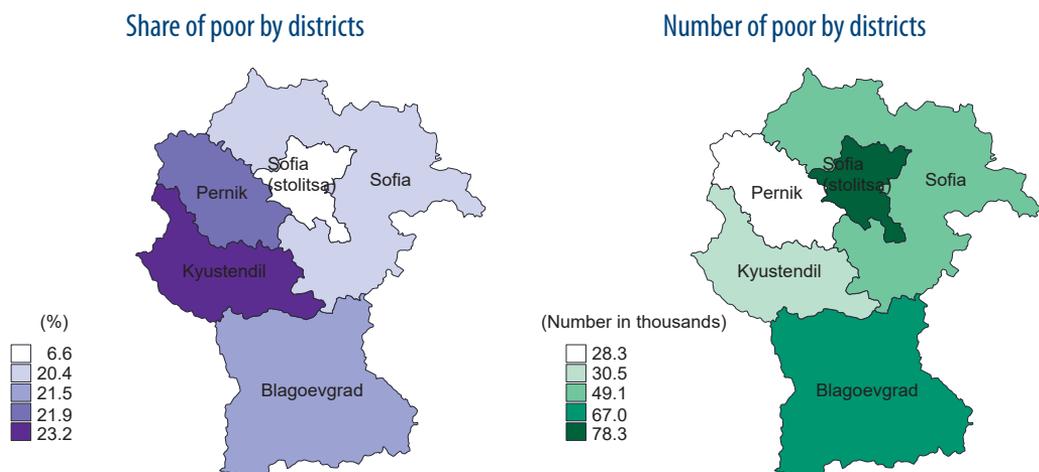
Yugozapaden region

Yugozapaden region includes the districts of Blagoevgrad, Kyustendil, Pernik, Sofia and Sofia (stolitsa). At the end of 2011 its area is 20 306.4 sq. km and the population is 2 131 thousand. It is the most densely populated region in the country (105.0 persons per sq. km). There are 1 773 thousand persons living in urban areas, or 83.2% of the population, and the relative share of rural population is the lowest in the country (16.8%). The number of population is the highest in district Sofia (stolitsa) with 1 297 thousand, and the lowest in district Pernik (132 thousand). In 2011, Yugozapaden region ranks the first in GDP with BGN 39 094 million, and the last in the relative share of poor with 11.6% of the population.

The relative share of the poor in Sofia (stolitsa) is 6.6% and is the lowest in the country. District with the highest relative share of poor is district Kyustendil with 23.2%. In general, the relative share of people living below the poverty line in districts of this region is lower than the country average.

Sofia (stolitsa) is the only district with a population of over 1 million, which is the main reason why the absolute number of poor population (about 78 thousand people) is among the highest in the country. The next is district Blagoevgrad with almost 70 thousand poor, and the lowest is the number of poor in district Kyustendil with 28 thousand.

Figure 10. Yugozapaden region (BG41)



Yugozapaden region comprises of 52 municipalities, with almost half of them (25) among the 50 municipalities with the lowest relative share of poor. Municipalities with less than 15% relative shares of the poor are Mirkovo, Elin Pelin, Bozhurishte, Kostinbrod, Pirdop, Chelopech (district Sofia) and Stolichna municipality. Nevertheless, four municipalities, Strumyani (district Blagoevgrad), Tran, Kovachevtsi (district Pernik) and Nevestino (district Kyustendil) have relative shares of poor above 45 per cent.

High concentration of the number of poor is observed in the municipalities of Samokov (district Sofia), Blagoevgrad, Petrich (district Blagoevgrad), Kyustendil, Pernik and Stolichna municipality, where the number of poor exceeds 10 thousand persons. Municipality with the highest absolute number of poor is Stolichna.

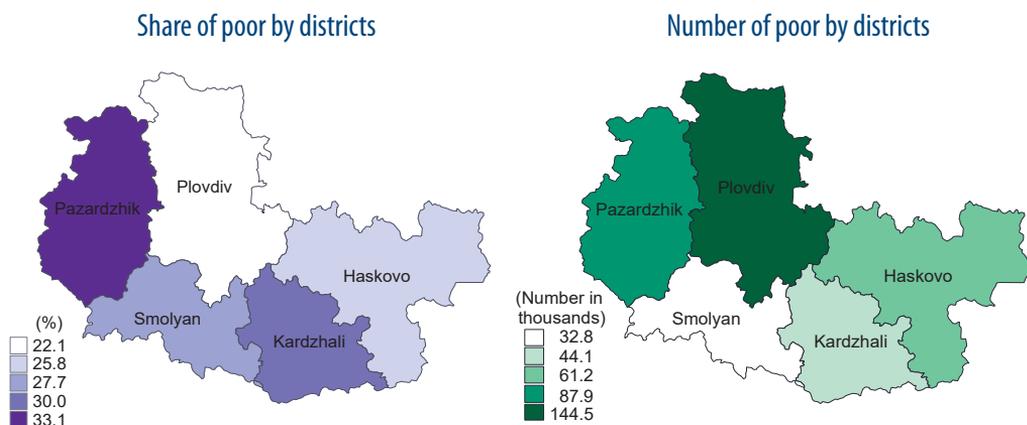
Yuzhen tsentralen region

Yuzhen tsentralen region includes the districts of Kardzhali, Pazardzhik, Plovdiv, Smolyan and Haskovo. At the end of 2011 its area is 22 365.1 sq. km and the population - 1 471 thousand people. The region is the largest according to the area and the second according to the population number after the Yugozapaden region, with a population density of 65.8 people per sq. km. There are 982 000 people living in urban areas or 66.7% of the region's population. The number of population is the highest in district Plovdiv (681 thousand) and the smallest in district Smolyan (120 thousand). In 2011 the GDP of Yuzhen tsentralen region is BGN 11 351 million and the relative share of poor is the highest in the country with 27.3% of the region's population.

According to the project data, the relative share of poor in district Pazardzhik is 33.1%, followed by Kardzhali with 30%, Smolyan with 27.7% and Haskovo with 25.7%. Pazardzhik is among the top five districts in the country with the highest relative share of poor. District with the lowest share is district Plovdiv with 22.1%.

Regarding the absolute number of people living below the poverty line, district Plovdiv ranks the first in the region with more than 140 thousand people, followed by district Pazardzhik with almost 90 thousand poor. The number of poor is at its lowest in district Smolyan with 32 thousand.

Figure 11. Yuzhen tsentralen region (BG42)



Yuzhen tsentralen region is the region with the highest number of municipalities in the country with 57. Six of them, Nedelino (district Smolyan), Sadovo (district Plovdiv), Dzhebel (district Kardzhali), Simeonovgrad (district Haskovo), Lesichovo and Rakitovo (district Pazardzhik) are with relative shares of poor more than 40 per cent of their population. In the municipalities of Plovdiv, Laki, Rodopi, Sopot (district Plovdiv), Panagyurishte (district Pazardzhik) and Chepelare (district Smolyan), shares of poor are under 20%.

The Poverty Map gives a broad overview of the poverty regional dimensions. Data at statistical regions and districts levels does not always show the real picture at lower territorial levels or does not allow allocating people at risk of poverty at specific territorial levels or units. Thus, municipalities with high relative shares of poor, located in districts (regions) with low relative shares of poor, may seem unproblematic. Typical examples are the municipalities of Tran, Zemen, Kovachevtsi (district Pernik with 22%), Nevestino (district Kyustendil with 23%), Strumyani (district Blagoevgrad with 22%), Bratya Daskalovi (district Stara Zagora with 23%), Dolni Chiflik, Dalgopol (district Varna with 21%), Ruen and Sungurlare (district Burgas with 24%), where the relative shares of poor are over 40%, while in the respective districts they are below the country average. On the other hand, vice versa, municipalities with low relative shares of poor situated in districts with high relative shares of poor may seem to be affected by poverty

or needing social assistance. Examples are the municipalities of Montana (district Montana - 32%), Kozloduy (district Vratsa - 31%), Vidin (district Vidin - 34%), Veliko Tarnovo (district Veliko Tarnovo - 29%), Razgrad (district Razgrad - 32%) and Troyan (district Lovech - 34%), where the relative share of poor is lower than the district average by at least 5 percentage points.

The relative share of poor is a function of the absolute number of people living below the poverty line and the total population number. Therefore, 18.5% of all people at risk of poverty in the country are concentrated in the municipalities with centers being the seven cities with population more than 100 thousand (Sofia, Plovdiv, Varna, Burgas, Ruse, Stara Zagora and Pleven), where 36% of the population lives. In the districts whose centers are these cities, there concentrated 38% of all the poor in the country.

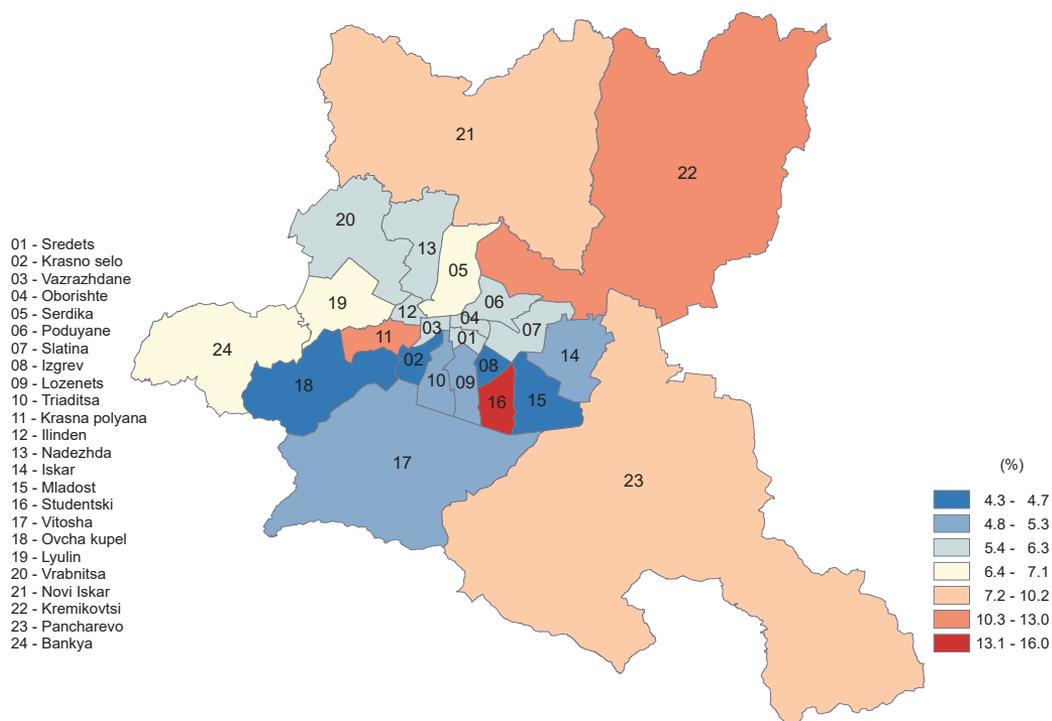
III.2. Poverty in Sofia, Plovdiv and Varna

The three largest cities in Bulgaria, Sofia, Plovdiv and Varna, are divided into separate administrative districts, Sofia into 24, Plovdiv into 6 and Varna into 5 districts. At the start of the Poverty mapping project, it was decided to consider these areas as separate territorial units. This led to a conditional increase of the number of municipalities from 264 to 297. This division does not have a direct effect on the results of the other municipalities but allows simulating data not only for the cities/municipalities Sofia, Plovdiv and Varna, but also for their regions.

Sofia

The relative share of poor in Stolichna municipality is 6.6%. Project outcomes by individual administrative districts further details the picture of poverty. Poverty in most of the administrative districts of Stolichna municipality differs by about 2% of the municipality average, or this condition is met in 20 of the administrative districts. In the remaining 4 districts, the relative shares of poor vary between 10% and 16%. The relative share of poor is at its highest in district Studentski, and its lowest in district Ovcha kupel.

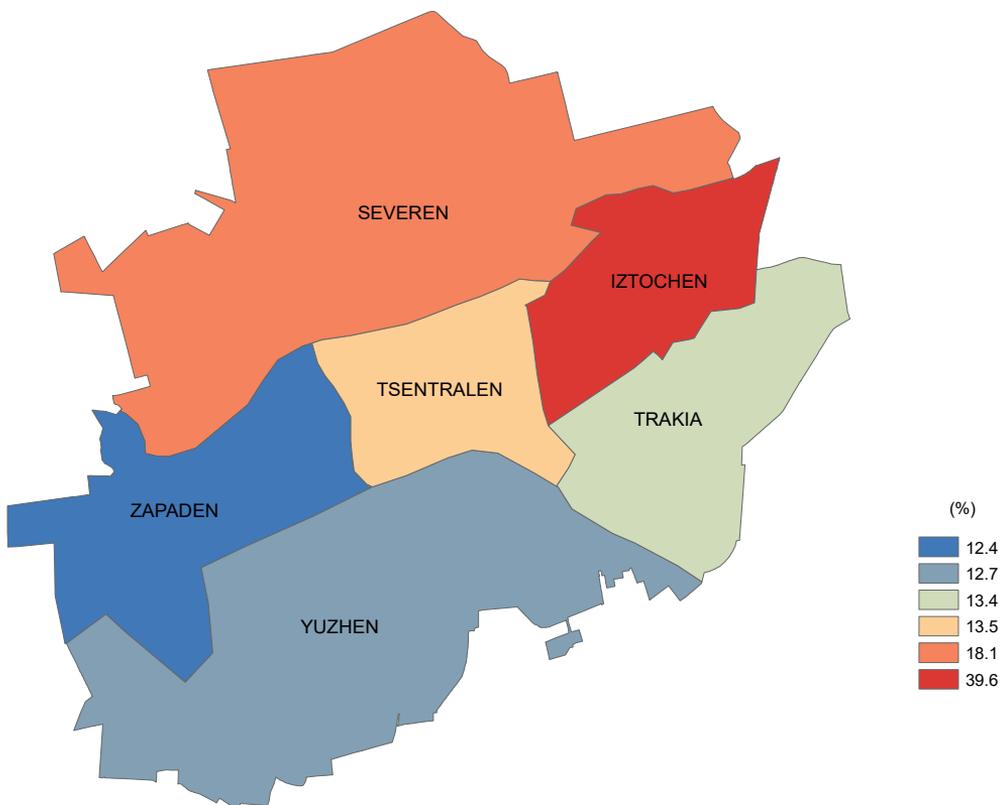
Figure 12. Share of poor by districts of Sofia



Plovdiv

The relative share of poor in municipality of Plovdiv is 17.9%. Highest is it in district Iztochen, where 40% of the population lives below the poverty line, followed by Severen - 18.2%. The relative share of poor in Zapaden, Yuzhen, Trakia and Tsentralen varies between 12% and 13.5%.

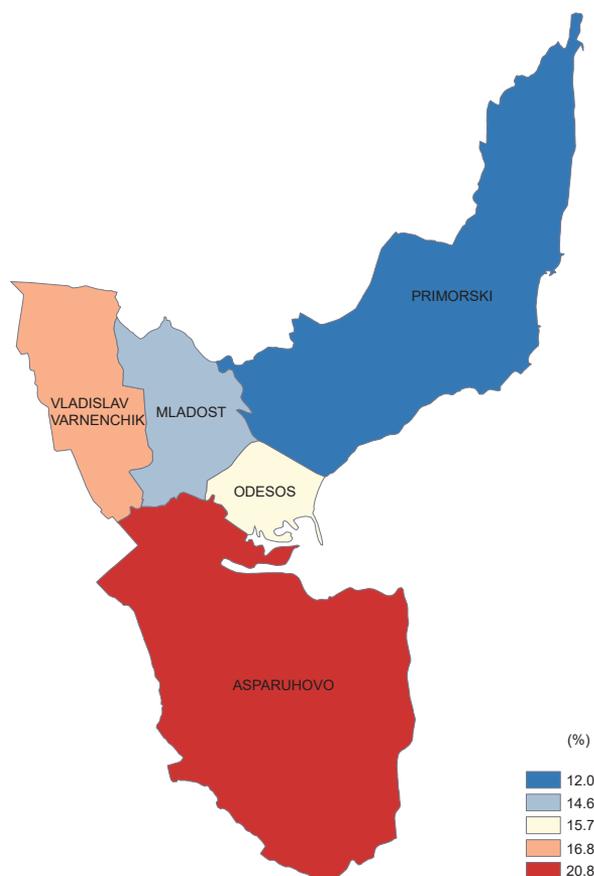
Figure 13. Share of poor by districts of Plovdiv



Varna

For the project purposes, the results here refer only to the districts of city of Varna, as the municipality of Varna includes settlements outside the city, which are considered as separate territorial units. In city of Varna the relative share of poor is 15.3%. This value is not homogeneous for all administrative districts. Lowest is the share of poor in district Primorski (12%), followed by Mladost (14.4%), Odesos (15.7%) and Vladislav Varnenchik (16.8%). The highest is the relative share of poor in Asparuhovo (20.8%).

Figure 14. Share of poor by districts of Varna



III.3. Distribution of poor by sub-populations

Poverty mapping method is based on the simulation of income of separate households in the general population. This allows estimates to be done not only for the whole population, but also for separate sub-populations. These sub-populations could be created based on the population age structure, persons' level of education or economic activity. The population demographic and economic characteristics are used to create sub-populations for the project purposes.

Two sub-sets were created based on the population age. The first consists of children under 14 years of age, and the second - of adults over 65 years. These two sub-sets were selected using the basic characteristics of poor households from the standard SILC survey. Almost throughout the whole survey period in the country, several types of households appear to be poor. First one are the households with dependent children. Increase of the number of children in households leads to increase of the relative share of poverty. Such are households of single parents. The relative share of poor households among single parents and households with three or more children is significantly higher than the country average. The second one are households formed by persons aged 65 and over. Households of lonely pensioners are with a high relative share of poverty, about twice higher than the country average.

Figures 15 and 16 show poverty mapping results for children under 14 and persons aged 65 and over respectively.

Figure 15. Share of poor among children by municipalities

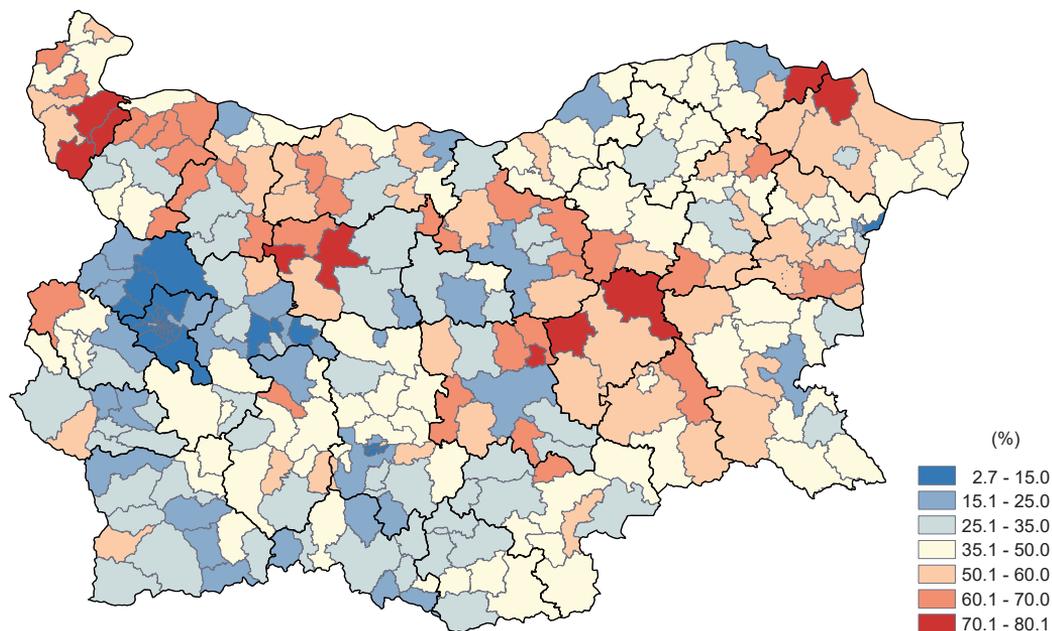
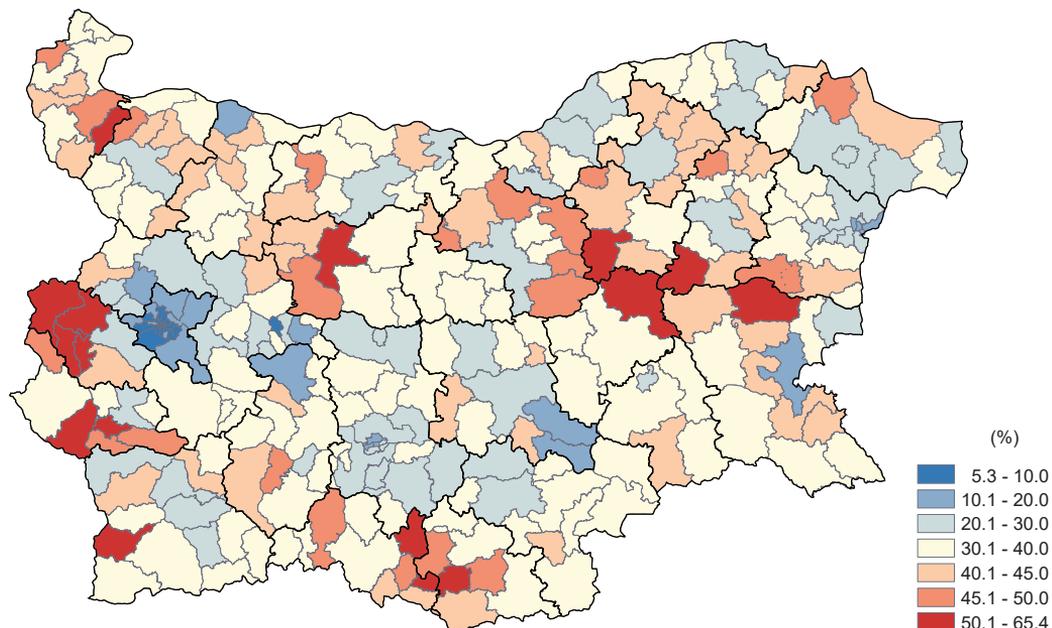


Figure 16. Share of poor among persons aged 65 and more by municipalities



One of the main factors for poverty reduction is the educational level of persons. As higher the educational qualifications of persons is, as less likely is to get into poverty. And vice versa, the lower level of education of a person, increases the probability of falling into poverty. For production of estimates of poverty by educational level, the population was divided into three sub-groups - people with primary and lower education, people with secondary education and people with tertiary education. For each of these subsets, a poverty map was created separately, shown in Figures 17, 18 and 19.

Figure 17. Share of poor among persons with primary and lower education by municipalities

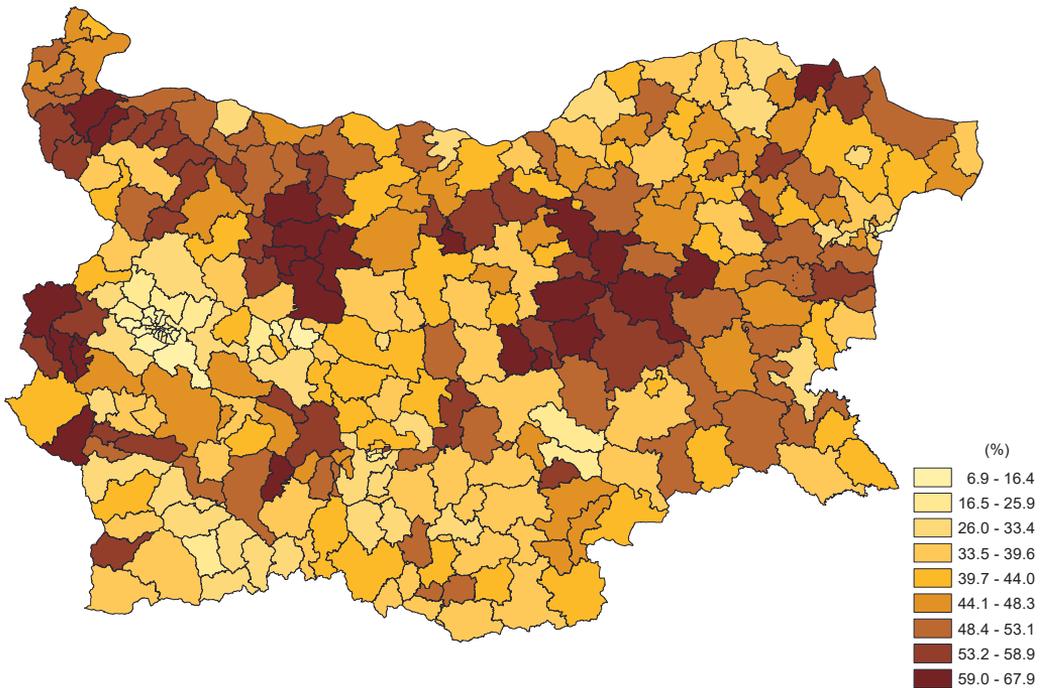


Figure 18. Share of poor among persons with secondary education by municipalities

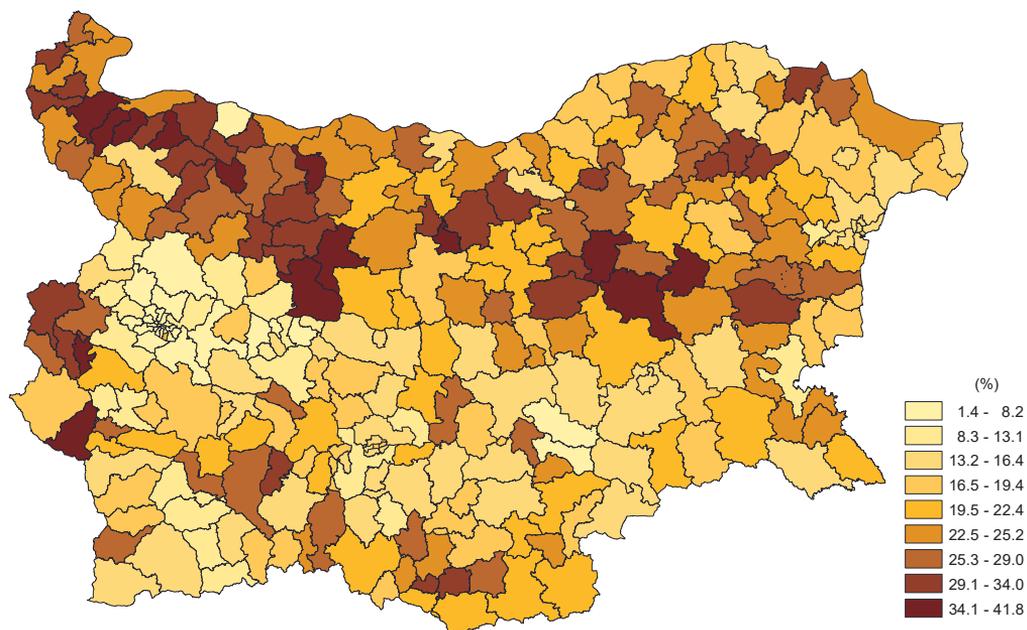
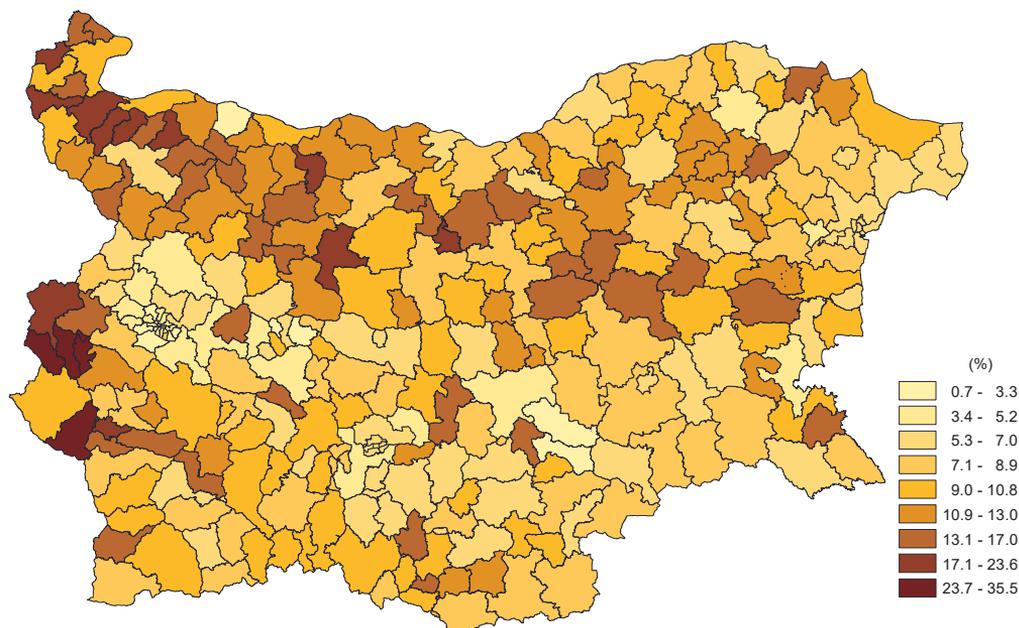


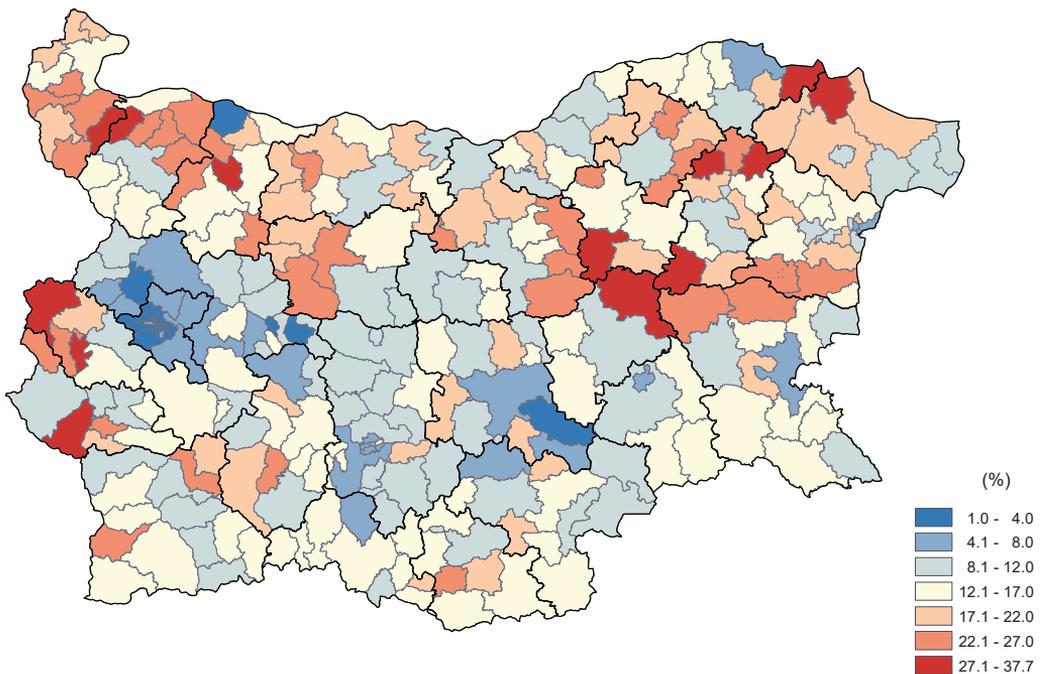
Figure 19. Share of poor among persons with tertiary education by municipalities



SILC allows poverty to be estimated for a more specific subset of the population, the so-called ‘working poor’. It shows the relative share of poor among the employed in the country. The working poor are defined by two de facto situations - they are working and are members of poor households, i.e. the definition is based on two statistical units - the person and the household. The person is the starting point for classification of ‘employed’ and ‘unemployed’, and the household is the basis for classification of ‘poor’ and ‘non-poor’. Taking into account that wages are one of the main components of household income, this indicator shows that the employment is not, by itself, sufficient to overcome poverty.

Figure 20 shows the relative share of poor among the employed.

Figure 20. Share of poor among working poor by municipalities



III.4. Spatial analysis of poverty

In the analysis of spatial phenomena, it is not enough just to visualize the high and low values of the respective phenomenon. To study a phenomenon in a given region, the phenomenon values in the surrounding regions should also be taken into account. Regions close to each other are believed to have stronger impact on each other than distant regions.

The poverty mapping results are spatially oriented data for the municipalities of Bulgaria. As such, poverty data by municipalities should be examined for spatial dependence.

To study the possible existence of spatial dependence between poverty in the municipalities, a Hot-Spot analysis was applied. Proposed by Gettis-Ord (Getis and Ord, 1992), the analysis allows to allocate regions where the poor are concentrated. The analysis compares the value for a region with its neighboring regions within a given radius with the expected value for all regions in the surveyed territory.

The following formula is applied:

$$G_i^* = \frac{\sum_{j=1}^N w_{ij} x_j - \bar{x} \sum_{j=1}^N w_{ij}}{S \sqrt{\frac{N \sum_{j=1}^N w_{ij}^2 - (\sum_{j=1}^N w_{ij})^2}{N-1}}}$$

where x_j is the value of the attribute (for example poverty) of region j , and where w_{ij} is the distance between region i and region j , and N is the total number of regions in the analysis.

Finally:

$$\bar{x} = \frac{\sum_{j=1}^N x_j}{N}$$

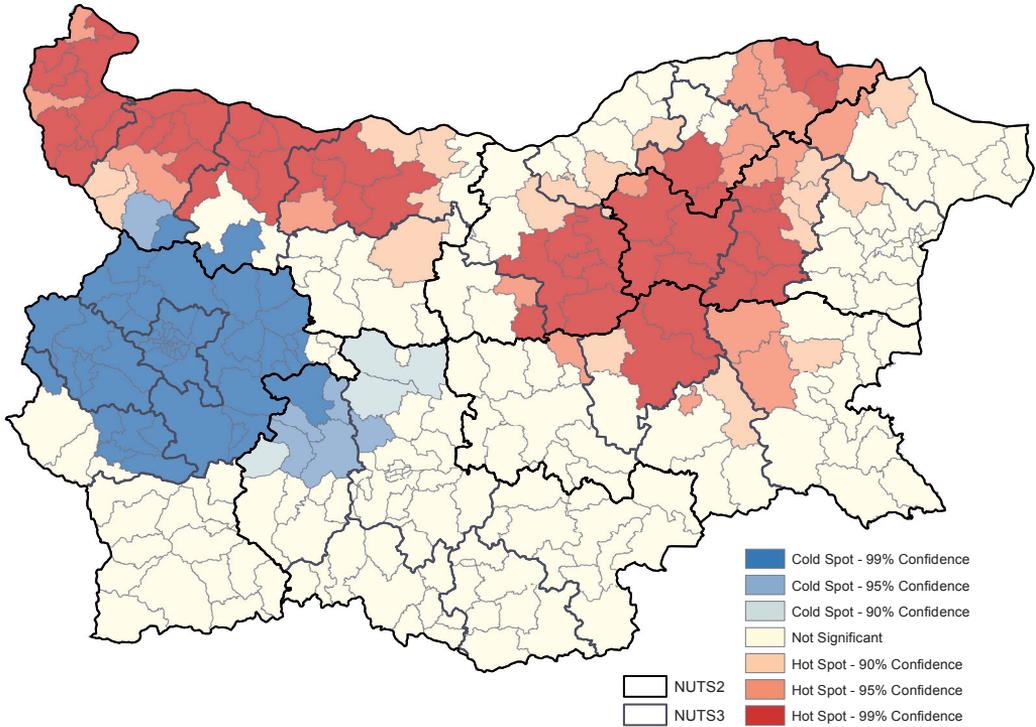
and

$$S = \sqrt{\frac{\sum_{j=1}^N x_j^2}{N} - (\bar{x})^2}$$

As ‘cold points’ are identified regions where poverty is below the expected value and ‘hot points’ identify regions where poverty is above the expected value.

Figure 21 presents results of the analysis of the relative share of poor by municipalities.

Figure 21. Getis-Ord's analysis of share of poor by municipalities

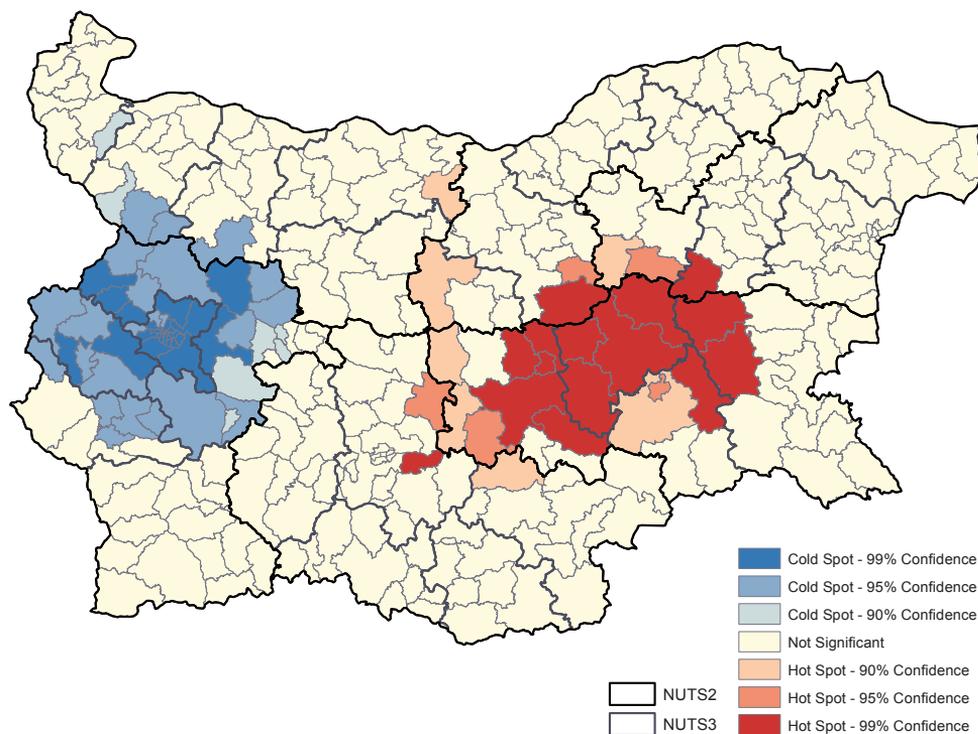


It is clear that the group of municipalities around Stolichna municipality create a region of 'cold spots'. It spreads from north to south from the outskirts of district Sofia to district Blagoevgrad and from west to east from the border with the Republic of Serbia to the municipality of Karlovo.

Two separate groups stand out as 'hot spots'. The first group is formed around the municipalities of Sliven and Targovishte and is spread northward to the Danube River. The second group starts from the north-western part of the country and covers almost the entire territory of Severoiztochen region.

Figure 22 presents results of the analysis of relative share of poor from all poor by municipalities.

Figure 22. *Getis-Ord's analysis of the relative share of poor from all poor by municipalities*



The analysis of the relative share of poor from all poor by municipalities presents a different picture. The group of 'cold spots' has the same distribution as the relative share of poor from the population by municipalities - i.e. around Stolichna municipality (Figure 21).

Looking at the 'hot spots', however, only one group is noticeable - the group around the Sliven municipality, which is no longer oriented to the north but to the south. These differences are results of the fact that the majority of population lives in the southern part of the country. On the other, in the northwestern part of the country the share of population is significantly lower (11.4% of the total country population).

Analysis of the spatial dependence of poverty between the municipalities shows that, around municipality of Sliven, not only the relative share of poor is high, but also the absolute number of poor being higher than the expected.

IV. Conclusion

Mapping poverty at low geographical levels is more than a way to obtain a pretty picture. Poverty at low geographical levels provide information on the heterogeneity of poverty. SAE of poverty are useful for ranking regions by welfare.

The poverty mapping results show that there are districts with high relative shares of poor located in regions with relatively low shares of poor. At a lower territorial level there are municipalities with high relative shares of poor, located in districts (regions) with low relative shares of poor. On the other hand, vice versa, municipalities with low relative shares of poor situated in districts with high relative shares of poor may seem affected by poverty or needing social support. The relative share of poor is a function of the absolute number of people living below the poverty line and the total number of population. Therefore, in the municipalities with centers being the seven cities with a population of more than 100 thousand (Sofia, Plovdiv, Varna, Burgas, Ruse, Stara Zagora and Pleven), where 36% of the population lives, there concentrated 18.5% of all people at risk of poverty in the country. 38% of all poor in the country are concentrated in the districts, whose centers are these cities.

Finally, the results from the spatial analysis reveal that there are two ‘pockets of poverty’ in Bulgaria. One of them is in the northwest part of the country and is bordering ‘the pocket’ of better off municipalities (‘cold spots’), including Stolichna municipality, while the other one is in the east of the country’s center (‘hot spots’).

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ANNEX

ANNEX 1

Share of poor by districts (NUTS3)

(Standard error is pointed in brackets)

District	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Blagoevgrad	21.5 (2.4)	26.0 (3.4)	18.2 (2.2)	32.0 (3.0)	11.6 (1.9)	34.1 (3.4)	14.6 (2.1)	8.2 (1.5)	20.8 (2.3)	22.2 (2.4)
Burgas	23.9 (2.0)	31.8 (2.3)	21.0 (1.8)	29.3 (2.7)	9.3 (1.3)	41.0 (2.5)	15.9 (2.0)	5.8 (1.2)	22.3 (1.9)	25.5 (2.0)
Varna	21.0 (1.5)	27.8 (1.7)	19.1 (1.4)	23.0 (2.0)	8.8 (1.1)	39.1 (2.3)	16.3 (1.6)	6.1 (0.9)	19.6 (1.4)	22.3 (1.6)
Veliko Tarnovo	29.4 (1.8)	37.0 (2.0)	26.3 (1.7)	35.0 (2.5)	13.2 (1.5)	48.2 (2.3)	24.3 (2.0)	9.3 (1.3)	27.3 (1.8)	31.4 (1.9)
Vidin	34.1 (3.1)	45.7 (3.3)	30.6 (3.0)	37.3 (3.6)	15.9 (2.5)	49.6 (3.5)	26.8 (3.3)	11.3 (2.1)	31.7 (3.0)	36.3 (3.2)
Vratsa	31.1 (1.9)	40.9 (2.1)	27.7 (1.9)	35.4 (2.4)	14.1 (1.7)	46.9 (2.3)	25.0 (2.1)	9.9 (1.6)	29.3 (1.9)	32.8 (2.0)
Gabrovo	24.7 (2.9)	28.7 (2.9)	21.3 (2.6)	31.9 (3.9)	12.3 (2.3)	40.0 (3.5)	22.3 (3.2)	9.4 (2.0)	22.3 (2.8)	26.9 (3.0)
Dobrich	27.6 (2.5)	39.3 (2.7)	25.1 (2.4)	28.3 (3.2)	11.7 (1.9)	41.2 (3.1)	16.8 (2.6)	6.4 (1.6)	26.0 (2.4)	29.1 (2.6)
Kardzhali	30.0 (2.7)	34.7 (2.8)	27.2 (2.6)	38.0 (3.7)	13.9 (2.0)	39.5 (3.3)	20.7 (2.5)	7.7 (1.4)	28.7 (2.7)	31.4 (2.8)
Kyustendil	23.2 (2.6)	25.7 (3.5)	18.5 (2.5)	35.2 (3.3)	10.8 (2.0)	41.0 (3.7)	15.9 (2.7)	9.6 (2.0)	22.0 (2.6)	24.2 (2.7)
Lovech	34.2 (2.1)	46.2 (2.1)	30.2 (2.0)	38.5 (2.9)	15.2 (1.9)	53.2 (2.5)	26.1 (2.4)	10.7 (1.6)	32.1 (2.0)	36.3 (2.2)
Montana	31.6 (2.9)	44.4 (3.1)	28.0 (2.8)	34.7 (3.5)	13.7 (2.5)	48.1 (3.4)	22.1 (3.1)	8.3 (1.8)	29.7 (2.8)	33.5 (3.0)
Pazardzhik	33.1 (2.5)	44.8 (2.6)	30.2 (2.3)	35.1 (3.2)	13.9 (1.9)	49.7 (3.0)	20.6 (2.4)	8.8 (1.6)	31.5 (2.4)	34.6 (2.5)
Pernik	21.9 (3.0)	24.0 (4.1)	17.6 (2.9)	34.0 (3.5)	10.9 (2.4)	39.3 (3.9)	15.8 (2.9)	8.8 (2.1)	21.3 (3.0)	22.6 (3.1)

(Continued and end)

District	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Pleven	30.2 (2.1)	41.6 (2.2)	26.8 (2.0)	33.5 (2.7)	12.7 (1.8)	47.3 (2.4)	23.1 (2.4)	9.1 (1.6)	28.4 (2.0)	31.9 (2.2)
Plovdiv	22.1 (1.0)	30.4 (1.3)	19.5 (1.0)	25.7 (1.5)	8.3 (0.8)	38.9 (1.6)	15.3 (1.0)	6.1 (0.8)	20.5 (1.0)	23.5 (1.1)
Razgrad	31.5 (2.8)	38.8 (3.0)	29.0 (2.7)	35.8 (3.4)	16.2 (2.4)	43.3 (3.4)	21.6 (2.8)	7.7 (1.7)	29.8 (2.7)	33.1 (2.9)
Ruse	23.2 (2.8)	29.0 (2.9)	21.0 (2.6)	27.1 (3.7)	10.2 (2.2)	38.1 (3.1)	18.2 (3.2)	7.0 (1.9)	21.4 (2.6)	24.9 (3.0)
Silistra	26.0 (2.7)	36.9 (2.9)	23.6 (2.5)	26.9 (3.4)	10.8 (1.9)	36.0 (3.3)	16.7 (2.7)	5.9 (1.5)	24.7 (2.6)	27.3 (2.8)
Sliven	38.7 (3.2)	56.5 (2.9)	34.5 (3.0)	37.1 (4.6)	13.5 (2.3)	56.0 (3.8)	21.4 (3.5)	8.5 (1.8)	37.2 (3.1)	40.1 (3.3)
Smolyan	27.7 (2.6)	27.5 (2.8)	23.9 (2.4)	43.2 (3.6)	13.2 (1.9)	40.9 (3.2)	22.3 (2.5)	9.7 (1.7)	25.3 (2.5)	30.1 (2.6)
Sofia (stolitsa)	6.6 (1.0)	7.1 (1.4)	5.9 (1.0)	9.4 (1.4)	3.4 (0.8)	14.6 (2.3)	6.7 (1.1)	4.0 (0.7)	6.3 (1.0)	6.9 (1.0)
Sofia	20.4 (1.9)	27.0 (2.8)	16.3 (1.7)	29.7 (2.7)	8.3 (1.3)	36.4 (3.2)	11.7 (1.6)	6.6 (1.1)	19.6 (1.9)	21.2 (1.9)
Stara Zagora	22.9 (2.0)	33.5 (2.0)	19.6 (1.7)	27.0 (3.0)	7.9 (1.3)	40.3 (2.7)	14.7 (2.0)	5.7 (1.2)	21.2 (1.9)	24.5 (2.1)
Targovishte	36.1 (3.4)	46.0 (3.4)	33.1 (3.2)	39.6 (4.5)	17.2 (3.0)	49.7 (3.7)	24.8 (3.6)	9.8 (2.4)	34.3 (3.3)	37.8 (3.5)
Haskovo	25.8 (1.9)	34.8 (2.1)	22.4 (1.7)	30.9 (2.6)	10.5 (1.4)	40.2 (2.5)	16.5 (1.9)	6.7 (1.2)	24.0 (1.8)	27.5 (2.0)
Shumen	30.3 (2.3)	40.1 (2.5)	27.7 (2.2)	32.2 (3.0)	13.1 (2.0)	45.1 (2.7)	20.1 (2.6)	6.9 (1.6)	28.7 (2.2)	31.7 (2.5)
Yambol	27.9 (2.3)	43.4 (2.3)	23.3 (2.0)	32.4 (3.6)	9.3 (1.6)	43.6 (3.3)	16.1 (2.3)	6.5 (1.3)	26.0 (2.2)	29.8 (2.4)

ANNEX 2

Share of poor by municipalities (LAU1)
(Standard error is pointed in brackets)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Avren	39.0 (5.8)	55.2 (5.4)	37.7 (5.3)	31.5 (7.9)	20.2 (4.5)	48.9 (6.9)	21.3 (5.4)	7.3 (3.0)	37.2 (5.7)	40.8 (6.0)
Aytos	35.8 (5.7)	45.4 (5.5)	32.4 (5.3)	41.4 (8.1)	16.3 (4.2)	49.9 (6.9)	23.2 (5.4)	9.3 (3.0)	34.0 (5.5)	37.5 (5.9)
Aksakovo	27.3 (5.5)	36.8 (5.8)	25.3 (5.0)	26.1 (7.1)	14.0 (4.0)	39.1 (7.1)	15.5 (4.5)	6.6 (2.6)	25.7 (5.3)	28.8 (5.7)
Alfatar	37.0 (8.0)	53.4 (8.1)	33.2 (7.3)	38.4 (10.0)	18.7 (6.4)	45.9 (9.2)	24.0 (7.5)	10.5 (4.6)	36.1 (8.0)	38.0 (8.2)
Anton	21.8 (4.7)	27.3 (6.2)	16.5 (4.1)	33.5 (6.7)	9.8 (3.1)	37.0 (7.0)	12.7 (3.9)	7.8 (3.7)	21.0 (4.8)	22.5 (4.7)
Antonovo	53.0 (7.4)	68.0 (6.3)	50.2 (7.0)	51.6 (9.9)	27.3 (7.0)	60.1 (7.9)	36.4 (7.8)	17.0 (5.7)	51.1 (7.5)	55.0 (7.4)
Apriltsi	25.8 (6.8)	21.3 (6.3)	20.2 (5.8)	36.8 (9.0)	11.5 (4.6)	39.3 (8.5)	21.2 (6.5)	11.9 (5.1)	23.4 (6.7)	28.1 (6.9)
Ardino	33.9 (5.6)	31.9 (5.3)	30.0 (5.0)	48.0 (8.0)	15.6 (3.8)	42.4 (6.7)	24.7 (4.6)	10.1 (2.7)	32.3 (5.6)	35.6 (5.6)
Asenovgrad	22.0 (3.9)	28.4 (3.8)	19.2 (3.4)	27.7 (5.8)	8.4 (2.4)	35.2 (5.4)	15.1 (3.5)	6.3 (1.9)	20.3 (3.7)	23.6 (4.1)
Balchik	27.6 (5.4)	41.4 (5.6)	25.5 (5.0)	24.4 (7.3)	11.6 (3.8)	40.1 (7.1)	14.4 (4.5)	5.7 (2.5)	26.0 (5.2)	29.2 (5.6)
Banite	38.9 (5.5)	34.1 (5.4)	30.8 (4.9)	58.4 (7.3)	15.7 (3.9)	51.6 (6.7)	26.9 (4.7)	14.3 (3.5)	34.7 (5.5)	42.7 (5.5)
Bansko	17.6 (3.3)	19.7 (4.0)	14.7 (3.0)	27.3 (4.5)	10.3 (2.5)	31.2 (4.9)	11.8 (2.8)	7.4 (2.1)	16.8 (3.2)	18.4 (3.4)
Batak	24.3 (5.5)	30.2 (5.5)	20.7 (4.8)	32.6 (7.9)	10.2 (3.5)	36.3 (7.3)	15.9 (4.7)	7.5 (2.9)	22.3 (5.3)	26.2 (5.7)
Belene	19.9 (6.7)	21.3 (6.3)	17.4 (5.8)	26.3 (9.6)	8.6 (4.2)	29.7 (9.2)	16.3 (6.1)	5.8 (3.1)	18.2 (6.3)	21.6 (7.1)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Belitsa	41.0 (7.7)	49.8 (8.5)	38.0 (7.6)	44.2 (8.0)	25.3 (7.1)	48.9 (8.4)	27.3 (7.2)	14.1 (5.0)	40.3 (7.7)	41.7 (7.7)
Belovo	28.0 (6.1)	31.6 (5.9)	23.7 (5.3)	39.2 (8.8)	11.9 (4.0)	42.5 (7.9)	19.8 (5.5)	9.2 (3.3)	25.6 (5.9)	30.2 (6.3)
Belogradchik	35.2 (5.3)	52.0 (5.2)	31.9 (4.7)	35.3 (7.4)	17.3 (4.0)	53.5 (6.7)	24.0 (5.2)	10.3 (3.4)	33.3 (5.2)	37.1 (5.5)
Beloslav	19.7 (5.0)	26.5 (5.5)	17.7 (4.5)	22.3 (6.8)	10.3 (3.6)	27.7 (6.6)	13.3 (4.2)	5.3 (2.0)	18.1 (4.8)	21.4 (5.3)
Berkovitsa	36.1 (6.0)	49.8 (5.7)	32.4 (5.4)	38.8 (7.9)	16.0 (4.3)	52.7 (7.2)	24.6 (5.8)	11.1 (3.5)	33.8 (5.8)	38.2 (6.1)
Blagoevgrad	15.6 (3.5)	17.5 (4.2)	14.0 (3.3)	22.7 (4.2)	8.6 (2.7)	28.9 (4.9)	14.0 (3.5)	8.0 (2.3)	15.2 (3.4)	16.1 (3.6)
Bobov dol	19.8 (4.4)	19.8 (5.1)	14.6 (3.7)	33.8 (6.3)	9.0 (2.9)	32.6 (6.4)	11.3 (3.3)	7.3 (2.2)	18.9 (4.4)	20.8 (4.4)
Boboshevo	40.3 (6.6)	34.9 (8.4)	31.6 (6.5)	54.4 (7.0)	22.1 (5.8)	55.8 (7.2)	28.5 (6.6)	21.5 (6.0)	37.8 (6.7)	42.5 (6.7)
Bozhurishte	12.1 (3.4)	10.6 (3.7)	8.9 (2.9)	22.8 (5.0)	6.0 (2.4)	25.9 (5.7)	9.0 (3.1)	4.9 (2.0)	11.6 (3.3)	12.5 (3.4)
Boynitsa	42.2 (8.8)	60.9 (12.4)	33.1 (7.6)	47.7 (9.9)	20.7 (7.2)	50.7 (9.8)	29.6 (8.0)	21.0 (7.9)	37.5 (8.8)	46.3 (8.9)
Boychinovtsi	45.0 (6.7)	63.9 (5.8)	42.0 (6.0)	42.5 (8.5)	23.2 (5.4)	53.4 (7.4)	32.9 (6.6)	14.3 (4.4)	42.5 (6.5)	47.5 (6.8)
Bolyarovo	35.3 (8.0)	56.4 (7.3)	30.2 (6.6)	36.2 (10.8)	14.4 (5.2)	42.6 (9.7)	17.6 (6.3)	7.9 (3.9)	32.1 (7.8)	38.3 (8.2)
Borino	28.3 (7.0)	27.7 (6.9)	25.6 (6.4)	39.7 (9.9)	15.4 (5.1)	35.4 (8.4)	23.4 (6.2)	10.6 (4.1)	27.1 (6.9)	29.5 (7.1)
Borovan	47.6 (8.0)	64.0 (7.2)	45.1 (7.3)	43.9 (10.2)	27.1 (6.8)	56.4 (8.7)	34.6 (8.2)	16.8 (6.0)	45.9 (8.0)	49.5 (8.0)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Borovo	40.7 (7.9)	54.0 (7.8)	37.9 (7.1)	41.6 (9.7)	18.8 (5.7)	48.9 (8.9)	24.4 (6.8)	11.0 (4.0)	38.2 (7.8)	43.2 (8.0)
Botevgrad	19.6 (3.7)	27.7 (4.3)	16.2 (3.4)	26.7 (5.2)	8.5 (2.5)	37.4 (5.9)	12.4 (3.3)	6.7 (2.1)	18.9 (3.7)	20.3 (3.8)
Bratya Daskalovi	46.6 (6.2)	69.4 (5.4)	43.9 (5.5)	41.9 (7.8)	21.1 (5.1)	54.7 (6.9)	26.5 (6.0)	14.6 (4.6)	44.8 (6.1)	48.4 (6.3)
Bratsigovo	35.5 (6.1)	53.3 (5.6)	31.0 (5.4)	38.0 (8.6)	14.8 (4.2)	48.7 (7.6)	21.0 (5.6)	10.3 (3.9)	33.4 (6.0)	37.5 (6.3)
Bregovo	33.6 (7.7)	46.6 (7.5)	30.5 (6.8)	35.2 (9.3)	17.6 (5.7)	45.4 (9.2)	26.6 (7.4)	13.5 (4.9)	31.1 (7.5)	36.0 (7.9)
Breznik	39.5 (6.1)	43.0 (6.6)	32.9 (5.7)	51.9 (7.6)	19.7 (4.7)	56.3 (7.3)	28.4 (5.9)	15.5 (3.9)	38.4 (6.2)	40.5 (6.1)
Brezovo	33.5 (5.8)	48.8 (5.9)	30.2 (4.9)	33.9 (7.3)	14.4 (3.9)	43.1 (6.8)	19.6 (5.2)	10.2 (3.6)	31.1 (5.6)	35.7 (6.0)
Brusartsi	47.5 (8.9)	62.8 (7.6)	44.8 (8.0)	46.8 (10.9)	27.3 (7.4)	58.0 (10.1)	35.2 (8.5)	18.5 (6.6)	45.1 (8.7)	49.8 (9.0)
Burgas	14.3 (2.8)	18.5 (2.9)	12.6 (2.5)	18.7 (4.7)	5.2 (1.6)	29.0 (4.7)	12.4 (2.9)	4.7 (1.4)	12.8 (2.6)	15.8 (3.0)
Byala (district Ruse)	28.9 (4.3)	44.4 (4.5)	25.8 (3.8)	29.1 (5.9)	9.5 (2.5)	43.6 (5.9)	16.3 (3.7)	6.0 (1.8)	27.4 (4.2)	30.4 (4.5)
Byala (district Varna)	35.9 (6.6)	51.2 (6.8)	32.6 (5.9)	35.9 (9.2)	16.2 (4.8)	50.2 (8.4)	17.7 (5.6)	6.2 (2.9)	34.0 (6.4)	37.9 (6.9)
Byala Slatina	38.6 (4.6)	52.9 (4.3)	35.8 (4.2)	37.0 (6.0)	16.8 (3.6)	52.5 (5.4)	28.6 (4.6)	11.7 (2.9)	37.0 (4.5)	40.2 (4.6)
Varna	15.2 (1.6)	18.4 (1.7)	14.3 (1.5)	17.1 (2.3)	7.0 (1.2)	30.4 (2.6)	15.2 (1.9)	5.9 (0.9)	13.8 (1.5)	16.6 (1.7)
Veliki Preslav	30.3 (6.2)	39.8 (6.1)	28.0 (5.7)	31.6 (8.1)	13.6 (4.4)	42.2 (7.9)	19.6 (5.5)	7.2 (3.0)	28.3 (6.0)	32.1 (6.4)
Veliko Tarnovo	20.6 (3.6)	22.2 (3.7)	19.1 (3.2)	25.9 (5.2)	10.4 (2.7)	37.3 (5.2)	21.8 (3.9)	8.4 (2.2)	18.6 (3.4)	22.5 (3.8)
Velingrad	38.2 (5.4)	47.3 (5.2)	35.6 (5.1)	40.3 (7.2)	17.7 (4.3)	53.0 (6.4)	26.1 (5.3)	9.7 (3.0)	36.6 (5.3)	39.6 (5.5)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Venets	46.1 (5.9)	56.0 (5.6)	43.1 (5.7)	49.7 (7.8)	27.3 (5.4)	49.5 (6.3)	32.0 (5.9)	12.4 (3.5)	44.6 (6.0)	47.6 (5.9)
Vetovo	36.6 (6.0)	45.4 (6.2)	34.2 (5.7)	38.6 (7.6)	17.3 (4.4)	44.7 (6.9)	21.6 (5.2)	9.7 (3.1)	34.8 (5.9)	38.3 (6.2)
Vetrino	33.6 (6.1)	43.6 (6.3)	30.1 (5.4)	37.2 (7.8)	17.8 (4.6)	41.1 (7.1)	22.6 (5.2)	10.6 (3.7)	31.1 (6.0)	36.0 (6.2)
Vidin	29.7 (4.5)	38.3 (4.6)	27.1 (4.2)	32.8 (6.0)	14.0 (3.3)	45.7 (5.9)	25.2 (4.6)	10.6 (2.6)	27.4 (4.3)	31.8 (4.7)
Vratsa	28.2 (3.9)	34.9 (3.8)	25.4 (3.6)	34.7 (5.3)	14.2 (3.0)	46.7 (5.0)	26.3 (4.2)	10.9 (2.6)	26.3 (3.7)	30.1 (4.0)
Valchedram	44.2 (7.1)	61.9 (6.2)	42.2 (6.6)	39.1 (8.9)	25.0 (5.9)	51.9 (8.1)	30.0 (6.9)	11.6 (4.7)	42.4 (7.1)	45.8 (7.2)
Valchi dol	40.2 (6.1)	57.4 (5.5)	37.0 (5.3)	39.0 (8.1)	17.0 (4.3)	48.7 (7.1)	22.1 (5.3)	8.8 (3.2)	38.1 (5.9)	42.2 (6.2)
Varbitsa	55.0 (6.6)	64.6 (6.0)	51.9 (6.4)	57.7 (8.7)	31.1 (6.7)	60.0 (6.9)	39.0 (6.9)	16.8 (5.0)	53.2 (6.6)	56.8 (6.5)
Varshets	40.7 (5.9)	61.4 (4.9)	35.6 (5.3)	41.0 (8.3)	16.8 (4.7)	56.4 (7.1)	25.4 (6.1)	11.5 (4.2)	38.5 (5.7)	42.9 (6.2)
Gabrovo	23.3 (4.6)	24.2 (4.4)	20.4 (4.0)	31.1 (6.2)	11.8 (3.5)	38.5 (6.0)	23.5 (4.9)	9.6 (2.8)	21.0 (4.3)	25.4 (4.8)
General Toshevo	41.6 (8.3)	57.0 (7.2)	37.3 (7.6)	44.8 (10.8)	20.2 (6.8)	52.5 (9.7)	25.2 (7.7)	10.3 (4.1)	39.5 (8.2)	43.6 (8.5)
Georgi Damyanovo	32.0 (7.4)	41.0 (9.3)	27.6 (6.4)	35.9 (8.6)	15.5 (5.4)	41.9 (8.6)	24.2 (6.7)	14.8 (5.8)	28.2 (7.2)	35.4 (7.6)
Glavinitsa	32.5 (6.3)	43.9 (6.7)	30.1 (5.8)	32.8 (7.7)	16.3 (4.3)	38.1 (7.1)	19.5 (5.3)	7.8 (2.9)	31.0 (6.2)	34.0 (6.4)
Godech	20.6 (4.5)	17.5 (5.5)	14.1 (3.9)	35.7 (6.0)	8.3 (3.1)	36.6 (6.5)	11.8 (3.7)	6.9 (2.7)	19.8 (4.5)	21.4 (4.6)
Gorna Malina	28.5 (5.9)	31.8 (6.9)	22.8 (5.4)	40.0 (7.2)	15.0 (4.6)	43.0 (7.4)	18.4 (5.3)	13.4 (4.2)	26.9 (5.9)	30.1 (6.0)
Gorna Oryahovitsa	26.2 (4.5)	33.1 (4.4)	23.4 (4.1)	31.2 (6.2)	12.5 (3.4)	44.4 (5.9)	21.4 (4.7)	9.2 (2.6)	24.2 (4.4)	28.0 (4.7)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Gotse	16.4	20.0	14.1	23.6	9.7	24.1	11.4	6.1	15.9	16.9
Delchev	(4.2)	(5.2)	(3.9)	(5.0)	(3.2)	(5.8)	(3.2)	(1.9)	(4.1)	(4.2)
Gramada	41.0	60.1	36.8	42.3	24.1	50.4	32.1	15.5	38.6	43.3
	(9.2)	(8.3)	(8.3)	(11.0)	(7.1)	(10.3)	(9.1)	(7.8)	(9.3)	(9.1)
Gulyantsi	35.2	49.3	31.5	36.9	16.0	43.3	24.4	11.1	32.7	37.7
	(6.5)	(5.6)	(5.7)	(8.1)	(4.6)	(7.6)	(5.9)	(4.1)	(6.4)	(6.6)
Gurkovo	43.4	62.9	40.9	34.0	11.0	56.5	17.5	8.1	41.8	45.0
	(5.1)	(4.4)	(4.8)	(7.4)	(3.9)	(5.9)	(5.1)	(3.6)	(5.0)	(5.3)
Galabovo	15.0	27.4	13.0	13.7	4.2	21.6	6.3	2.1	13.8	16.1
	(3.9)	(4.7)	(3.3)	(5.3)	(1.6)	(5.8)	(2.4)	(0.9)	(3.7)	(4.2)
Garmen	26.2	35.3	22.5	32.8	14.0	31.7	14.0	7.4	25.5	27.0
	(5.2)	(6.0)	(4.9)	(6.4)	(4.2)	(6.3)	(3.8)	(2.7)	(5.1)	(5.3)
Dve mogili	36.1	46.4	33.7	37.0	16.0	46.9	21.8	9.5	34.1	38.0
	(6.1)	(5.9)	(5.6)	(7.8)	(4.7)	(7.2)	(5.5)	(3.4)	(6.0)	(6.3)
Devin	32.8	36.9	28.7	45.2	15.2	44.0	25.6	10.7	30.3	35.1
	(5.6)	(5.4)	(5.1)	(7.8)	(3.9)	(6.8)	(5.2)	(2.9)	(5.5)	(5.6)
Devnya	22.3	33.2	19.9	21.3	9.7	29.5	12.0	4.6	20.2	24.3
	(4.7)	(5.5)	(4.2)	(6.3)	(3.2)	(5.9)	(3.5)	(1.9)	(4.3)	(5.0)
Dzhebel	41.0	41.9	37.8	55.4	23.4	49.1	31.1	13.0	39.7	42.3
	(8.7)	(8.7)	(8.3)	(10.9)	(7.0)	(9.7)	(7.9)	(4.6)	(8.6)	(8.7)
Dimitrovgrad	21.8	30.7	18.7	26.7	8.0	35.2	14.5	6.0	19.8	23.8
	(4.1)	(4.2)	(3.5)	(6.0)	(2.4)	(5.7)	(3.6)	(2.0)	(3.8)	(4.3)
Dimovo	53.9	75.3	51.5	48.9	25.6	64.0	37.3	17.8	51.4	56.3
	(6.1)	(4.5)	(5.4)	(8.2)	(5.3)	(6.6)	(6.5)	(5.2)	(6.1)	(6.1)
Dobrich	19.4	25.3	17.8	21.6	8.8	33.1	15.7	6.2	17.7	20.9
	(3.9)	(4.1)	(3.6)	(5.5)	(2.7)	(5.5)	(3.8)	(2.1)	(3.7)	(4.1)
Dobrich- selska	37.2	55.9	35.8	29.6	18.0	41.3	17.9	7.4	35.5	38.9
	(6.4)	(6.3)	(5.9)	(8.1)	(4.8)	(7.2)	(5.1)	(3.1)	(6.3)	(6.5)
Dolna	38.5	56.6	35.4	36.9	17.3	48.6	25.1	12.3	36.4	40.5
Mitropolia	(5.7)	(5.0)	(5.1)	(7.3)	(4.2)	(6.6)	(5.4)	(3.9)	(5.6)	(5.8)
Dolna banya	33.2	47.5	28.8	37.0	16.2	47.9	16.8	10.6	32.5	33.9
	(5.9)	(8.0)	(5.5)	(6.5)	(4.3)	(7.7)	(4.6)	(3.1)	(5.8)	(5.9)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Dolni Dabnik	41.5 (5.9)	60.7 (5.0)	38.3 (5.4)	38.0 (7.6)	15.9 (4.2)	53.7 (6.8)	27.6 (5.8)	12.3 (3.8)	39.8 (5.7)	43.1 (6.0)
Dolni Chiflik	48.4 (5.8)	63.5 (5.3)	45.6 (5.6)	42.8 (7.9)	22.4 (4.9)	57.9 (6.6)	25.7 (5.4)	10.8 (3.2)	46.8 (5.8)	50.0 (5.8)
Dospat	22.8 (7.2)	24.6 (7.8)	20.9 (6.7)	30.9 (9.1)	12.5 (5.3)	29.7 (8.5)	18.8 (6.5)	9.3 (4.0)	21.4 (7.0)	24.2 (7.3)
Dragoman	25.4 (5.7)	19.7 (6.2)	17.0 (4.8)	44.3 (7.8)	9.8 (4.0)	41.7 (7.8)	14.6 (4.6)	8.9 (3.0)	24.0 (5.6)	26.7 (5.8)
Dryanovo	27.4 (6.3)	35.5 (6.2)	24.2 (5.5)	31.9 (8.4)	13.1 (4.5)	44.5 (7.9)	22.4 (6.5)	9.5 (3.7)	25.1 (6.0)	29.5 (6.5)
Dulovo	25.4 (6.9)	35.9 (7.3)	23.9 (6.6)	21.9 (8.0)	11.7 (5.1)	30.3 (7.9)	14.6 (5.9)	5.0 (2.8)	24.5 (6.7)	26.3 (7.1)
Dupnitsa	19.0 (4.3)	23.4 (5.0)	15.5 (3.9)	28.0 (5.6)	9.0 (3.0)	35.9 (6.5)	12.8 (3.9)	8.1 (2.7)	18.0 (4.2)	20.0 (4.4)
Dalgopol	45.3 (6.5)	59.2 (6.2)	41.8 (6.2)	45.9 (8.3)	23.0 (5.7)	51.7 (7.1)	27.7 (6.2)	11.2 (3.9)	43.7 (6.5)	46.9 (6.6)
Elena	45.1 (7.2)	58.6 (6.4)	41.3 (6.7)	48.0 (9.4)	24.0 (6.3)	61.1 (7.8)	33.3 (7.7)	16.1 (5.4)	43.2 (7.1)	46.8 (7.3)
Elin Pelin	13.3 (3.3)	16.3 (3.8)	10.1 (2.7)	21.8 (5.1)	5.4 (1.9)	26.5 (5.9)	7.6 (2.4)	4.0 (1.4)	12.6 (3.2)	14.1 (3.4)
Elhovo	34.1 (7.6)	44.8 (7.0)	28.4 (6.5)	44.3 (11.3)	13.7 (5.0)	49.6 (9.9)	20.2 (6.5)	8.7 (3.7)	32.0 (7.4)	36.2 (7.8)
Etropole	19.6 (3.7)	23.2 (4.9)	14.7 (3.3)	34.4 (5.1)	8.1 (2.6)	39.1 (5.9)	12.2 (3.2)	6.5 (1.8)	18.8 (3.7)	20.5 (3.8)
Zavet	37.1 (6.2)	43.8 (6.3)	34.9 (5.9)	40.5 (7.2)	22.2 (5.5)	43.2 (6.7)	25.1 (5.7)	9.8 (3.3)	35.7 (6.1)	38.5 (6.3)
Zemen	44.7 (6.4)	46.0 (8.0)	34.2 (6.1)	58.1 (7.1)	22.8 (5.6)	60.7 (7.1)	30.4 (6.5)	26.6 (5.8)	43.2 (6.5)	46.2 (6.4)
Zlataritsa	47.4 (5.7)	62.6 (5.5)	44.4 (5.3)	46.9 (7.4)	25.8 (5.0)	58.6 (6.2)	34.0 (5.9)	15.2 (4.5)	45.1 (5.6)	49.6 (5.7)
Zlatitsa	18.2 (4.5)	21.7 (5.7)	15.3 (4.1)	26.5 (6.0)	8.9 (3.0)	32.4 (6.9)	12.3 (3.8)	6.2 (2.4)	17.2 (4.4)	19.2 (4.6)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Zlatograd	27.0 (5.1)	24.3 (4.9)	23.6 (4.7)	44.1 (7.4)	13.1 (3.6)	38.7 (6.5)	21.4 (4.7)	9.0 (2.7)	24.5 (5.0)	29.3 (5.2)
Ivaylovgrad	30.9 (6.1)	38.4 (6.2)	26.7 (5.4)	39.4 (8.6)	15.8 (4.4)	43.4 (7.8)	21.4 (5.5)	8.3 (2.9)	28.8 (6.0)	32.9 (6.3)
Ivanovo	27.6 (4.8)	38.9 (4.7)	24.5 (4.1)	30.0 (6.3)	10.9 (3.0)	36.2 (6.1)	17.2 (3.8)	7.9 (2.3)	25.4 (4.6)	29.7 (5.1)
Iskar	48.3 (7.7)	65.2 (6.4)	45.6 (7.2)	45.9 (9.7)	23.1 (6.6)	58.0 (8.4)	37.4 (7.9)	17.9 (6.4)	46.7 (7.7)	49.8 (7.7)
Isperih	38.9 (9.6)	47.9 (9.4)	36.2 (9.0)	42.2 (12.0)	21.7 (8.0)	48.1 (10.9)	26.6 (8.9)	10.9 (5.1)	37.5 (9.4)	40.4 (9.7)
Ihtiman	30.8 (5.4)	44.8 (7.1)	26.5 (5.0)	32.7 (6.2)	12.5 (3.7)	45.0 (7.2)	14.3 (4.3)	8.5 (2.9)	30.0 (5.4)	31.5 (5.5)
Kavarna	31.3 (5.6)	45.4 (5.4)	28.6 (5.1)	30.5 (8.0)	12.0 (3.7)	46.2 (7.4)	17.4 (5.0)	6.0 (2.5)	29.6 (5.5)	32.9 (5.8)
Kazanlak	21.5 (3.7)	28.9 (3.6)	18.3 (3.2)	28.1 (5.5)	8.6 (2.4)	39.1 (5.3)	15.8 (3.6)	6.7 (1.9)	19.5 (3.4)	23.4 (3.9)
Kaynardzha	63.7 (6.0)	80.1 (4.9)	61.9 (5.8)	44.3 (9.1)	37.7 (6.4)	67.9 (6.5)	32.0 (6.8)	14.4 (5.3)	62.1 (6.1)	65.3 (5.9)
Kaloyanovo	28.4 (4.9)	39.2 (4.5)	24.4 (4.1)	32.3 (6.9)	9.4 (2.7)	38.2 (6.3)	16.0 (4.0)	8.4 (2.6)	26.4 (4.8)	30.4 (5.1)
Kameno	41.0 (6.7)	55.6 (6.2)	36.6 (6.0)	43.6 (9.4)	18.3 (4.9)	51.3 (8.0)	23.0 (5.8)	11.9 (4.0)	38.3 (6.6)	43.8 (6.9)
Kaolinovo	44.9 (7.0)	55.2 (6.9)	42.6 (6.8)	43.4 (8.8)	25.0 (6.5)	48.3 (7.5)	29.7 (6.5)	11.8 (4.3)	43.7 (7.0)	46.1 (7.1)
Karlovo	26.7 (3.6)	39.5 (3.3)	23.3 (3.2)	29.0 (5.3)	9.5 (2.4)	42.4 (4.9)	15.7 (3.3)	6.3 (1.8)	24.9 (3.4)	28.3 (3.8)
Karnobat	30.3 (5.1)	42.9 (4.9)	25.9 (4.4)	35.2 (7.7)	11.5 (3.4)	45.7 (6.8)	16.2 (4.4)	6.4 (2.3)	28.3 (4.9)	32.2 (5.3)
Kaspichan	42.9 (8.1)	59.6 (7.2)	39.6 (7.4)	41.2 (10.9)	19.6 (6.7)	54.5 (9.2)	25.9 (7.9)	11.8 (4.9)	41.4 (8.0)	44.4 (8.2)
Kirkovo	31.3 (5.8)	34.1 (6.0)	28.2 (5.4)	41.1 (7.3)	14.7 (4.2)	37.2 (6.5)	21.6 (5.0)	8.3 (2.4)	30.0 (5.7)	32.6 (5.9)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Knezha	38.9 (6.3)	55.2 (5.8)	35.5 (5.8)	38.7 (8.0)	17.6 (4.7)	52.4 (7.2)	28.8 (6.4)	11.6 (4.0)	37.2 (6.1)	40.5 (6.4)
Kovachevtsi	48.9 (8.3)	38.6 (10.0)	39.6 (8.2)	59.3 (8.7)	30.3 (7.3)	63.6 (8.8)	35.5 (8.6)	30.2 (8.4)	47.8 (8.5)	50.1 (8.2)
Kozloduy	13.9 (3.4)	23.6 (4.2)	12.0 (3.0)	12.5 (5.1)	3.5 (1.5)	26.8 (6.1)	6.9 (2.7)	1.3 (0.8)	13.0 (3.2)	14.8 (3.7)
Koprivshtitsa	20.7 (5.0)	23.7 (6.3)	16.8 (4.6)	30.6 (6.4)	11.5 (3.7)	34.0 (7.1)	14.7 (4.5)	9.6 (3.4)	20.1 (5.0)	21.2 (5.0)
Kostenets	22.2 (5.3)	28.4 (6.3)	18.3 (4.8)	32.6 (6.9)	10.6 (3.9)	38.4 (7.6)	13.9 (4.6)	8.0 (2.9)	21.1 (5.2)	23.3 (5.4)
Kostinbrod	8.7 (2.6)	8.4 (3.1)	6.3 (2.1)	17.1 (4.2)	3.5 (1.5)	17.7 (4.5)	5.3 (2.0)	3.5 (1.4)	8.1 (2.5)	9.3 (2.7)
Kotel	57.2 (7.4)	70.6 (6.1)	54.4 (7.2)	55.0 (9.8)	34.0 (7.5)	64.7 (7.8)	36.8 (8.2)	14.8 (4.8)	55.9 (7.4)	58.6 (7.4)
Kocherinovo	33.8 (6.0)	33.1 (7.5)	26.1 (5.6)	47.6 (7.0)	18.4 (5.0)	49.3 (7.3)	21.6 (5.4)	14.6 (4.5)	31.6 (6.0)	35.9 (6.1)
Kresna	26.1 (5.1)	25.3 (6.8)	21.1 (4.6)	39.8 (6.5)	15.7 (4.1)	39.2 (6.4)	16.9 (4.4)	9.2 (2.7)	25.0 (5.1)	27.2 (5.2)
Krivodol	45.9 (6.6)	64.6 (5.6)	42.7 (5.8)	44.6 (8.2)	24.1 (5.1)	54.4 (7.3)	32.0 (6.5)	14.6 (4.2)	43.6 (6.5)	48.2 (6.6)
Krichim	36.6 (5.1)	53.2 (4.7)	32.9 (4.6)	35.3 (7.8)	12.5 (3.4)	51.0 (6.5)	17.8 (4.5)	7.3 (2.6)	35.0 (5.0)	38.0 (5.2)
Krumovgrad	32.8 (5.8)	42.1 (5.7)	29.2 (5.5)	38.9 (7.7)	16.9 (4.7)	39.0 (6.8)	20.5 (5.0)	8.0 (2.6)	31.7 (5.8)	33.9 (5.9)
Krushari	53.0 (7.3)	71.8 (6.0)	49.2 (7.0)	49.2 (10.1)	27.7 (6.9)	57.1 (8.2)	29.0 (7.3)	12.3 (4.7)	50.9 (7.4)	55.1 (7.3)
Kubrat	39.2 (7.1)	49.0 (6.8)	35.7 (6.5)	44.5 (9.0)	20.4 (5.7)	48.8 (8.0)	25.6 (6.5)	10.1 (3.8)	37.3 (7.0)	41.0 (7.1)
Kuklen	22.1 (5.5)	26.3 (5.5)	19.1 (4.8)	28.8 (7.9)	10.4 (3.8)	33.4 (7.4)	14.2 (4.7)	5.9 (2.5)	20.7 (5.2)	23.4 (5.7)
Kula	31.9 (6.7)	39.0 (6.2)	27.7 (5.8)	36.9 (8.7)	15.3 (4.7)	45.0 (8.6)	25.0 (6.3)	9.9 (3.5)	29.0 (6.5)	34.6 (6.9)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Kardzhali	26.3 (3.9)	32.8 (3.9)	23.9 (3.6)	30.7 (5.6)	10.9 (2.5)	39.2 (5.3)	18.0 (3.5)	6.6 (1.7)	24.9 (3.8)	27.7 (4.0)
Kyustendil	22.6 (4.5)	26.8 (5.3)	18.6 (4.2)	32.8 (5.6)	10.4 (3.3)	40.5 (6.4)	16.5 (4.3)	9.7 (2.8)	21.5 (4.5)	23.6 (4.6)
Levski	32.1 (5.2)	45.5 (5.0)	29.2 (4.7)	32.9 (6.8)	13.3 (3.7)	44.8 (6.4)	21.4 (4.9)	9.3 (3.1)	30.0 (5.1)	34.1 (5.4)
Lesichovo	43.9 (6.2)	61.0 (5.4)	40.3 (5.5)	43.7 (8.5)	18.8 (4.6)	54.1 (7.1)	25.5 (5.7)	15.1 (4.9)	41.6 (6.1)	46.2 (6.3)
Letnitsa	44.5 (8.1)	64.3 (6.6)	41.1 (7.4)	41.4 (10.7)	19.1 (6.1)	56.6 (9.4)	30.2 (8.2)	15.1 (6.3)	43.2 (8.1)	45.7 (8.1)
Lovech	26.8 (4.1)	31.8 (3.9)	23.1 (3.7)	34.7 (5.6)	12.6 (3.2)	46.1 (5.2)	24.4 (4.4)	10.0 (2.6)	24.5 (4.0)	28.9 (4.2)
Loznitsa	39.3 (6.4)	48.1 (6.3)	36.4 (6.0)	44.3 (8.2)	25.1 (5.6)	46.2 (7.2)	28.3 (5.7)	11.1 (3.5)	37.2 (6.4)	41.4 (6.3)
Lom	32.8 (4.6)	45.2 (4.5)	30.1 (4.2)	33.8 (6.2)	15.8 (3.5)	50.3 (5.7)	24.0 (4.6)	9.1 (2.6)	30.7 (4.4)	34.8 (4.8)
Lukovit	46.9 (5.6)	65.8 (4.6)	42.9 (5.2)	42.2 (7.8)	18.9 (4.7)	62.2 (6.1)	29.3 (6.3)	12.4 (3.9)	44.8 (5.5)	48.8 (5.7)
Laki	19.9 (5.8)	16.5 (6.0)	15.1 (4.9)	37.1 (9.6)	8.2 (3.6)	31.4 (8.2)	12.6 (4.6)	5.7 (2.5)	16.9 (5.5)	22.8 (6.2)
Lyubimets	33.3 (5.5)	50.1 (4.6)	29.0 (4.8)	33.9 (8.2)	11.2 (3.6)	47.3 (7.1)	16.9 (5.2)	6.5 (2.8)	31.6 (5.4)	34.9 (5.6)
Lyaskovets	26.7 (5.2)	30.6 (5.2)	23.4 (4.6)	34.6 (7.0)	13.6 (4.1)	41.3 (6.6)	22.0 (5.1)	9.5 (2.9)	24.2 (4.9)	29.0 (5.4)
Madan	30.0 (6.0)	30.3 (6.0)	26.1 (5.7)	48.6 (8.4)	14.5 (4.4)	39.6 (7.4)	22.7 (5.3)	10.2 (3.3)	27.1 (6.0)	32.8 (6.1)
Madzharovo	35.9 (8.6)	38.7 (8.2)	31.2 (7.7)	44.0 (10.9)	16.9 (6.5)	45.2 (9.9)	23.2 (7.9)	10.7 (5.1)	33.3 (8.4)	38.5 (8.8)
Makresh	42.7 (9.4)	56.9 (10.6)	38.5 (8.4)	44.9 (10.6)	24.1 (8.0)	51.0 (10.4)	33.7 (9.0)	18.0 (7.6)	40.1 (9.5)	45.1 (9.4)
Malko Tarnovo	28.0 (6.3)	41.7 (6.8)	23.0 (5.0)	31.2 (8.7)	13.1 (3.7)	38.9 (8.5)	15.0 (4.9)	5.5 (2.7)	24.9 (5.8)	30.8 (6.7)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Maritsa	28.0 (4.9)	39.9 (4.9)	25.1 (4.5)	29.2 (6.7)	12.0 (3.3)	40.4 (6.5)	14.7 (4.0)	6.5 (2.2)	26.9 (4.8)	29.2 (5.0)
Medkovets	46.1 (7.2)	65.1 (6.7)	43.4 (6.4)	43.9 (8.7)	25.8 (6.2)	54.6 (8.1)	32.5 (6.9)	14.0 (5.1)	43.6 (7.0)	48.5 (7.4)
Mezdra	27.8 (5.0)	35.0 (4.9)	24.5 (4.5)	33.6 (6.6)	14.1 (3.7)	42.1 (6.4)	23.8 (5.0)	9.7 (2.8)	25.9 (4.8)	29.6 (5.2)
Mizia	38.4 (7.0)	46.5 (6.7)	34.7 (6.5)	43.6 (8.5)	20.9 (5.8)	51.0 (8.1)	29.5 (6.7)	12.9 (4.5)	35.9 (6.9)	40.7 (7.0)
Mineralni bani	28.0 (6.2)	30.5 (6.5)	24.6 (5.7)	36.5 (8.0)	14.1 (4.3)	35.5 (7.3)	19.2 (5.3)	9.4 (3.2)	26.3 (6.1)	29.7 (6.3)
Mirkovo	14.0 (5.4)	14.1 (6.8)	9.4 (4.3)	22.4 (7.6)	5.2 (2.9)	23.5 (8.1)	6.4 (3.5)	4.3 (3.0)	12.1 (5.0)	15.9 (5.8)
Momchilgrad	34.9 (7.8)	37.7 (7.8)	31.6 (7.3)	47.9 (10.2)	18.5 (6.0)	43.6 (8.9)	25.6 (7.0)	11.8 (4.2)	33.6 (7.7)	36.4 (7.9)
Montana	19.7 (6.0)	27.8 (6.0)	17.5 (5.4)	22.8 (8.6)	8.6 (4.2)	35.9 (8.6)	15.4 (6.0)	5.5 (3.0)	18.4 (5.8)	21.0 (6.3)
Maglzh	47.1 (4.9)	68.8 (4.1)	43.7 (4.5)	39.7 (6.8)	17.7 (3.8)	60.6 (5.5)	24.5 (5.1)	11.4 (3.6)	45.6 (4.8)	48.6 (5.0)
Nevestino	55.7 (7.4)	58.4 (9.3)	44.5 (7.4)	65.4 (7.5)	30.4 (6.7)	67.6 (7.1)	38.6 (8.4)	35.5 (9.3)	54.0 (7.6)	57.5 (7.3)
Nedelino	40.0 (7.0)	37.2 (7.0)	35.5 (6.8)	62.9 (8.2)	21.7 (5.9)	53.1 (7.9)	33.7 (6.9)	15.7 (4.8)	37.2 (7.1)	42.7 (7.0)
Nesebar	24.2 (5.1)	29.7 (5.4)	21.8 (4.7)	29.9 (7.3)	11.9 (3.5)	37.1 (7.0)	19.2 (4.8)	9.6 (2.9)	22.7 (5.0)	25.6 (5.3)
Nikola Kozlevo	50.6 (7.7)	63.8 (7.3)	48.0 (7.4)	44.8 (9.6)	28.8 (7.3)	53.9 (8.1)	31.1 (7.7)	13.7 (4.8)	49.3 (7.6)	51.9 (7.7)
Nikolaevo	52.9 (5.8)	77.1 (4.6)	47.6 (5.5)	40.3 (8.7)	13.5 (4.5)	63.7 (6.6)	23.4 (6.3)	11.2 (5.1)	51.8 (5.8)	53.9 (5.9)
Nikopol	41.3 (6.6)	59.6 (5.9)	37.9 (5.9)	41.2 (8.3)	17.8 (5.0)	50.1 (7.4)	27.2 (6.4)	12.6 (4.6)	39.4 (6.6)	43.1 (6.7)
Nova Zagora	37.4 (4.3)	57.6 (3.9)	34.0 (3.9)	31.5 (6.5)	12.2 (3.0)	52.5 (5.4)	16.2 (4.1)	7.1 (2.3)	35.6 (4.2)	39.1 (4.5)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Novi pazar	33.7 (5.2)	46.2 (4.8)	30.7 (4.7)	34.3 (7.3)	15.1 (3.7)	47.4 (6.5)	21.8 (4.8)	7.8 (2.7)	31.8 (5.0)	35.4 (5.4)
Novo selo	34.1 (8.2)	51.5 (8.0)	31.6 (7.3)	33.8 (9.5)	18.5 (6.2)	42.1 (9.3)	23.8 (7.6)	13.6 (6.3)	30.9 (8.0)	36.9 (8.4)
Omurtag	42.3 (5.7)	52.6 (5.9)	39.7 (5.4)	44.0 (7.2)	21.9 (4.7)	49.7 (6.3)	28.1 (5.2)	10.5 (3.0)	41.0 (5.6)	43.6 (5.8)
Opaka	41.3 (7.8)	46.7 (8.1)	38.8 (7.4)	46.7 (9.4)	26.3 (6.7)	47.2 (8.5)	31.6 (7.0)	15.8 (5.2)	39.6 (7.7)	43.1 (7.9)
Opan	41.7 (7.5)	62.6 (6.8)	37.6 (6.3)	42.1 (9.2)	17.9 (5.2)	47.3 (8.3)	25.7 (6.8)	13.5 (6.0)	39.0 (7.5)	44.3 (7.6)
Oryahovo	35.2 (6.3)	49.4 (5.8)	32.2 (5.6)	35.3 (8.1)	14.1 (4.6)	46.7 (7.5)	24.5 (6.1)	9.1 (3.3)	33.4 (6.2)	37.0 (6.4)
Pavel banya	38.0 (6.5)	53.4 (6.2)	34.5 (6.0)	36.9 (8.6)	17.0 (4.9)	49.1 (7.7)	21.0 (5.9)	9.6 (3.5)	36.4 (6.4)	39.5 (6.6)
Pavlikeni	40.9 (5.7)	54.9 (5.1)	36.9 (5.2)	43.8 (7.4)	18.9 (4.5)	57.1 (6.6)	29.9 (5.9)	14.0 (3.6)	38.7 (5.6)	43.1 (5.8)
Pazardzhik	34.1 (4.7)	45.5 (4.5)	31.0 (4.2)	37.3 (6.6)	14.6 (3.2)	54.4 (6.0)	22.3 (4.5)	9.7 (2.5)	32.5 (4.5)	35.6 (4.8)
Panagyurishte	15.8 (3.3)	21.9 (3.3)	13.5 (2.8)	19.9 (5.4)	5.1 (1.7)	27.4 (5.2)	9.4 (2.7)	3.5 (1.3)	14.3 (3.1)	17.3 (3.6)
Pernik	17.0 (4.0)	19.6 (5.0)	14.2 (3.7)	25.2 (4.9)	9.3 (3.0)	30.8 (5.7)	13.1 (3.7)	7.6 (2.4)	16.4 (4.0)	17.5 (4.1)
Perushtitsa	32.9 (5.7)	49.1 (5.8)	29.8 (5.2)	31.0 (7.9)	14.3 (4.0)	47.8 (7.5)	15.4 (4.8)	7.6 (3.2)	31.0 (5.6)	34.7 (5.9)
Petrich	21.8 (5.4)	26.3 (6.4)	17.9 (4.9)	33.4 (7.0)	12.4 (4.0)	34.0 (7.3)	14.2 (4.5)	8.8 (3.0)	21.0 (5.3)	22.6 (5.4)
Peshtera	30.6 (5.1)	44.2 (4.7)	28.0 (4.7)	29.4 (7.4)	12.4 (3.7)	47.6 (6.4)	16.7 (5.0)	7.0 (2.7)	29.4 (4.9)	31.9 (5.3)
Pirdop	7.9 (2.6)	11.1 (3.6)	6.3 (2.2)	10.8 (3.8)	2.8 (1.4)	16.3 (4.8)	4.6 (2.0)	2.2 (1.1)	7.3 (2.5)	8.4 (2.8)
Pleven	22.2 (3.2)	30.0 (3.2)	19.7 (2.9)	26.3 (4.5)	10.5 (2.3)	41.8 (4.3)	19.8 (3.5)	8.0 (1.9)	20.4 (3.0)	23.9 (3.4)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Plovdiv	17.9 (1.4)	23.8 (1.6)	16.4 (1.3)	19.7 (2.2)	6.7 (0.9)	38.9 (2.5)	15.4 (1.5)	5.9 (0.9)	16.2 (1.3)	19.4 (1.5)
Polски Trambesh	46.3 (6.4)	61.6 (5.3)	42.7 (5.7)	46.7 (8.5)	21.5 (5.1)	58.7 (7.1)	32.3 (6.6)	14.4 (4.5)	43.9 (6.4)	48.6 (6.4)
Pomorie	28.8 (5.1)	39.5 (5.3)	25.9 (4.7)	31.1 (7.1)	12.7 (3.6)	42.0 (6.5)	16.9 (4.5)	7.0 (2.5)	27.2 (5.0)	30.3 (5.2)
Popovo	36.1 (5.8)	45.9 (5.5)	32.7 (5.3)	40.4 (7.7)	16.9 (4.8)	50.9 (6.6)	25.4 (5.9)	11.0 (3.7)	33.9 (5.7)	38.2 (5.9)
Pordim	36.8 (7.4)	52.8 (6.6)	33.7 (6.6)	36.7 (9.1)	17.6 (5.5)	48.3 (8.5)	24.8 (7.0)	13.6 (5.6)	34.4 (7.2)	39.1 (7.5)
Pravets	35.9 (4.1)	55.0 (4.8)	29.2 (3.7)	42.9 (5.7)	11.3 (2.6)	57.8 (5.9)	18.6 (3.7)	9.5 (2.4)	35.6 (4.1)	36.2 (4.2)
Primorsko	29.9 (6.9)	33.9 (7.2)	26.3 (6.2)	40.2 (9.9)	15.9 (5.3)	42.5 (8.5)	22.7 (6.3)	14.0 (4.7)	27.4 (6.7)	32.3 (7.1)
Provadia	36.3 (6.0)	51.0 (5.8)	33.3 (5.3)	35.0 (8.4)	16.4 (4.2)	49.6 (7.4)	22.8 (5.5)	8.2 (2.7)	34.8 (5.9)	37.9 (6.1)
Parvomay	25.9 (4.0)	35.5 (4.1)	22.9 (3.5)	28.9 (5.4)	9.8 (2.4)	36.7 (5.2)	14.0 (3.2)	6.0 (1.7)	24.2 (3.8)	27.4 (4.1)
Radnevo	14.5 (3.7)	25.6 (4.2)	11.9 (3.0)	15.9 (5.9)	4.0 (1.6)	22.8 (5.8)	6.6 (2.5)	2.7 (1.1)	13.2 (3.4)	15.8 (4.1)
Radomir	29.1 (4.8)	31.6 (5.1)	23.0 (4.3)	44.0 (6.3)	13.1 (3.5)	47.8 (6.2)	19.5 (4.4)	11.8 (3.1)	28.1 (4.7)	30.1 (4.8)
Razgrad	21.5 (4.1)	26.8 (4.1)	19.6 (3.8)	25.0 (5.6)	9.9 (3.0)	35.4 (5.7)	17.0 (4.0)	6.1 (2.1)	19.5 (3.8)	23.3 (4.3)
Razlog	18.2 (4.0)	25.1 (5.1)	15.4 (3.6)	24.0 (5.1)	9.0 (2.7)	31.6 (5.9)	11.5 (3.4)	5.8 (2.0)	17.2 (3.9)	19.2 (4.1)
Rakitovo	47.9 (5.5)	59.2 (5.2)	45.4 (5.3)	47.2 (7.2)	23.4 (4.6)	59.3 (6.2)	29.7 (5.3)	10.6 (3.0)	46.6 (5.6)	49.3 (5.5)
Rakovski	23.3 (4.5)	35.8 (4.6)	19.9 (4.1)	26.0 (6.3)	9.8 (3.1)	31.2 (5.8)	11.5 (3.6)	5.2 (2.0)	22.4 (4.4)	24.1 (4.7)
Rila	33.0 (5.6)	32.7 (6.3)	25.7 (5.2)	48.0 (6.7)	15.7 (4.4)	54.3 (6.9)	21.4 (5.4)	14.7 (4.5)	30.5 (5.7)	35.4 (5.4)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Rodopi	18.0 (4.5)	24.0 (4.2)	15.5 (3.8)	22.3 (6.7)	6.7 (2.5)	28.6 (6.4)	11.5 (3.7)	4.8 (2.1)	16.6 (4.3)	19.4 (4.7)
Roman	41.7 (8.0)	60.7 (7.3)	38.5 (7.3)	40.8 (10.2)	22.7 (6.7)	55.4 (8.8)	32.5 (8.3)	16.4 (6.0)	39.7 (8.0)	43.7 (8.0)
Rudozem	25.1 (5.4)	23.0 (5.2)	21.5 (4.8)	43.8 (8.8)	11.6 (3.6)	36.2 (7.2)	19.0 (4.6)	8.1 (2.7)	22.7 (5.2)	27.4 (5.6)
Ruen	42.5 (6.8)	49.3 (6.7)	39.5 (6.6)	50.2 (8.8)	23.5 (6.0)	46.3 (7.2)	29.2 (6.5)	13.5 (4.3)	41.2 (6.8)	43.9 (6.8)
Ruzhintsi	54.8 (8.1)	72.6 (6.5)	50.9 (7.4)	54.2 (10.3)	31.1 (7.7)	64.4 (8.6)	41.8 (8.6)	19.8 (7.1)	52.6 (8.1)	56.9 (8.2)
Ruse	19.1 (3.9)	22.8 (3.9)	17.5 (3.5)	22.9 (5.6)	9.3 (2.7)	33.2 (5.6)	17.9 (4.1)	6.9 (2.1)	17.3 (3.6)	20.8 (4.1)
Sadovo	40.3 (7.6)	56.8 (6.8)	36.6 (7.0)	39.6 (10.0)	20.9 (6.2)	51.8 (8.7)	21.8 (7.2)	12.1 (4.9)	38.9 (7.5)	41.7 (7.7)
Samokov	29.2 (4.7)	38.9 (5.7)	24.3 (4.4)	38.5 (5.6)	12.1 (3.2)	47.8 (6.7)	17.2 (4.0)	9.3 (2.5)	28.1 (4.7)	30.2 (4.8)
Samuil	39.0 (7.4)	48.5 (7.3)	36.3 (7.0)	42.3 (9.5)	23.6 (6.4)	43.9 (8.1)	25.4 (6.6)	12.5 (4.6)	37.5 (7.4)	40.7 (7.5)
Sandanski	22.6 (4.7)	25.9 (5.8)	18.2 (4.3)	36.9 (5.8)	12.5 (3.5)	38.9 (6.6)	14.7 (4.0)	9.3 (2.7)	21.7 (4.6)	23.5 (4.7)
Sapareva banya	24.8 (5.2)	25.7 (5.8)	20.9 (4.8)	35.0 (6.6)	13.9 (3.9)	37.6 (6.8)	18.2 (4.6)	11.6 (3.5)	24.2 (5.1)	25.3 (5.3)
Satovcha	24.0 (6.2)	28.0 (7.2)	21.2 (5.8)	33.2 (7.6)	13.1 (4.7)	29.4 (7.2)	18.2 (5.4)	9.1 (3.3)	23.3 (6.1)	24.6 (6.3)
Svilengrad	25.2 (4.0)	33.0 (3.8)	21.5 (3.5)	33.2 (6.1)	10.7 (2.7)	41.9 (5.5)	15.4 (3.6)	7.2 (2.2)	23.6 (3.8)	26.8 (4.1)
Svishtov	27.1 (4.9)	30.4 (4.6)	24.6 (4.4)	33.2 (6.9)	10.8 (3.3)	40.9 (6.7)	24.7 (4.9)	7.8 (2.7)	24.7 (4.8)	29.4 (5.0)
Svoqe	15.2 (4.1)	14.1 (4.4)	10.6 (3.5)	28.4 (6.2)	5.9 (2.6)	28.6 (6.4)	8.2 (3.2)	4.7 (1.9)	14.3 (4.0)	16.1 (4.2)
Sevlievo	25.4 (4.1)	33.3 (4.1)	21.4 (3.5)	31.6 (5.7)	11.7 (2.8)	40.0 (5.4)	18.5 (3.9)	7.5 (2.0)	23.0 (3.9)	27.6 (4.2)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Septemvri	32.5 (7.1)	47.5 (6.9)	29.9 (6.6)	30.1 (9.3)	13.4 (5.3)	45.1 (8.5)	17.6 (6.6)	6.8 (3.8)	31.2 (7.0)	33.7 (7.2)
Silistra	19.1 (4.6)	25.0 (4.5)	17.1 (4.0)	22.8 (6.6)	7.4 (2.8)	31.9 (6.6)	15.6 (4.4)	5.5 (2.1)	17.5 (4.3)	20.7 (4.8)
Simeonovgrad	42.6 (6.3)	62.1 (5.9)	38.7 (5.8)	38.7 (8.6)	17.6 (4.7)	53.9 (7.4)	22.8 (5.8)	9.8 (3.9)	40.7 (6.2)	44.5 (6.4)
Simitli	28.9 (5.3)	33.6 (6.2)	24.0 (4.9)	43.2 (6.5)	15.4 (4.1)	40.3 (6.2)	18.9 (4.8)	10.5 (3.1)	28.1 (5.2)	29.7 (5.3)
Sitovo	31.2 (6.2)	44.1 (6.3)	27.8 (5.6)	32.6 (8.0)	15.1 (4.3)	36.1 (7.2)	19.0 (5.1)	9.0 (3.2)	29.6 (6.1)	32.7 (6.4)
Sliven	35.1 (4.4)	51.9 (3.9)	30.6 (4.0)	36.1 (6.7)	11.5 (2.9)	54.3 (5.6)	21.2 (4.5)	8.4 (2.2)	33.6 (4.2)	36.5 (4.5)
Slivnitsa	16.4 (3.6)	18.2 (4.7)	12.1 (3.0)	28.6 (5.1)	7.5 (2.4)	30.7 (5.6)	10.2 (2.9)	6.2 (1.9)	15.6 (3.5)	17.1 (3.7)
Slivo pole	33.0 (5.0)	44.6 (4.9)	30.5 (4.5)	33.8 (6.4)	14.1 (3.6)	40.5 (5.9)	18.6 (4.0)	8.4 (2.7)	30.7 (4.8)	35.2 (5.2)
Smolyan	25.4 (4.8)	25.7 (4.6)	21.7 (4.3)	39.8 (7.5)	12.3 (3.3)	43.1 (7.0)	22.0 (4.7)	9.5 (2.7)	22.9 (4.6)	27.7 (5.0)
Smyadovo	39.7 (6.7)	52.4 (6.1)	36.1 (6.0)	41.9 (8.8)	20.2 (5.2)	48.1 (7.7)	24.3 (5.9)	10.7 (3.9)	37.3 (6.5)	42.0 (6.8)
Sozopol	34.7 (5.5)	43.7 (5.5)	30.1 (4.9)	43.1 (7.7)	16.8 (4.0)	49.6 (6.9)	22.8 (5.1)	10.3 (3.0)	32.7 (5.4)	36.6 (5.6)
Sopot	17.8 (4.1)	20.4 (4.3)	15.4 (3.6)	26.6 (6.7)	8.2 (2.8)	32.6 (6.1)	14.6 (4.0)	6.3 (2.1)	15.7 (3.8)	19.9 (4.5)
Sredets	37.3 (5.3)	55.6 (5.0)	32.4 (4.6)	38.4 (8.0)	13.9 (3.4)	50.0 (6.8)	20.1 (4.6)	7.4 (2.6)	34.7 (5.2)	39.7 (5.5)
Stamboliyski	32.1 (4.5)	49.0 (4.3)	28.1 (4.0)	33.0 (6.5)	13.4 (3.2)	45.9 (5.7)	17.3 (4.0)	8.5 (2.4)	30.5 (4.4)	33.7 (4.6)
Stambolovo	32.5 (6.1)	37.8 (6.5)	29.0 (5.6)	39.9 (7.8)	18.7 (5.0)	36.8 (6.6)	20.8 (5.2)	10.6 (4.0)	30.9 (6.0)	34.2 (6.2)
Stara Zagora	17.6 (3.2)	23.4 (3.1)	15.2 (2.7)	22.8 (5.3)	6.6 (2.0)	35.7 (5.0)	13.6 (3.2)	5.0 (1.6)	16.0 (3.0)	19.1 (3.3)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Stolichna	6.6 (1.0)	7.1 (1.4)	5.9 (1.0)	9.4 (1.4)	3.4 (0.8)	14.6 (2.3)	6.7 (1.1)	4.0 (0.7)	6.3 (1.0)	6.9 (1.0)
Strazhitsa	47.0 (7.0)	63.2 (6.3)	42.9 (6.3)	46.5 (9.8)	22.3 (5.7)	59.4 (7.9)	28.3 (6.9)	12.4 (4.3)	45.0 (6.9)	49.0 (7.1)
Straldzha	40.0 (5.8)	64.9 (4.5)	35.4 (4.9)	35.4 (8.7)	12.3 (3.8)	48.5 (7.2)	16.9 (5.0)	6.0 (2.6)	37.7 (5.6)	42.3 (5.9)
Strelcha	28.8 (5.3)	37.1 (5.2)	25.3 (4.5)	33.9 (7.7)	10.3 (3.2)	43.0 (6.7)	18.4 (5.0)	8.1 (3.1)	26.9 (5.1)	30.6 (5.5)
Strumyani	47.2 (6.7)	57.9 (8.1)	38.8 (6.6)	58.3 (7.1)	26.1 (6.0)	58.9 (7.6)	26.0 (6.0)	15.2 (5.0)	44.8 (6.9)	49.5 (6.6)
Suvorovo	35.7 (5.7)	49.5 (5.4)	32.9 (5.1)	33.9 (8.0)	16.6 (4.2)	45.8 (6.9)	20.2 (5.1)	8.6 (2.9)	33.5 (5.6)	37.9 (5.8)
Sungurlare	42.7 (6.8)	55.8 (6.6)	39.4 (6.2)	42.7 (8.9)	22.3 (5.5)	50.6 (7.8)	24.1 (6.0)	9.9 (3.6)	40.9 (6.7)	44.4 (7.0)
Suhindol	46.9 (7.1)	64.3 (6.1)	43.3 (6.4)	46.2 (9.4)	26.5 (6.2)	60.8 (7.6)	35.3 (7.6)	18.2 (6.5)	44.1 (7.0)	49.6 (7.2)
Saedinenie	30.0 (5.6)	36.8 (5.1)	25.5 (4.9)	36.8 (7.6)	11.5 (3.8)	41.3 (7.0)	17.5 (4.7)	9.1 (3.3)	28.1 (5.6)	31.9 (5.7)
Tvarditsa	48.5 (5.1)	71.7 (3.6)	43.5 (4.8)	39.6 (8.1)	14.9 (4.3)	60.0 (5.8)	22.5 (5.7)	10.3 (3.5)	47.3 (5.0)	49.7 (5.2)
Tervel	37.5 (5.9)	52.2 (5.8)	35.2 (5.6)	33.0 (7.9)	18.1 (4.5)	45.4 (7.0)	18.5 (4.8)	6.8 (2.5)	36.1 (5.9)	38.9 (6.1)
Teteven	45.6 (5.7)	57.0 (5.2)	42.5 (5.4)	47.2 (7.4)	25.1 (5.0)	61.6 (6.3)	34.7 (6.1)	12.8 (3.6)	43.7 (5.7)	47.4 (5.7)
Topolovgrad	27.9 (6.2)	39.6 (6.3)	23.4 (5.1)	32.9 (8.6)	10.6 (3.4)	37.9 (8.1)	15.5 (4.7)	6.1 (2.3)	25.5 (6.0)	30.3 (6.4)
Treklyano	38.8 (6.6)	38.7 (15.3)	30.2 (6.0)	47.6 (7.8)	22.3 (5.8)	55.0 (7.6)	27.5 (6.5)	25.5 (9.1)	37.9 (6.7)	39.7 (6.7)
Troyan	23.8 (4.7)	25.2 (4.3)	20.1 (4.1)	32.6 (6.5)	11.7 (3.4)	39.5 (6.3)	20.5 (4.7)	9.1 (2.8)	21.2 (4.4)	26.1 (4.9)
Tran	48.0 (6.6)	61.5 (8.1)	40.4 (6.5)	56.6 (7.2)	27.1 (5.8)	62.9 (7.4)	32.2 (6.7)	23.6 (5.6)	46.6 (6.6)	49.4 (6.5)

(Continued)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Tryavna	28.4 (6.4)	32.2 (6.4)	24.4 (5.8)	36.9 (8.2)	16.1 (5.2)	41.8 (7.7)	25.6 (6.6)	13.0 (4.3)	25.7 (6.3)	30.9 (6.5)
Tundzha	32.1 (5.3)	54.0 (4.3)	26.9 (4.3)	33.1 (7.5)	10.9 (2.9)	39.5 (6.7)	15.9 (4.0)	7.9 (2.6)	29.9 (5.1)	34.2 (5.6)
Tutrakan	28.7 (4.9)	35.5 (4.8)	26.1 (4.4)	32.7 (6.5)	13.0 (3.3)	38.5 (6.1)	18.6 (4.1)	7.6 (2.3)	26.7 (4.7)	30.7 (5.0)
Targovishte	31.2 (5.2)	40.8 (5.1)	28.2 (4.8)	35.2 (7.3)	14.9 (4.3)	47.5 (6.4)	22.1 (5.3)	8.7 (3.1)	29.2 (5.1)	33.1 (5.4)
Ugarchin	54.7 (6.8)	74.6 (5.1)	50.5 (6.2)	53.0 (8.9)	26.3 (6.4)	65.5 (7.2)	39.1 (7.5)	21.1 (6.3)	52.0 (6.8)	57.2 (6.8)
Hadzhidimovo	19.1 (4.4)	19.1 (5.1)	15.2 (4.1)	32.7 (5.7)	10.6 (3.5)	27.5 (5.5)	12.1 (3.6)	8.6 (2.7)	18.6 (4.4)	19.7 (4.5)
Hayredin	41.9 (7.6)	57.6 (7.0)	39.1 (6.9)	41.4 (9.3)	23.6 (6.5)	50.7 (8.6)	32.6 (7.4)	16.4 (5.6)	39.6 (7.6)	44.1 (7.7)
Harmanli	31.6 (4.8)	43.7 (4.6)	27.8 (4.3)	36.1 (6.9)	13.4 (3.3)	46.2 (6.3)	19.6 (4.3)	8.0 (2.5)	29.9 (4.7)	33.4 (5.0)
Haskovo	22.8 (4.0)	29.4 (4.0)	20.2 (3.6)	27.6 (5.9)	9.6 (2.7)	38.5 (5.6)	16.2 (3.9)	6.3 (2.0)	21.1 (3.9)	24.3 (4.1)
Hisarya	29.1 (6.3)	33.4 (5.6)	23.8 (5.1)	37.8 (8.8)	10.2 (3.7)	43.1 (8.2)	19.0 (5.4)	8.7 (3.4)	27.1 (6.1)	31.0 (6.4)
Hitrino	36.7 (7.4)	44.6 (7.5)	34.1 (7.0)	39.7 (8.8)	21.4 (6.2)	41.3 (8.0)	23.2 (6.3)	10.9 (4.4)	34.9 (7.3)	38.5 (7.5)
Tsar Kaloyan	33.8 (6.3)	36.7 (6.8)	31.2 (6.0)	40.5 (7.6)	21.5 (5.2)	40.2 (7.1)	25.5 (5.6)	11.5 (3.6)	31.8 (6.3)	35.7 (6.4)
Tsarevo	28.8 (5.7)	35.9 (5.4)	25.4 (5.0)	36.4 (8.6)	11.9 (3.9)	43.4 (7.5)	20.5 (5.3)	8.6 (2.9)	26.8 (5.4)	30.7 (5.9)
Tsenovo	31.0 (6.0)	42.8 (5.9)	27.5 (5.2)	33.7 (7.5)	12.7 (3.8)	39.0 (7.1)	18.8 (5.0)	7.9 (3.2)	28.7 (5.9)	33.4 (6.1)
Chavdar	25.1 (5.6)	32.6 (8.2)	21.4 (5.3)	30.1 (6.4)	12.5 (4.2)	40.0 (7.7)	14.7 (4.7)	9.5 (3.6)	24.0 (5.7)	26.1 (5.7)
Chelopech	2.9 (2.5)	2.7 (2.8)	2.2 (1.9)	5.3 (4.2)	1.0 (1.2)	6.9 (5.5)	1.4 (1.3)	0.7 (0.9)	2.7 (2.3)	3.2 (2.7)

(Continued and end)

Municipality	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
Chepelare	19.5 (4.5)	18.8 (4.2)	15.2 (3.7)	32.1 (7.1)	8.0 (2.7)	32.8 (6.8)	14.7 (3.9)	5.8 (2.0)	16.9 (4.2)	22.0 (4.8)
Cherven bryag	42.5 (5.7)	57.0 (5.0)	39.0 (5.3)	43.7 (7.7)	19.4 (4.6)	59.5 (6.3)	32.5 (6.2)	14.5 (4.0)	40.8 (5.7)	44.2 (5.8)
Chernoochene	25.8 (7.3)	26.9 (7.5)	23.8 (6.7)	32.0 (9.7)	13.0 (5.0)	30.1 (8.2)	19.4 (6.2)	8.4 (3.8)	24.4 (7.1)	27.3 (7.5)
Chiprovtsi	29.7 (6.9)	33.9 (7.4)	25.0 (6.0)	36.4 (8.5)	13.3 (4.7)	39.5 (8.2)	23.7 (6.5)	12.0 (4.1)	27.7 (6.9)	31.7 (6.9)
Chirpan	34.8 (4.8)	51.9 (4.0)	30.9 (4.0)	35.0 (7.3)	11.5 (2.8)	50.9 (6.3)	18.9 (4.4)	7.6 (2.5)	32.7 (4.6)	36.8 (5.0)
Chuprene	45.6 (7.9)	73.4 (6.7)	41.0 (6.8)	43.7 (10.1)	22.1 (6.0)	55.9 (9.1)	28.7 (7.7)	12.9 (5.9)	42.2 (7.7)	48.9 (8.1)
Shabla	24.9 (5.1)	39.6 (5.2)	21.7 (4.4)	26.8 (7.0)	9.8 (3.2)	35.6 (6.7)	14.8 (4.4)	6.2 (2.6)	22.9 (4.8)	26.9 (5.4)
Shumen	20.0 (3.5)	25.3 (3.6)	18.0 (3.2)	23.7 (5.0)	9.0 (2.6)	35.8 (5.0)	16.8 (3.6)	6.2 (1.9)	18.1 (3.3)	21.7 (3.7)
Yablanitsa	49.5 (5.8)	70.5 (4.5)	45.6 (5.2)	41.6 (8.8)	18.9 (4.9)	64.6 (6.3)	30.0 (6.5)	13.4 (4.7)	48.1 (5.6)	50.9 (5.9)
Yakimovo	47.8 (7.9)	66.4 (7.0)	45.4 (7.3)	44.4 (9.7)	25.9 (7.0)	54.0 (8.7)	34.9 (7.9)	19.1 (6.7)	45.7 (7.8)	49.9 (8.1)
Yakoruda	30.4 (6.3)	35.5 (7.8)	27.4 (5.9)	39.6 (7.9)	17.2 (5.3)	38.8 (7.4)	21.3 (5.5)	11.8 (3.9)	29.6 (6.2)	31.1 (6.5)
Yambol	22.7 (2.9)	35.7 (2.9)	19.3 (2.5)	26.4 (4.9)	7.8 (1.8)	42.6 (4.1)	15.2 (3.0)	6.1 (1.5)	21.0 (2.7)	24.4 (3.1)

ANNEX 3

Share of poor in the cities of Sofia, Plovdiv and Varna by districts
(Standard error is pointed in brackets)

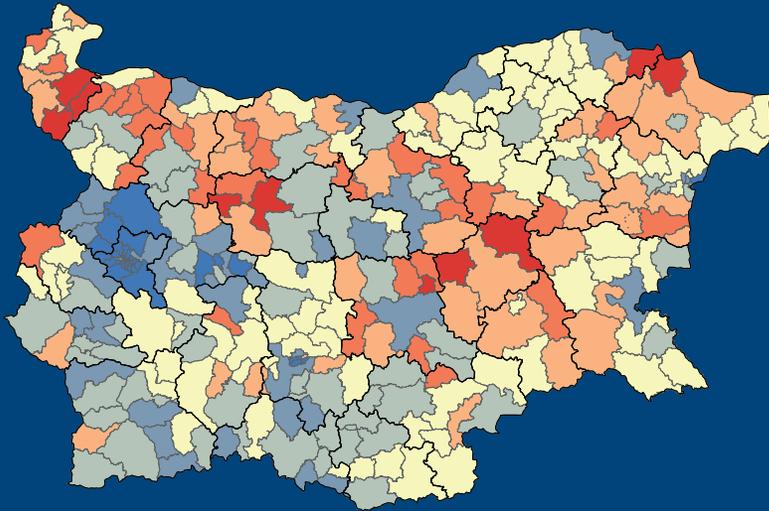
City	District	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
SOFIA	Sredets	6.3 (1.9)	4.8 (1.9)	5.1 (1.6)	9.5 (2.7)	3.1 (1.2)	11.1 (3.1)	7.6 (2.2)	5.7 (1.7)	5.6 (1.7)	6.9 (2.0)
	Krasno selo	4.6 (1.3)	3.5 (1.3)	3.9 (1.1)	7.6 (2.2)	2.5 (0.9)	9.4 (2.4)	5.5 (1.5)	3.7 (1.2)	4.2 (1.2)	4.9 (1.4)
	Vazrazhdane	6.3 (1.8)	7.0 (2.2)	5.6 (1.6)	9.1 (2.5)	3.4 (1.3)	15.6 (4.1)	6.3 (1.9)	4.2 (1.3)	6.1 (1.8)	6.6 (1.9)
	Oborishte	5.7 (1.6)	4.3 (1.6)	4.8 (1.4)	9.0 (2.4)	3.1 (1.1)	11.1 (2.7)	7.0 (2.0)	4.8 (1.4)	5.1 (1.5)	6.2 (1.7)
	Serdika	7.1 (2.3)	8.9 (3.0)	6.2 (2.1)	9.6 (2.9)	3.9 (1.6)	15.2 (4.5)	6.2 (2.2)	4.1 (1.4)	6.9 (2.2)	7.2 (2.3)
	Poduyane	5.9 (1.7)	6.6 (2.1)	5.1 (1.5)	9.4 (2.4)	3.3 (1.2)	12.2 (3.3)	5.4 (1.7)	3.8 (1.1)	5.7 (1.7)	6.1 (1.8)
	Slatina	6.2 (1.7)	7.6 (2.3)	5.4 (1.6)	8.8 (2.3)	3.3 (1.2)	14.7 (3.7)	6.0 (1.8)	3.7 (1.2)	6.0 (1.7)	6.4 (1.8)
	Izgreve	4.7 (1.3)	3.4 (1.2)	4.0 (1.1)	7.4 (2.2)	2.4 (0.9)	9.9 (2.8)	5.7 (1.6)	3.8 (1.1)	4.3 (1.3)	5.0 (1.4)
	Lozenets	5.1 (1.5)	3.7 (1.4)	4.5 (1.4)	8.4 (2.5)	2.7 (1.1)	10.1 (2.8)	6.7 (2.0)	4.2 (1.3)	4.7 (1.5)	5.4 (1.6)
	Triaditsa	5.3 (1.6)	4.1 (1.5)	4.5 (1.4)	8.6 (2.6)	2.8 (1.1)	11.6 (3.1)	6.2 (2.0)	4.4 (1.4)	4.7 (1.5)	5.7 (1.7)
	Krasna polyana	11.2 (3.1)	17.7 (5.1)	9.8 (2.8)	11.1 (2.8)	5.5 (1.9)	22.7 (6.3)	7.1 (2.1)	4.4 (1.3)	11.0 (3.0)	11.4 (3.1)
	Ilinden	5.7 (2.1)	6.5 (2.5)	4.8 (1.9)	8.4 (3.0)	3.0 (1.4)	13.4 (4.2)	5.4 (2.1)	3.8 (1.6)	5.4 (2.0)	6.0 (2.2)
	Nadezhda	6.3 (2.0)	6.9 (2.2)	5.4 (1.8)	9.9 (2.8)	3.6 (1.4)	13.3 (3.5)	5.8 (1.9)	3.9 (1.3)	6.0 (1.9)	6.6 (2.0)

(Continued)

City	District	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
SOFIA	Iskar	5.1 (1.4)	5.9 (1.8)	4.4 (1.3)	8.5 (2.2)	2.8 (1.0)	11.9 (2.9)	4.7 (1.4)	2.9 (0.9)	4.8 (1.4)	5.4 (1.5)
	Mladost	4.5 (1.5)	4.0 (1.6)	4.0 (1.4)	7.1 (2.3)	2.6 (1.1)	10.1 (3.0)	5.0 (1.7)	3.2 (1.1)	4.2 (1.5)	4.7 (1.6)
	Studentski	16.0 (4.2)	8.3 (2.8)	17.0 (4.5)	13.8 (3.6)	7.0 (2.3)	19.9 (4.7)	20.6 (5.5)	8.5 (2.3)	15.6 (4.2)	16.5 (4.3)
	Vitosha	5.1 (1.5)	4.7 (1.6)	4.5 (1.4)	8.8 (2.3)	2.8 (1.0)	12.3 (3.1)	5.4 (1.7)	3.3 (1.1)	4.9 (1.5)	5.3 (1.5)
	Ovcha kupel	4.3 (1.3)	4.6 (1.6)	3.7 (1.2)	7.8 (2.2)	2.4 (0.9)	9.7 (2.6)	4.3 (1.3)	2.8 (0.9)	4.2 (1.3)	4.4 (1.3)
	Lyulin	6.9 (2.0)	8.7 (2.5)	6.1 (1.8)	9.4 (2.5)	3.9 (1.4)	15.5 (3.9)	6.0 (1.8)	3.9 (1.2)	6.6 (1.9)	7.1 (2.0)
	Vrabnitsa	6.0 (2.0)	7.7 (2.6)	5.1 (1.8)	10.1 (3.0)	3.3 (1.3)	12.9 (3.8)	4.8 (1.7)	2.9 (1.1)	5.8 (1.9)	6.2 (2.0)
	Novi Iskar	10.2 (2.9)	11.0 (3.5)	8.3 (2.6)	16.7 (4.0)	5.7 (2.1)	18.1 (4.4)	7.4 (2.4)	5.3 (1.9)	9.9 (2.9)	10.4 (3.0)
	Kremikovtsi	13.0 (3.5)	17.2 (4.7)	11.1 (3.2)	17.6 (4.2)	7.2 (2.6)	21.1 (5.1)	8.9 (2.8)	5.7 (1.9)	12.7 (3.5)	13.4 (3.6)
	Pancharevo	8.2 (2.2)	8.8 (2.6)	6.5 (1.9)	14.3 (3.3)	4.4 (1.6)	16.4 (3.8)	6.1 (1.9)	4.0 (1.3)	7.9 (2.2)	8.5 (2.3)
	Bankya	6.6 (1.9)	6.3 (2.1)	5.7 (1.8)	10.6 (2.6)	3.8 (1.4)	13.3 (3.3)	6.1 (1.9)	3.7 (1.3)	6.4 (1.9)	6.8 (1.9)

(Continued and end)

City	District	Total	Children (0 - 14 years)	Adults (15 - 64 years)	Adults (65+ years)	Employed	Primary and lower education	Secondary education	Tertiary education	Males	Females
PLOVDIV	Tsentralen	13.5 (3.0)	12.0 (2.6)	12.5 (2.6)	17.3 (4.6)	4.8 (1.6)	28.7 (5.3)	17.0 (3.7)	6.1 (1.8)	11.6 (2.6)	15.2 (3.3)
	Iztochen	39.6 (4.3)	56.5 (4.6)	36.9 (4.0)	27.3 (5.3)	15.3 (2.9)	58.6 (5.6)	17.8 (3.6)	6.3 (1.7)	38.1 (4.2)	41.1 (4.3)
	Zapaden	12.4 (3.0)	10.5 (2.8)	11.2 (2.6)	17.9 (5.0)	4.9 (1.8)	22.3 (5.0)	14.1 (3.4)	5.2 (1.7)	10.4 (2.7)	14.1 (3.3)
	Severen	18.1 (3.2)	24.7 (3.1)	16.5 (2.8)	19.3 (5.0)	6.5 (1.8)	39.7 (5.4)	14.8 (3.4)	5.7 (1.6)	16.5 (2.9)	19.5 (3.4)
	Yuzhen	12.7 (2.9)	11.3 (2.5)	11.3 (2.5)	20.4 (4.9)	5.7 (1.7)	22.7 (4.6)	14.1 (3.2)	5.8 (1.6)	10.9 (2.6)	14.4 (3.1)
	Trakia	13.4 (3.2)	12.9 (3.3)	12.6 (3.0)	20.8 (5.5)	6.4 (2.3)	23.8 (5.1)	15.4 (3.6)	5.9 (1.9)	11.8 (3.0)	14.9 (3.5)
VARNA	Odesos	15.7 (3.0)	18.9 (2.9)	14.7 (2.8)	17.5 (4.4)	7.1 (2.1)	34.3 (4.8)	16.7 (3.6)	6.7 (1.8)	14.1 (2.8)	17.2 (3.2)
	Primorski	12.0 (2.5)	9.9 (2.3)	11.9 (2.3)	13.9 (3.8)	4.9 (1.6)	20.4 (4.2)	16.4 (3.2)	5.4 (1.5)	10.7 (2.3)	13.2 (2.7)
	Mladost	14.6 (3.5)	17.5 (3.6)	13.3 (3.2)	18.0 (5.1)	7.1 (2.6)	28.4 (5.4)	13.8 (3.8)	5.8 (2.0)	13.1 (3.3)	15.9 (3.7)
	Vladislav Varnenchik	16.8 (5.4)	23.2 (5.9)	15.3 (5.1)	19.4 (8.2)	8.5 (4.0)	30.2 (7.7)	13.5 (5.4)	5.9 (2.8)	15.2 (5.1)	18.4 (5.8)
	Asparuhovo	20.8 (4.4)	27.6 (4.5)	19.2 (4.0)	21.9 (6.3)	9.8 (3.2)	36.6 (6.2)	14.8 (4.2)	6.1 (2.2)	19.3 (4.1)	22.2 (4.6)



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