

A SPATIAL PERSPECTIVE ON DEMOGRAPHIC CHANGE IN SERBIAN CITIES AND TOWNS

*Marijana Pantić*¹, Institute of Architecture and Urban & Spatial Planning of Serbia, Belgrade, Serbia

The majority of European countries share challenges related to demographic change. A decline in the total population size and population aging have already spread from rural to some urban areas. The case of Serbia is no exception. The focus of this article is the parameters of demographic change analysed particularly for larger (cities) and smaller (towns) urban settlements – population size, birth rate, rate of natural increase, average age of first-time mothers, total fertility rate, share of the young and elderly population, average population age, and developing demographic trends. The paper also stresses the necessity to use other definitions for a “city” than the one used in legislation or statistical reports, by showing the extent to which results might differ depending on the chosen definition. One of the definitions used in this paper relies on a slightly adapted division of settlements used in statistical reporting, while the other is based on the Law on Local Self-Government (2007), the Law on the Territorial Organization of the Republic of Serbia (2007) and functional urban areas defined by the Spatial Plan of the Republic of Serbia. Cities and towns are observed from the perspective of their spatial distribution; therefore, each parameter is considered at the settlement, regional and district level.

Key words: demographic change, urban demography, territorial balance, spatial development, Serbia.

INTRODUCTION

While the global population is increasing (United Nations, 2017), most European countries are dealing with aging populations (European Commission, 2014) and most East-European countries face depopulation (Mohdin, 2018). Even though the processes of depopulation and population aging, known as “demographic change”, were initially related to rural areas, currently they also refer to an increasing number of shrinking cities (Wolff and Weichmann, 2017). These trends are taking place in spite of a decades-long influx of migrants to urban areas, which are the zones of the highest population concentration (Pejin-Stokić and Grečić, 2012). In addition, there are frequent cases where cities within the same country appear to significantly differ from each other, which leads towards a territorial misbalance at the regional, national and thus international level (Pantić and Živanović Miljković, 2010; Elledge, 2015).

The demographics of Serbia are going through undesirable trends regarding the population size, age structure, number of births, fertility rate, etc. (Penev, 2014; Marinković and Radivojević, 2016). In spite of decades-long emigration from rural to urban areas, the general trend of depopulation,

which has lasted since the 1950s, indicates that even immigration zones could be endangered by demographic decline. The “brain-drain”, which has been characteristic of Serbia for some time now, also supports this hypothesis (Kupiszewski *et al.*, 2010).

When preparing the Spatial Plan of the Republic of Serbia (2010), population size was used as one of the criteria for defining functional urban areas [FUAs]. The number of inhabitants taken as the cut-off point between areas with and without the potential for being a FUA was 100,000. The number refers to the population inhabiting units of local self-governance [ULS] that were taken as the gravitation centre for a particular area. After combining with other criteria, a total of 32 FUAs were defined, or 25 FUAs excluding the territory of Kosovo and Metohija. Their distribution on the map shows two obvious and rather large areas with no regional centre and no coverage by FUAs: the Ivanjica-Prijepolje area and Majdanpek-Bor area. These are examples of conspicuous depopulation and emigration zones in the country. In addition, the gravitational power of urban centres in Serbia is not balanced. Almost a quarter of the population lives in the capital city, while the population size of the next biggest cities is much lower – Novi Sad, the second largest, is almost five times smaller, Niš, the third largest, is 1.5 times smaller than Novi Sad, and so on (SORS, 2014a).

¹ Bulevar kralja Aleksandra 73/II, 11000 Belgrade, Serbia
marijana.d.pantic@gmail.com

As the demographics of urban areas, which used to be the most powerful gravitational zones in terms of population migration, are significantly changing, this article analyses the diverse elements of demographic change and their potential outcomes in the future, specifically focusing on cities and towns. Due to the large differences between urban settlements in terms of their population size, this paper aims at a two-tier analysis – one embracing urban settlements of all sizes, and the other focusing solely on the largest urban centres (in the context of Serbia). The paper also addresses the issue of using diverse definitions of cities, which frequently depend on which statistical data are available. In order to save time, scholars frequently use the urban-rural dichotomy applied in statistical reporting (with its all deficiencies) instead of creating a new database, or cities are not defined at all, relying instead on default definitions. Presentation of the potential consequences of the issue is an additional aspect highlighted in the discussion and conclusion sections.

METHODOLOGICAL APPROACH

In addition to the main focus – analysis of the demographic capacity of the urban population in Serbia – this article makes a parallel comparison between two definitions of cities. The purpose of the comparison comes from the fact that there is no commonly used definition, even when it comes to different spatial development analyses. Most analyses of this kind rely on the definition given in statistical reports by the Statistical Office of the Republic of Serbia [SORS]. The disadvantage of the division used in these reports is that the criteria for the typology are not uniform, but are locally declared. There are two groups of settlements recognised – “urban settlements” and “other”. The result is as follows: some functionally rather rural settlements are given the status of an urban settlement, while certain settlements with urban elements (e.g. public services) belong to the group of “other” settlements.

In one of the definitions used in the paper, 122 “urban settlements” were chosen from a list of 179 “urban settlements” used in national statistical reports. The settlements excluded from the list are those that are not the seat of a local self-government unit, and the list was additionally shortened in the case of the capital, where districts kept separate in reports (e.g. Belgrade – Voždovac, Belgrade – Čukarica) were taken as one settlement – Belgrade. The definition is known as “SORS” because it mainly corresponds to the list of “urban settlements” as they are defined in SORS reports.

A city is defined by the Law on Local Self-Government (2007) and the Law on the Territorial Organization of the Republic of Serbia (2007) as a “unit of self-government, which represents the economic, administrative, geographic and cultural centre of a broader area and which has more than 100,000 inhabitants”. This implies that a city is an administratively defined territory consisting of more than one settlement – of which some are urban, while others are rural; a settlement that represents the gravitational centre of the territory is called the “seat of the city”. On the other

hand, a “settlement” is defined by the Law on Territorial Organization as part of the ULS territory with residential buildings, a communal infrastructure and other facilities that fulfil the needs of its permanent residents. The aim of this research is to focus on settlements as such, particularly urban settlements; therefore, another definition that is used in the analysis actually deals with the “seats of the cities” (urban settlements), which are here, for reasons of simplicity, addressed as “cities”. This implies that the definition of a city by legislative acts is not equal to what is here defined as a city: whereas the first definition refers to an administrative territory, the second refers to the urban settlement itself. The concept of a settlement was chosen because this makes the two chosen definitions of cities/towns mutually comparable; hence it was possible to conclude whether the size of a settlement matters in the evaluation of demographic change.

The choice of settlements for the purpose of the second definition is derived from the Law on the Territorial Organization of the Republic of Serbia (2007) and the definition of FUAs in the Spatial Plan of the Republic of Serbia (2010). Namely, the Law counts 27 cities and the City of Belgrade as a ULS with special status, while the Spatial Plan addresses 26 FUAs including the City of Belgrade². Even though both sources rely on the criterion of having “above 100,000 inhabitants”, they actually extend the list of cities and FUAs to areas with a lower number of inhabitants. Since cities as ULSs have a different status in comparison to municipalities (another form of ULS), the decision to embrace even areas with less than 100,000 inhabitants in the Law and in the Plan reflects the political and strategic attitude of the State towards the improvement of territorial and regional balance in the country. On the other hand, the purpose of this paper is to evaluate the actual demographic capacity of the largest settlements. Therefore, the second definition used in this paper embraces settlements that are gravitational centres of ULSs with more than 60,000 inhabitants, with Zaječar as an exception. The Zaječar ULS is the only one to have a smaller population size but still be included in the analysis, because it is the largest ULS below 60,000 inhabitants and it is relevant as a representative from the typical depopulation zone in Serbia. Its specificity is stressed in several places through the analysis. For practical reasons, the definition is abbreviated here to “CS”, which stands for “city seat”, and embraces 23 cities. In other words, a CS or a city seat is basically the largest settlement of the same name as the city or municipality it belongs to.

A slight deviation is made in the case of cities consisting of more than one municipality³. In the case of Belgrade, the SORS definition includes the seats of city municipalities that are considered to be “urban” in statistical reports: Belgrade, Lazarevac, Mladenovac, Sopot, Surčin, Grocka

2 The data refer to the territory of the Republic of Serbia without Kosovo and Metohija. They were not taken into consideration due to the unavailability of statistical data.

3 According to the Law on Local Self-Government (2007) and the Law on Territorial Organization of the Republic of Serbia (2007), the territory of a city (as a ULS) can be divided into two or more city municipalities.

and Obrenovac, while the CS definition includes only the settlement of Belgrade because other listed settlements are not the seats (the largest settlements) of ULSs, but rather the seats of city municipalities. The same principle is adopted for Niš, Vranje and Požarevac. In the case of Novi Sad, both definitions embrace the settlements of Novi Sad and Petrovaradin, because they practically represent a continuous built-up area.

For the natural components of population growth – birth-rate, rate of natural increase – statistical data are available only at the ULS level, since an analysis of these indicators was not conducted at the settlement level. Instead, the data for cities with more than one municipality were calculated only for municipalities that have at least one settlement classified as urban by SORS. This drawback is not the consequence of the methodology set for this research, but it is a general issue due to data availability being solely at the ULS level.

Values at the regional/district level are calculated as the sum of or as the average value of all cities that are located in the corresponding region/district, as defined by the SORS and CS definitions.

The demographic elements analysed here are related to the main aspects of demographic change: depopulation and population aging. Therefore, an analysis of the cities and towns, as defined in this section, was conducted by considering: population growth over a long time-span – from 1948 to 2011; the birth rate (number of live-born per 1,000 inhabitants); the average age of first-time mothers; the average number of children per mother for each year between 2008 and 2016; the share of the young population (0-14) compared to the share of the elderly population (65+); and the average age of the population for the last two censuses (2002 and 2011). The difference in these time-spans by groups of indicators was partially a result of the character of each variable, but also because of the rational use of time, since some data sets are still not available in digitalised form (older publications).

ANALYSIS

Population size (1948-2011)

Between 1948 and 2011, the population in Serbia increased by 10.1%. This growth occurred mainly in urban settlements: in cities and towns defined by SORS the population size increased by 148.7%, but according to the Spatial Plan definition by 208.2%. In other settlements, the population decreased by 39.4% or 22.3% respectively, depending on the definition (based on SORS, 2014a).

The population in Serbia increased until 1981, after which it started to decline. When observed according to the settlement division presented in SORS publications, where settlements are differentiated as urban and other based on traditional, locally set and mutually uncoordinated criteria, the number of inhabitants in cities (with insignificant fluctuations) has been stagnant since 1981 (Figure 1). The right-hand side of Figure 1 shows that the population in CS cities increased for a decade longer (until 1991), although it still had a rather stagnant character.

Following the SORS settlement definition, the population in rural areas was higher than the population in urban settlements until the inter-census period 1981-1991, while application of the CS definition shows that the rural population has always been higher and will equalise with the urban population only in the future (Figure 1).

Regional aspect – population size

From 1948 to 2011, the Belgrade region encountered the most significant change in the urban population size (SORS definition). Even though the size of the urban population in the Vojvodina region was highest until 1971, the urban population of the Belgrade region overtook it after this. A period of fast growth for all regions lasted until 1981, after which the size of the population in cities started to stagnate, fluctuate or even slightly decline. The Šumadija and West Serbia region is the only region where the urban population has been constantly growing, in the Belgrade region a decrease in the size of the urban population occurred in

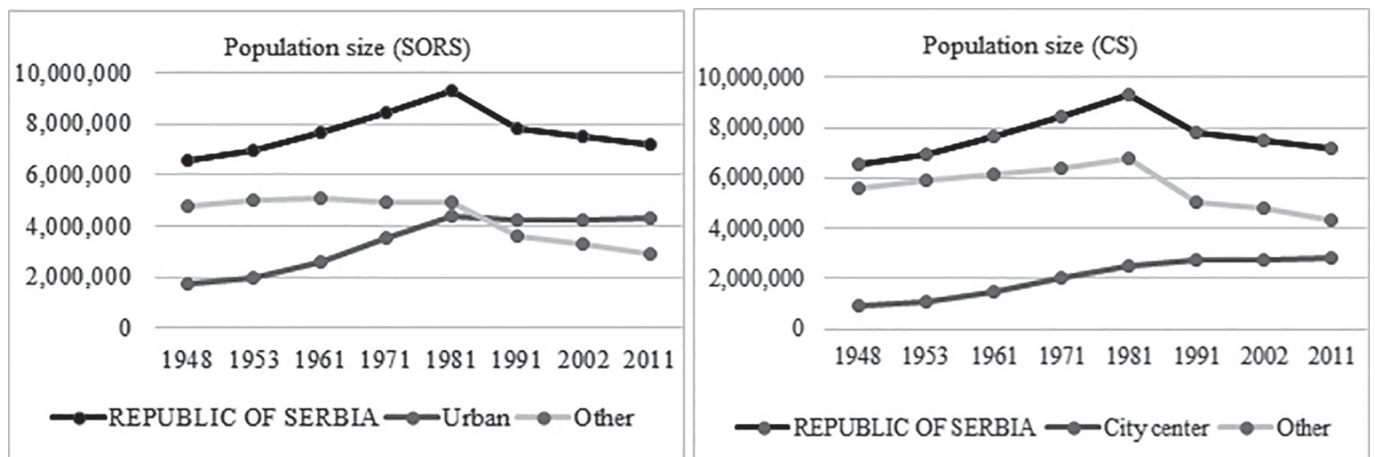


Figure 1. Population size 1948-2011 (SORS and CS definitions)
(Source: elaborated by the author based on SORS, 2014a)

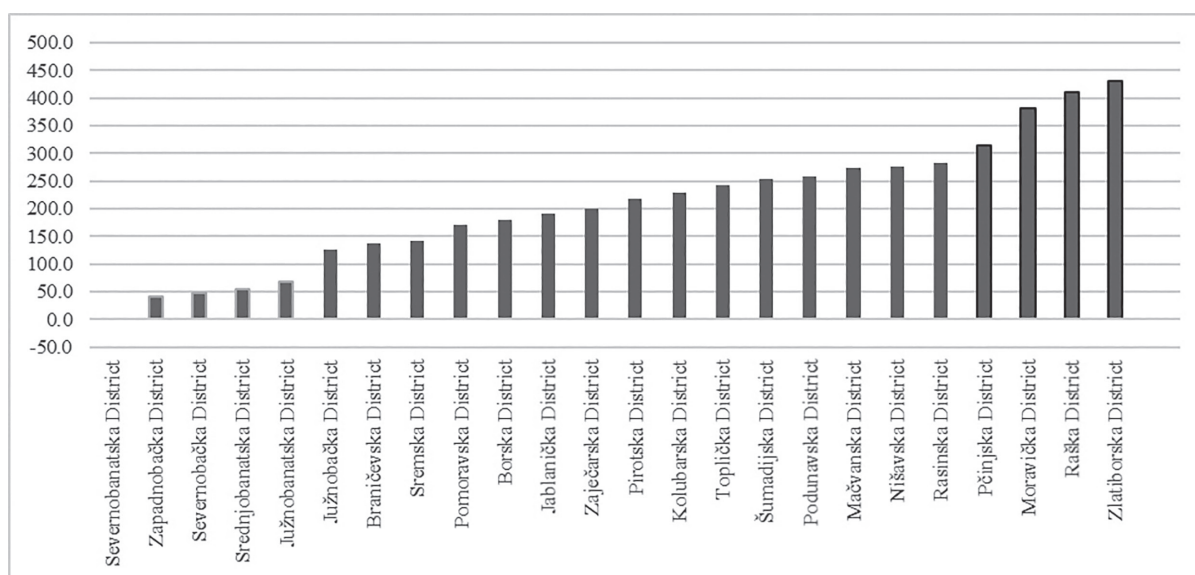


Figure 2. Districts by SORS: urban population growth rate 1948-2011 (%)
(Source: elaborated by the author based on SORS, 2014a)

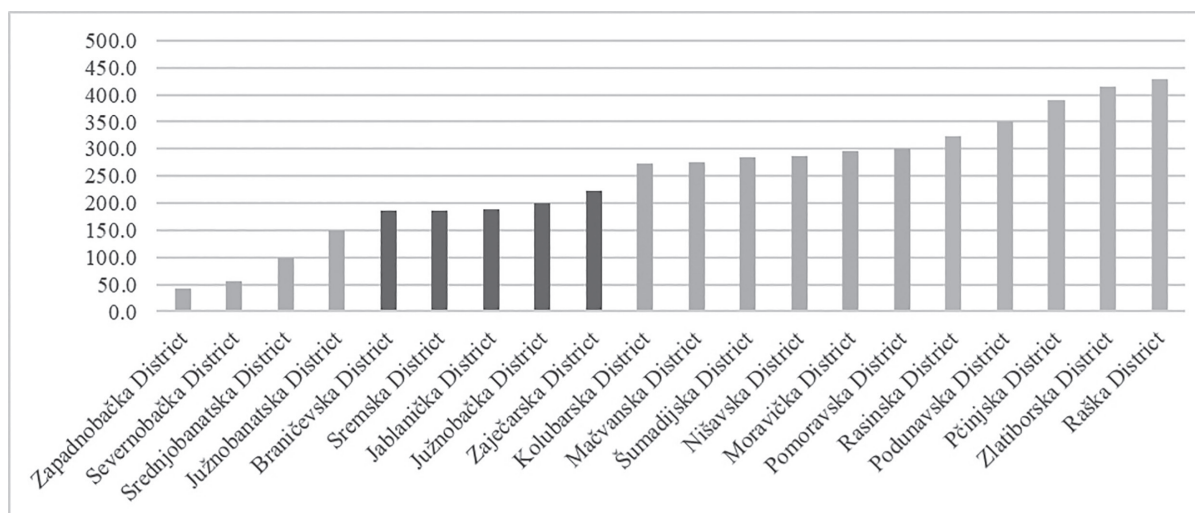


Figure 3. Districts by CS: population growth rate 1948-2011 (%)
(Source: elaborated by the author based on SORS, 2014a)

2002⁴, in Vojvodina only the last census in 2011 recorded a decline, while the South and East Serbia region has been encountering population loss since 1991. In addition, the urban population size in South and East Serbia has been the lowest in comparison with the other regions since the beginning of the 1950s (based on SORS, 2014a).

According to the CS definition of cities, the trend of growth/decline in the urban population is practically the same as in SORS definition of cities, but only if the trends are observed for each region independently. In contrast, comparison of the trends between regions shows significant differences between the Belgrade and Vojvodina regions. Namely, in this case the Belgrade region has extended well beyond other regions in terms of its total city population size since the

beginning of the period analysed. This difference began at the beginning of the 1950s and the Belgrade region grew disproportionately compared to the other regions until the 1980s. None of the other three regions experienced such rapid population growth in their cities. The South and East Serbia region constantly recorded the smallest urban community, while the Vojvodina region had higher growth than in the Šumadija and West Serbia region until 1981. Since then, those two regions have recorded shifts in the advantage of one over the other (based on SORS, 2014a).

At the district level, three main groups of districts (SORS definition) can be distinguished: five districts in the Vojvodina region with a city population growth of less than 100%; three districts in west Serbia and one in south Serbia where the rate exceeds 300%; and 15 other districts recording between 100-300% city population growth rates (Figure 2).

4 The census methodology in 2002 did not count internally displaced persons from Kosovo and Metohija, which was changed in the 2011 census.

If the population of cities as defined by CS is observed by district, then the Severnbanatska, Borska, Pirotka and Toplička Districts are excluded because, by this definition, they have no cities. It can be noticed on Figure 3 that in this case there are four groups of districts distinguished. According to the SORS definition, the lowest population growth is again in Vojvodina districts, only this time Severnbanatska is missing on the list because it has no cities. By this definition, growth rates in this group go up to 150%. This time the Rasinska and Podunavska districts join the group, with over 300% growth, taking over from the Moravička District, while the Pčinjska, Zlatiborska and Raška Districts remain on the top of the list, only with slight changes in their order. The difference between the remaining two groups is not large, but it still indicates that city populations in north and east Serbia are growing less than city populations in west and central Serbia.

Natural component of population growth

In this section of the paper, the methodology is adapted to the fact that statistical reporting presents the information at the municipal, instead of the settlement level. Therefore, the data for cities with more than one municipality were cumulated only for municipalities that have at least one settlement classified as urban by SORS. In addition, values at the regional level were calculated as average values for all municipalities that fitted the previously mentioned criteria.

The birth rate, or number of live-born per 1,000 inhabitants, for the total population of Serbia shifted between 2008 and 2016 from 9.0 up to 9.6‰. Another parameter, even more indicative in terms of natural population growth is the rate of natural increase, because it reflects not only the birth rate, but also the death rate. When the number of births is compared with the number of deaths (average for 2008-2016), it is clear that cities in Serbia have been losing their inhabitants regardless of which type of definition is used – either SORS or CS. However, the loss appears to be smaller in cities defined by CS: -4.3‰ compared to -7.7‰ (based on SORS, 2010a; SORS, 2010b; SORS, 2011; SORS, 2012a; SORS, 2013; SORS, 2014b; SORS, 2015; SORS, 2016; SORS, 2017). In contrast, mothers in the cities defined by CS postpone the decision to become a mother by one year compared to cities defined by SORS (27.7 compared to 26.7 years old), although they have more babies (1.5 compared to 1.4) (based on SORS, 2015; SORS, 2016).

Regional aspect - natural component of population growth

At the regional level of analysis the Belgrade region is the same in both the SORS and CS definitions. Namely, the Belgrade region has a higher birth-rate and higher population growth than the other regions (based on SORS, 2010a; SORS, 2010b; SORS, 2011; SORS, 2012a; SORS, 2013; SORS, 2014b; SORS, 2015; SORS, 2016; SORS, 2017), even though the average age of a first-time mother is almost two years older than in other regions (based on SORS, 2015; SORS, 2016). It is also intriguing that population loss is largest in the South and East Serbia region, despite first-time mothers being younger there than in other regions.

Results for the Vojvodina region and the Šumadija and West Serbia region differ depending on the city definition used. According to the SORS definition, the birth rate is higher in the Vojvodina region, while according to the CS definition it is higher in the Šumadija and West Serbia region. Also in the case of the average age of a first-time mother: in line with the SORS definition the Vojvodina region has “younger” mothers than the Šumadija and West Serbia region, while for the CS definition the opposite is true. Regarding the total fertility rate, the Belgrade and the Šumadija and West Serbia regions (but only by the CS definition) have 1.5 children per mother (based on SORS, 2010a; SORS, 2010b; SORS, 2011; SORS, 2012a; SORS, 2013; SORS, 2014b; SORS, 2015; SORS, 2016; SORS, 2017).

At the district level, the birth rate in 2016 spanned from 6.5‰ to 9.0‰ in most districts, except in Raška and Beogradska where it was 10.7‰. The birth rate in cities (CS) by district strongly fluctuates from year to year, but for the majority of districts the trend is descending. A few peaks are noticeable, for example in 2008 when the birth rate in the Južnobačka District (with Novi Sad as its urban centre), Raška District (due to Novi Pazar) and Braničevska District (due to Požarevac) stood out with relatively high birth rates compared to the national average (based on SORS, 2017).

The natural population growth rate in cities is negative in every district when using the SORS definition, but when they are defined by the CS definition, Južnobačka and Raška Districts are the only ones to achieve a positive growth rate on average from 2008 to 2016. By both definitions, cities in the Zaječarska District have the lowest natural population growth rate (SORS: -14.7‰; by CS: -10.7‰) (based on SORS, 2010a; SORS, 2010b; SORS, 2011; SORS, 2012a; SORS, 2013; SORS, 2014b; SORS, 2015; SORS, 2016; SORS, 2017). The average age of first-time mothers in 2015 and 2016 is lowest in the Jablanička District (SORS: 25.4; CS: 26.0) and highest in the Beogradska District (29.8). The total fertility rate is, by both definitions, almost equally distributed throughout the districts, ranging from 1.4 to 1.5 children per mother; and only the Toplička District stands out using the SORS definition, with a value of 1.6, and the Zaječarska District stands out using the CS definition, with 1.3 children per woman of child-bearing age (based on SORS, 2015; SORS, 2016).

Population age structure (2002/2011)

Between the last two censuses (in 2002 and 2011), the total population of Serbia grew older. The difference in the share of young and elderly people increased from 0.9% to 3.1% indicating a higher percentage of elderly individuals. Consequently, the average population age changed from 40.2 to 42.2. The trend is the same in cities in Serbia, too. Defined by SORS, the average age of the population in cities grew from 38.4 to 41.3, while according to the CS definition the rise was from 38.7 to 41.0. A comparison of these two definitions indicates that SORS cities had a younger population than CS cities in 2002, but that the situation had changed by 2011. The aging trend compared in the two definitions is additionally confirmed by analysis of the share of the young and elderly populations: in 2002, there were 3.6% and 2.9% more young people (SORS and CS definition respectively), while in 2011, the values were 0.6% and 0.1% more elderly people (based on SORS, 2003; SORS 2012b).

In 2002, the youngest population was in Novi Pazar (with 18.6% more young than elderly people), while the oldest was in Belgrade (with 2.6% more elderly than young people). Nine years later, the leading position, which Novi Pazar gained in 2002, remained intact (with 16.8% more young than elderly people), while the difference between young and elderly grew making it 3.5% more elderly than young people in Belgrade. Zaječar (-3.9%) and Sombor (-4.4%) have become cities with the oldest population in Serbia. This refers to cities according to the CS definition.

When it comes to the SORS definition, the situation in Belgrade changed significantly from 2002 to 2011: firstly, it was at the bottom of the list as one of the four oldest cities, with 2.6% more elderly, but then it jumped up to being the 26th oldest city even though it “grew older” (with 3.2% more elderly individuals in 2011). This indicates that much smaller cities, such as Vrnjačka Banja, Dimitrovgrad and Kučevo, grew older at a much faster pace than the capital. In contrast, the top position was held by Novi Pazar in both census years.

The undesirable tempo at which cities in Serbia are growing older can be pictured in the fact that in 2002 there were 19 cities out of 122 with a higher share of elderly than young people, while this number increased to 77 cities in 2011 (SORS definition). According to the CS definition, at first there were two cities of this kind, but later the number grew to 17 cities out of 23 (CS definition).

Regional aspect – population age structure

Observed at the regional level, age structure significantly depends on the definition of cities. Thus, according to the SORS definition, the Belgrade region was the “youngest” (average population age of 40.8) in 2011, while the CS definition ranks the region as the “oldest” (42.2). The “oldest” region according to SORS was the Vojvodina region (42.0), but in the CS definition the oldest were the Šumadija and West Serbia and the South and East Serbia regions (both 40.9). Those two regions were also the “youngest” in 2002 (CS definition), while according to the SORS definition, only the Šumadija and West Serbia region was in this category. According to the SORS definition, the Vojvodina region was again the “oldest”. On average, the population in each region grew older by two years between 2002 and 2011 using the CS definition, and by 2.7 years using the SORS definition.

When considering the share of young and elderly individuals, most of the regions, regardless of the definition used, had a higher percentage of young people than elderly in 2002 (between 1% and 5%). Only the Belgrade region using the CS definition had a higher share of elderly people by 2.6%. Aging of the population becomes obvious when the same comparison was made for 2011: the share of elderly people overtook the young population in two regions (the Vojvodina region and the South and East Serbia region according to SORS, and the Belgrade and the Vojvodina regions using the CS definition). In addition, the difference between those two population cohorts decreased even in the regions where the young population remained higher (there were more young people only by 0.2-0.3%).

A comparison of districts in Serbia shows that a large number of districts had a higher share of elderly than young individuals in 2011, according to both definitions. According to SORS, this was true of 17 out of 25 districts, and for CS 16 out of 21 districts had more elderly than young people. The most desirable situation was in the Raška District and the least desirable in the Vojvodina region and east Serbia (the eastern part of the South and East region), where 16 out of 21 districts had a higher share of elderly individuals according to the CS definition. The distribution of districts from the best ranked to those at the bottom of the list is similar in the case of the SORS definition, with only one exception – the Belgrade district. The SORS definition, which includes the Belgrade settlement and other physically detached urban settlements within the administrative region of the City of Belgrade, puts Belgrade in first position, while the CS definition, which includes only the Belgrade settlement, ranks it last.

In 2002, the situation was quite different: only one district, using SORS, had a higher share of elderly than young people (Severnobačka District). Using the CS definition, the Beogradska District was added to the list, while the Raška District was again best rated using the CS definition and the Pčinjska District using the SORS definition.

DISCUSSION

Trends

Over a time-span of 63 years, the population of Serbia has increased by 10%. A significantly larger increase was recorded in cities (over 100%), which indicates that urban settlements “grew” predominantly due to immigration and not as a consequence of natural demographic factors (a high birth-rate and natural population growth). This has been proven by an analysis of the natural population growth between 2008 and 2016, which showed that the death rate is higher than the birth rate.

The age structure of city populations is moving towards a more and more aged society, although it already belongs to a group of deep demographic age⁵ category. Between 2002 and 2011 the share of the young population in the total population went in an undesirable direction – the population in cities in Serbia gained a much higher share of elderly individuals. Over only a nine-year time span (2002-2011), the percentage of cities with a higher share of elderly than young people increased from 15.5% to 63% using the SORS definition, and from 9% to 73% using the CS definition. In other words, the tempo at which the urban population in cities is becoming demographically older is rapid.

SORS and CS definitions

According to the CS definition of cities, there are five times fewer cities than according to the SORS definition (23:122), and they embrace only the largest urban settlements that are the most common and the strongest gravitation zones for immigrants. For this reason, the growth of the urban population in CS cities is almost 60% larger than in SORS

⁵ According to the demographic age classification shown in “Stanovništvo – pol i starost”/ “Population – Gender and Age” (SORS, 2003).

cities. The difference in definition also influences how the results are interpreted when it comes to comparison between the urban and rural populations. Thus, the size of the urban population exceeded the size of the rural population between 1981 and 1991, as defined by the SORS definition; in contrast, the urban population defined by CS has still not exceeded the size of the rural population, although the trend shows that this is certainly going to happen in the near future.

Population loss due to vital events (the difference between births and deaths) is basically doubled when towns, as smaller urban settlements, are taken in account together with cities, and accordingly, the population loss is 50% lower in large cities. Another particularity of large cities is that females become mothers later than in smaller cities, although they have more children.

A comparison of the population age structure using the two definitions shows that the urban population in smaller cities (towns) used to be demographically more vital, but that this has changed in the last decade: the population is younger in large cities now. This indicates that the demographic capacity of Serbia will reduce only to large (or the largest!?) settlements and that their number will progressively decrease if the trends continue.

The choice of definition greatly influences the results for regions such as the Belgrade Region (the same territory as the City of Belgrade and Beogradska District). It is a unique case among the cities in Serbia because it is surrounded with a number of smaller urban settlements specific in terms of their demographic characteristics, size and functions, and which greatly change the demographic structures of the city population observed at the level of the entire administrative territory of the city. Thus, by including the population of all the urban settlements within the administrative territory, Belgrade is significantly more demographically stable than the settlement of Belgrade alone.

Regions

The region that has recorded a population decrease for over 20 years is also the region with the lowest population increase over the past 60 years – the South and East Serbia region. Expectedly, the number of children per mother was the lowest compared to other regions, but the analysis also indicates that this part of Serbia is very clearly an emigration area.

When comparing districts, some districts in west and central Serbia have higher population growth, while the north and east districts lag behind. The situation is the result of both the natural growth rate and the number of children per mother: Belgrade, Novi Sad and the Raška District are positive examples, regardless of the definition used and the year observed, while the Zaječarska and Jablanička Districts are ranked the lowest. The Zlatiborska District records population growth, but it also has undesirable natural growth values, which indicates that the population growth is induced by immigration.

Regarding the average age, the most prominent cities with the lowest average age are undoubtedly Novi Pazar and Tutin, followed by the largest cities, while towns have the

oldest populations; hence, towns have the most impaired demographic capacity for the future. Large cities are “oldest” in the Šumadija and West Serbia region and the South and East Serbia region, while smaller cities have the oldest age structure in the Vojvodina region. When observing the population as a whole and regardless of the demographic size, the “oldest” urban population is concentrated in the Vojvodina region.

Future expectations

According to projections (SORS, 2014c), the total population of Serbia will keep shrinking through the entire projection period – from 2011 to 2041. The only region with an increasing number of inhabitants is the Belgrade region (10.2%), while the largest decrease is expected in the South and East Serbia region (28.1%). The data refer to the total population in the regions, which indicates that the values could be slightly more optimistic for cities and towns only. However, even the most optimistic projection scenario shows that the regions should expect population decrease.

Based on the same projections, population aging will continue through the entire period. The Belgrade region is expected to be the least affected, but the South and East Serbia region the most. Life expectancy at birth at the beginning and end of the projection period in the Šumadija and West Serbia region is the highest and in the Vojvodina region it is expected to be the lowest. Hence, it can be expected that population pyramid for the Šumadija and West Serbia region will be expanded at the top section.

Annual net migration by region at the beginning of the projection period (2011-2016) is negative, namely, the number of emigrants was expected to be higher than number of immigrants, except in the Belgrade region. For the end of the projection period (2036-2041) the overwhelmingly optimistic projection predicts that the annual number of immigrants will be between 1,867 and 14,867 higher than number of emigrants, depending on the region (Ibid.).

CONCLUSIONS

It can be said that the population size in Serbia has grown, but only when observed over a long-time span (more than 60 years). Actually, it has been almost 40 years since it began decreasing. The aforementioned growth occurred in cities and towns, primarily due to immigration in urban areas and emigration from rural ones. In fact, the analysis confirms that the greatest demographic capacity lies within large cities, which record almost a 60% increase compared to cities and towns together. Rural areas used to be the major natal resource of Serbia, but nowadays they have been so depopulated that the role has shifted to larger settlements (Spasić and Petrić, 2006; Beker et al., 2017), in spite of the fact that women in large cities postpone their decision to become a mother. The rate of natural population increase in cities and towns has been negative for the last few decades, but numbers also show that large cities are better ranked. This also indicates that the repercussions of long-term internal population movement are that cities with the strongest gravitational influence have gained most of the demographic resources.

Demographic age analysis shows that the age of the population in Serbia grows from year to year. The problem behind the fact is that the birth-rate, fertility rate and other components of natural population increase are recording small or even negative values. In comparison to the total population, the age structure in towns is more favourable, but still best rated in cities. As internal migrations usually involve the young population of reproductive age, particularly young women, who are drawn by larger gravitational zones (Bobić *et al.*, 2016), the result is a younger age structure in cities than in towns. However, since 2002 the age structure in the cities of Serbia has shown a progressive negative pattern. If the aging trend continues (2-3 years in 10 years) it could lead to serious consequences for the reproductive and general demographic capacity.

With regard to the regional level, the Belgrade region has the strongest gravitational power and demographic capacity, while the South and East Serbia region represents a depopulation area where, mostly due to emigration, the reproductive capacity has been weakened the most. The reproductive capacity of the Vojvodina region is the most evenly distributed in comparison to other regions, because it is not concentrated only in the largest cities, but also in towns. The youngest population is in the district with the highest birth-rates – the Raška District and the City of Novi Pazar. Analysis of the age structure also indicates that the demographic capital of the City of Belgrade does not lie in the core of the city (settlement of Belgrade), but in its outskirts. The difference between the centre and the peripheral municipalities comes from the fact that Belgrade is one of the youngest cities when all of its municipalities are taken into account, but in contrast, if only the settlement of Belgrade is considered, then it is the oldest.

In general, demographic trends in most of the cities and towns in Serbia are heading in an undesirable direction. It appears that there is a positive correlation between the size of a settlement and its demographic capacity, whereby larger cities have better prospects and chances of mitigating the existing trends. Territorial imbalance comes from the exaggerated concentration of populations in the largest cities, and continued intense emigration from rural areas. In addition, the urban population in the Belgrade region and the south-west of Serbia, with few exceptions, has been continuously growing, while in the east and north it has been shrinking.

Acknowledgements

This paper is a result of research conducted within the research projects "Sustainable spatial development of Danube area in Serbia", TR 36036, both financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia.

REFERENCES

Beker, K., Gujaničić, R., Rudić Vranić, R., Čelović, Z., Nešić, R., Simonović Veljković, G. (2017) *Situation of Rural Women in Serbia – Report*. The United Nations Entity for Gender Equality and the Empowerment of Women (UN Women).

Bobić, M., Vesković Anđelković, M., Kokotović Kanazir, V. (2016) *Study on External and Internal Migration of Serbia's Citizens with Particular Focus on Youth*. Belgrade: International Organization for Migration.

Elledge, J. (2015) This map shows how Europe's Population Changed and Shifted in the First Decade of the 21st Century. CityMetric: www.citymetric.com/horizons/map-shows-how-europes-population-changed-and-shifted-first-decade-21st-century-1144, accessed 31st Dec 2018.

European Commission (2014) *Population Ageing in Europe – Facts, Implications and Policies*. Brussels: European Commission – Directorate-General for Research and Innovation, Directorate B – Innovation Union and European Research Area.

Kupiszewski, M., Kupiszewska, D., Nikitović, V. (2010) *Capacity Building of Institutions Involved in Migration Management and Reintegration of Returnees in the Republic of Serbia*. Belgrade: International Organization for Migration – Mission to Serbia.

Law on Local Self-Government (2007), "Official Gazette of the Republic of Serbia", No. 129/2007, 83/2014, 101/2016, 47/2018 / Zakon o lokalnoj samoupravi, „Službeni glasnik Republike Srbije”, br. 129/2007, 83/2014, 101/2016, 47/2018.

Law on Territorial Organization of the Republic of Serbia (2007), "Official Gazette of the Republic of Serbia", No. 129/2007, 18/2016, 47/2018 / Zakon o teritorijalnoj organizaciji Republike Srbije, „Službeni glasnik Republike Srbije”, br. 129/2007, 18/2016, 47/2018.

Marinković, I., Radivojević, B. (2016) Mortality Trends and Depopulation in Serbia, *Geographica Pannonica*, Vol. 20 Iss. 4, pp. 220-226.

Mohdin, A. (2018) The Fastest Shrinking Countries on Earth are in Eastern Europe. Quartz, <https://qz.com/1187819/country-ranking-worlds-fastest-shrinking-countries-are-in-eastern-europe/>, accessed 31st Dec 2018.

Pantić, M., Živanović Miljković, J. (2010) Regional Differences between Rural Areas of Serbia in Population Aging and Agricultural Activities: Case Studies of the Indija and Knjaževac Municipalities, *SPATIUM International Review*, No. 22, pp. 29-37.

Pejin-Stokić, Lj., Grečić, V. (2012) Social Impact of Emigration and Rural-Urban Migration in Central and Eastern Europe – Final Country Report Serbia. On behalf of the European Commission DG Employment, Social Affairs and Inclusion and Gesellschaft für Versicherungswissenschaft und – Gestaltung e.V.

Penev, G. (2014) Population Ageing Trends in Serbia from the Beginning of the 21st Century and Prospects until 2061: Regional Aspect. Novi Sad: Zbornik Matice srpske za društvene nauke, No. 148, pp. 687-700.

Spasić, N., Petrić, J. (2006) The Role and Development Perspectives of Small Towns in Central Serbia, *SPATIUM International Review*, No. 13-14, pp. 8-15.

Spatial Plan of the Republic of Serbia from 2010 to 2020 (2010) Službeni glasnik Republike Srbije 88/2010 / Official Gazette of the Republic of Serbia 88/2010.

Statistical Office of the Republic of Serbia [SORS] (2003) Age and Sex – Data by Settlements. Belgrade: Statistical Office of the Republic of Serbia.

Statistical Office of the Republic of Serbia [SORS] (2010a) Opštine u Srbiji, 2009. / Municipalities and Regions in the Republic of Serbia, 2009. Belgrade: Statistical Office of the Republic of Serbia.

- Statistical Office of the Republic of Serbia [SORS] (2010b) Opštine u Srbiji, 2010. / Municipalities in the Republic of Serbia, 2010. Belgrade: Statistical Office of the Republic of Serbia.
- Statistical Office of the Republic of Serbia [SORS] (2011): Opštine i regioni u Republici Srbiji, 2011. / Municipalities and Regions in the Republic of Serbia, 2011. Belgrade: Statistical Office of the Republic of Serbia.
- Statistical Office of the Republic of Serbia [SORS] (2012a) Opštine i regioni u Republici Srbiji, 2012. / Municipalities and Regions in the Republic of Serbia, 2012. Belgrade: Statistical Office of the Republic of Serbia.
- Statistical Office of the Republic of Serbia [SORS] (2012b) Age and Sex – Data by Settlements. Belgrade: Statistical Office of the Republic of Serbia.
- Statistical Office of the Republic of Serbia [SORS] (2013) Opštine i regioni u Republici Srbiji, 2013. / Municipalities and Regions in the Republic of Serbia, 2013. Belgrade: Statistical Office of the Republic of Serbia.
- Statistical Office of the Republic of Serbia [SORS] (2014a) Comparative Overview of the Number of Population in 1948, 1953, 1961, 1971, 1981, 1991, 2002 and 2011 – Data by Settlements. Belgrade: Statistical Office of the Republic of Serbia.
- Statistical Office of the Republic of Serbia [SORS] (2014b): Opštine i regioni u Republici Srbiji, 2014. / Municipalities and Regions in the Republic of Serbia, 2014. Belgrade: Statistical Office of the Republic of Serbia.
- Statistical Office of the Republic of Serbia [SORS] (2014c): Population Projections of the Republic of Serbia 2011-2041. Belgrade: Statistical Office of the Republic of Serbia.
- Statistical Office of the Republic of Serbia [SORS] (2015) Opštine i regioni u Republici Srbiji, 2015. / Municipalities and Regions in the Republic of Serbia, 2015. Belgrade: Statistical Office of the Republic of Serbia.
- Statistical Office of the Republic of Serbia [SORS] (2016) Opštine i regioni u Republici Srbiji, 2016. / Municipalities and Regions in the Republic of Serbia, 2016. Belgrade: Statistical Office of the Republic of Serbia.
- Statistical Office of the Republic of Serbia [SORS] (2017) Opštine i regioni u Republici Srbiji, 2017. / Municipalities and Regions in the Republic of Serbia, 2017. Belgrade: Statistical Office of the Republic of Serbia.
- United Nations – Department of Economic and Social Affairs (2017) World Population Projected to Reach 9.8 Billion in 2050, and 11.2 Billion in 2100, www.un.org/development/desa/en/news/population/world-population-prospects-2017.html, accessed 31st Dec. 2018.
- Wolff, M., Weichmann, T. (2017) Urban Growth and Decline: Europe's Shrinking Cities in a Comparative Perspective 190-2010, *European Urban and Regional Studies*, Vol.25, Iss. 2, pp. 122-139.