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TRANSITION TO PARENTHOOD: NEW INSIGHTS INTO SOCIO-PSYCHOLOGICAL COSTS OF CHILDBEARING

Mirjana BOBIĆ *

The paper deals with socio-psychological costs of (first) childbearing, considering this as important hurdle for transition to higher parities, especially to second and third ones. In addition to the second demographic transition, new paradigms tackle micro aspects of parenthood thus highlighting individual and parental well-being/happiness and experiences around a first baby as preconditions for (next) childbearing along with work-, family-, leisure-, friendly policies. We used both the macro and micro theoretical perspectives in order to explore our research data. We deployed the complementary method: the survey (N=1560) among women in Serbia in 2017 which was the supplementary to previously conducted qualitative one (interviews with 30 couples in Belgrade) in 2013/4. On both occasions we dealt with the topic related to the process of transition from partnership to parenthood. Results have shown high socio-psychological costs of women/mothers and the asymmetry in gender roles at the start of childbearing. This is explained by persisting patriarchal ideology in both private and public sphere, which is even strengthened after the onset of social transition and demise of state socialism (repatriarchalization). Such behavioural pattern is not only incompatible with professional demands when it comes to women's employment, but as such is also demonstrated to be a strong barrier for further childbearing. We propose policy measures that are directed towards stronger inclusion of men/fathers into private sphere (transformation of gender roles) from the very beginning of parenthood and around household, which should be combined with other family policies (work family reconciliation), social policies targeted to the increased employment, quality of life, etc.

Key words: *socio-psychological costs of childbearing, partnership, transformation of gender roles, Serbia, family policy.*

Introduction

It is widely documented that by the end of the 20th and the beginning of 21st century half of the world population has been living in countries with below replacement fertility (UN, 2017; Vobecká *et al.*, 2013; EC, 2006). Low level of national fertility, coined also under 'Crisis of Motherhood', has been reported as a consequence of persistently low birth rates under conditions of decreased mortality and prolonged longevity in advanced

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market economies (USA, Australia, New Zealand, Great Britain, Japan, Europe) also including states in post-socialistic transformation, such as Serbia (Newman, 2008; Nikitović *et al.*, 2015; Rašević, 2015; Frejka, Gietel-Basten, 2016; Stankuniene, Maslauskaite, 2008; Höhn *et al.*, 2008). 'Crisis of motherhood' is widespread in developed societies where policies, institutions and business are still dominated by men who preserve traditional 'motherhood' ideology and liberal feminism (Newman, 2008: 18).

Novel research explored changes in parity progression as a component of fertility decline by looking into generational shifts in completed fertility, among 32 countries of Europe, North America, Australia and East Asia (Zeman *et al.*, 2018). Data referring to national censuses carried out in 2011 and big surveys and registers have showed that cohorts born around 1940 had completed fertility rates of 1.9–2.5 children/women in most European countries and Japan, whereas in USA, New Zealand and Australia they had been higher, 2.5–2.7 (Zeman *et al.*, 2018). The decline is however evidenced among succeeding, younger cohorts, born from 1955 onwards. Among women born in between 1940 and 1950 the fall was related to reduction of third and higher parities. However, already among these generations decrease in first parity was taking place in German speaking countries (Western Germany, Switzerland) and in Netherlands. Among cohorts in Southern, Eastern and Central Europe from 1955 and 1970 fertility continued to decline and younger generations who were in prime reproductive ages around the 1990s have been facing high socio-economic and political instability as a result of transformation into market economies (followed by raised unemployment, vast impoverishment, high costs of housing, emigration of the youth, etc.). Globally speaking, main distinctions in between world regions are identified as follows: 1) Central and Eastern Europe (CEE), with fertility falling due to the curbing of second births, with addition of German speaking countries, South Europe (Italy, Spain) and East Asia, where it had come up as a result of fall of first births. In CEE states bearing of at least one child was culturally conditioned by strong pro-family norms, unlike German speaking ones where childlessness was vastly accepted; 2) when it comes to Northern, Western Europe, USA, Australia and New Zealand generations born in 1940 were at the peak of reproduction around post WWII 'baby boom' period, and thus had large families. Descending cohorts have abandoned high parity and shifted to lower levels but stabilized their completed fertility at around 1.75 or even increased it later on. Greatest portions of women born around 1960 with large families were found again in Northern, Western Europe, USA and Australia among low educated women. Higher educated ones, with university degree, were identified as forerunners of second demographic transition and not only have they refrained from higher order

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births, but also vastly postponed childbearing, because of incompatibility of family with high employment rates, professionalism, career aspirations, salient opportunity costs, etc. (Zeman *et al.*, 2018).

Completed fertility in Northern and Western Europe has neither further nor starker fallen thanks to individual changes and institutional support, such as: gender equality, work and family friendly policies which eased off private and public domains' mismatch (generous financial aid, child-care facilities, parental leaves, etc.) (Zeman *et al.*, 2018). German speaking countries and Southern European ones sustained traditionalistic values and attitudes toward mother/caregivers vs. fathers/earners reflected in referent expectancies for women to stay at home for the wellbeing of children. Lack of appropriate public support for working mothers contributed largely to rise of culture of 'child-free lifestyle' in Germany, Switzerland and Austria. In Italy family is still seen as a main provider of care for women and couples with children with heavy relying on grandparents and insufficient adjustment of care facilities with working hours of parents.

Similar analysis of completed fertility rates has been undertaken in Serbia (without Kosovo and Metohija) on the basis of census data from 2011 (Rašević, 2015). Exploration of fertility of 33 generations born in between 1930-1962 has reported that none had given birth to more than two children. Eldest cohort (born in 1930) which exited reproductive ages in 2011 had approximately 1.85 children while fertility of succeeding ones (1937, 1938, 1939, 1940, 1941) was even lower – 1.75 children/woman. Youngest generation which at the time of census 2011 has come to the end of reproduction period was born in 1962 and gave birth to approximately 1.82 children per woman. These results revealed that Serbia (without Kosovo and Metohija) has witnessed low fertility very early in the twentieth century, not only in terms of insufficient childbearing, but also its long-term persistence at the level of 1.8 children/woman. The reasons can be found in belated but accelerated socialistic modernization after WWII, industrialization and urbanization, rural to urban migrations and transformation of families, massive entry of women into work force with full time employment, lack of economic incentives for those who opted for large families and inadequate political response, liberalization of abortion, vast secularization, double burden of employed mothers, slow but continuous increase in personal consumption and incompatibility of work and family. Like in other CEE countries, in Serbia too, being then the part of ex-Yugoslavia, before its collapse in 1991, family had been posited as a terminal life value and major goal which explains why childbearing had not declined even further (Rašević, 1995: 76).

Also, alike other socialistic countries, female emancipation in Serbia had been achieved only partly and in public sphere (in employment and educa-

tion), without any great progress in political sphere and dominant cultural norms. Quasi emancipation of women in socialism differed vastly from gender emancipation in 'old' Europe. In socialism, structural emancipation of women has been interwoven with patriarchal gender identities all of which had contributed to transition to 'masculine democracies' after the breakdown in the 1990s (Stankuniene, Maslauskaite, 2008).

The paper is structured as follows: after the introduction we resort to theoretical consideration on new insights on low fertility. The latter presupposes not only socio-psychological costs of transition from coupledom to parenthood, but also distribution of tasks and responsibilities around house and a child, all of which are deemed significant for decision making on further parities. Data are partly driven from international researches and primarily from recent representative fieldwork on "Culture of Childbearing — Reproductive Strategies of Women in Serbia Today" carried out in 2017. After the discussion of main findings in light of presented conceptual model, there comes a conclusion which elaborates some political response aimed at reducing socio psychological costs and alleviation of 'Crisis of Motherhood'.

Theoretical considerations

Today, demographers stress a critical moment of transition from a first to a second child and the newest research evidence discloses reasons mirrored in experiences of 'first baby stage' as an important side of low completed fertility. Although this may look as private affairs, it is deeply structurally embedded and thus have political implications. Secondly, when it comes to employment, today globalized market economies pose high demand on (highly educated) women to take part in paid professional jobs and therefore work – family incompatibility poses a strong hurdle for embarking on motherhood. Closely related to this is the third dimension - males' engagement in private sphere in terms of sharing of responsibilities around children, care work in general and also the housework. In this paper we will try to cast some more light onto these dimensions explaining persistently low motivation (for prolonged) fertility.

Gender issues, especially gender symmetry as an important societal precondition of changed fertility behaviour (low and delayed) and marital/partnership one (diversification of unions) have been given strong emphasis in second demographic transition theory (SDT) (Lesthaeghe, 2010). Furthermore, several social and demographic determinants have brought about second demographic transition and shrinking of families (EC, 2006: 1) rise of individualism; 2) increased share of women in paid work; 3) low level of desired and actual fertility altogether with its vast postponement; 4) decrease of quantum of live births due to stopping at parity one or two

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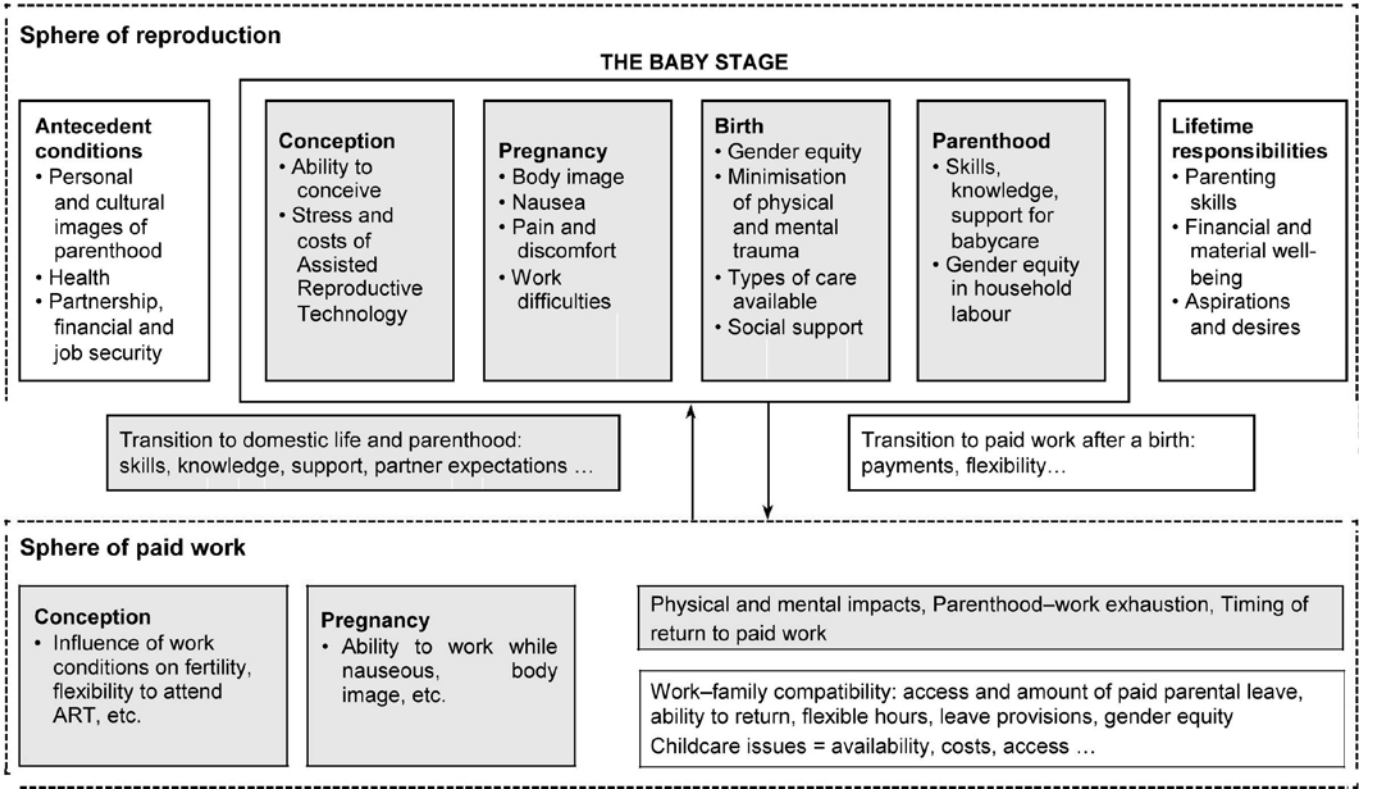
(Rašević, 2015; Frejka, 2008; Đurđev, 2004). Low fertility also comes out because of: fall in fecundity due to delay of pregnancies and rise of secondary infertility; high economic and opportunity costs of raising children; increased divorce and union dissolution; pluralization of life styles, personal freedoms, multiplication of chances and choices, reflexive biographies and expansion diversified of styles for self-realization outside family.

Apart from upper insights and referring well elaborated findings, recent research in developed countries has pointed out to hitherto underreported aspects of low fertility, like parental experiences around early childbearing (up to 1-3 years after birth, depending on the number and spanning of children). Wellbeing of parents and partners after the first child is considered to be tightly related to willingness to progress to higher parities. This is connected to wider paradigm of *socio-psychological costs of children* and is linked to emotional, personal and relationship changes, but also individual evaluation of overall quality of life after this familial change. Socio-psychological cost of childbearing presupposes personal feelings of self-sacrifice and losses of, predominantly, females/mothers, i.e. investments of resources, time, energy, emotions and activities, as well as so called opportunity costs (Blagojević, 1997). These costs are not financial, but yet they do exert a strong burden on mothers/parents and may be conducive for stopping further childbirths. The fact is that partners undergo huge social stress once they become parents and need to make a lot of adjustments in their everyday lives. This is frequently followed by high expectations to be a perfect parent (‘intensive parenting’) which might lead to disappointments, marital conflicts, breakdowns and separations.

Socio-psychological costs of parenthood are reported to be as crucial as issues related to: work family reconciliation, return to workforce, financial costs of children, etc (Newman, 2008; Margolis, Myrskylä, 2014). Therefore, some women opt to give up further childbearing unless they find another, more suitable partner (Newman, 2008; Paar, 2010). Not infrequently women/mothers undergo postnatal depression, face permanent tiredness, exhaustion, sleep deprivation and anxiety as a result of enduring baby’s crying, feeding, etc., as well as social isolation and lack of time for themselves. Males might be spending more time at work and concomitantly take insufficient part around a newborn, a household and in support to wives/mothers. Socio-emotional effects of transition to parenthood are related to physical and emotional costs of conception, pregnancy (nausea, changes in body shape, etc.) and experiences during delivery (Figure 1).

Figure 1.
The location and omission of parenting influences in policy and debate on low fertility (Newman, 2008:17)



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Parents' happiness/wellbeing surrounding the first birth has therefore been acknowledged as a determinant of further parity progression in vast majority of recent papers and journals on low fertility (Margolis, Myrskylä, 2011; 2014; 2015; Kohler, Mencarini, 2016; Aassve *et al.*, 2016) and supported by using gross evidence of both representative, quantitative analysis and qualitative studies (Newman, 2008). In short, authors resort to Second demographic transition paradigm (SDT) (Lesthaeghe, 2010; Lutz *et al.*, 2007) when explaining changing family behaviour in industrialized countries reflected in retreat from marriage, decline and postponement of unions, rise of cohabitations and extramarital births, thus decomposition and separation of childbearing/childrearing from partnership/marriage. They accentuated women's increased work force participation, enhanced career prospects, prolonged education and 'gender revolution' in public and private spheres as main drivers of demographic and family changes (Goldscheider *et al.*, 2015). Some of the authors pose one crucial dilemma — not only why fertility is low today, but why it is not even lower (Kohler, Mencarini, 2016).

Thus, as we could learn, the SDT as a grand theory is supplemented with new paradigms, tackling subtle interpersonal processes, everyday lives of couples and nuclear families, all of which had been stranded left in former research and policy. Additionally, it should be accentuated that second wave feminism is also 'blamed' for a sort of blindness on uncompleted 'gender revolution' in private sphere, because of its predominant orientation towards women's entry into public sphere (education and work force). To the contrary, for middle class women it is a 'second shift' (baby care, household chores, etc.), that cast greater burden even when compared to job and career ones (Newman, 2008), insofar that women report jobs to be more as a 'pull' and children and home as a 'push' factor.

Figure 1 brings about concise but very detailed insight into the complex and multidimensional 'baby stage' where apparently spheres of reproduction and paid work are in tight communication and exchange. 'Locations' which have been underrepresented or omitted in policy and debate on low fertility are highlighted (shaded areas) (Newman, 2008: 17).

As is quite evident 'baby stage' encompasses plethora of phases, preconditions, transitions, challenges, responsibilities, skills and knowledge, aspirations, relationships and hardships. We shall be focusing on gender equity in two shaded locations: at birth and parenthood. This will be subsumed under paradigm of 'partnership happiness/wellbeing' as a precondition for (further) childbearing inasmuch as data obtained from domestic surveys and qualitative researches allow us to elaborate on.

Couple's happiness and wellbeing are growing before first baby comes and immediately after that and then gradually decline (Margolis, Myrskylä,

2014). This stage is treated as union formation followed by frequent sexual activity and strong mutual affections of partners. Bearing up to two children boosts parents' happiness and especially so for couples and women who had postponed it. A pattern is elaborated on a vast longitudinal study of British (n=2,689; 1991-2008) and German populations (n=4,513; 1984-2009). Socio-demographic factors modify this behaviour in such a way that those who are better off (and older), supposedly in possession of more resources (human and social capital, affluence, etc.), do experience more happiness compared to lower strata and younger people. Delayed parenthood does not necessarily mean neither childlessness nor few children, but still might bring about happier couples who will be 'catching up' with two or more offspring. Conversely, reports on third parity births demonstrate less of couples' satisfaction which explains its low quantum and tempo effects in the context of second demographic transition (Margolis, Myrskylä, 2014). Young couples reflect higher degree of unhappiness compared to their childfree counterparts whereas older ones express equal or even higher wellbeing as their childfree peers (Margolis, Myrskylä, 2011).

Authors point out that under conditions of childbearing based on personal choice and free will in SDT it is trajectories leading to life satisfaction and happiness around (first or previous) parenthood which are seen as an important driver of low fertility (Margolis, Myrskylä, 2014; 2015). Bad experiences with first baby may affect further parities because people tend to avoid deterioration of their achieved lifestyle (well-being/happiness). Paradigm of parents' happiness as a precondition for further births is deemed to be of relevance for demographic understanding of missing higher order births (Margolis, Myrskylä, 2014: 1860; Kohler, Mencarini, 2016). As a result, series of studies analysing a relationship between happiness and childbearing have been published recently (Aasve *et al.*, 2016; Margolis, Myrskylä, 2011; 2015).

Partners' happiness[1] is mediated by socioeconomic characteristics: education, gender, parity, marital status and social settings. Lower education and social status are linked to less wellbeing, more hardships and more frequent post-natal depression. Being an older mother usually presupposes belonging to higher stratum with high activity rates, career orientation, and stronger financial and other social resources. When it comes to gender it is mothers who are more affected by conception, pregnancy, delivery, afterbirth depression and 'baby stage' exhaustion. Mothers still remain

[1] Happiness or well/being is researched in British and German studies through the following question "How satisfied are you with your life, all things considered?" with responses ranging from 0 (completely dissatisfied) to 10 (completely satisfied) (Margolis, Myrskylä, 2014: 1848).

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profound caregivers whose work is not properly recognized and treated as 'doing nothing' or 'not a serious job' at home) (Newman, 2008: 20; 27) because of yet incomplete 'gender revolution' (lack of gender equity at home) (Newman, 2008; Goldscheider *et al.*, 2015). As to union type and social context – parental happiness is dependent on whether: a parent/mother is single, coupled or divorced, has an extramarital children, is employed or not, has social support through informal networks, is surrounded by work friendly climate, enjoys beneficial social services and political support.

Political implications of addressing this sort of inhibitors for raising fertility are related to enhanced support of mothers/women and fathers/men around partnership and parenting (counselling and self-help groups of citizens), acquisition of knowledge about multiple challenges in early childbearing, baby care, support of local community and neighbourhood, building children and parents friendly environments at work and in a wider society, along with financial incentives and means of overcoming work and family mismatches (McDonald, 2002).

'Gender revolution' denotes changes in gender relationships in both public and private spheres (Margolis, Myrskylä, 2015: 207). This is a new and powerful theoretical insight allowing for understanding of both decline and recent reversals in fertility (Margolis, Myrskylä, 2015). First half of gender revolution took part with growing employment of women from 1960s, which was not followed by immediate reconceptualization of the private sphere. To the contrary, women were added second shift with their human resources enormously put under constraint (Blagojević Hughson, 2014). Such developments contributed to family decline and postponement of unions and childbearing. It was only with globalization and urge for two salaries in developed nations that men have been pressed to gradually change their attitudes and behaviour at home. Second part of 'gender revolution' refers to increased sharing of home responsibilities by men/husbands which has been vastly reported nowadays (in some 13 EU countries and in USA) and especially ever since 2010, after Great Recession, with rising shares of females' breadwinning model and/or two earners families (Lappegård *et al.*, 2015; 2017). Structural conditions that brought about new configurations of caretaking/breadwinning are connected to globalization of service economy, prolonged longevity, shrinking families as a result of fewer children, higher education of women along with state policies facilitating easier work family reconciliation (childcare, parental leaves, financial support, etc.). Because of increased divorces and marital instability women have to be able to sustain themselves without a partner. Today countries with highest women employment rates have highest fertility rates and not another way around

(Lappegård *et al.*, 2015; 2017). Extended working hours, enhanced economic power, and negotiation capacity of more resourceful and thus powerful women contribute to undermining of division of public vs private sphere and gendered performance therein. Considering men, they do take increasingly part in activities primarily around children and to a lesser extent in housework in the context of higher job insecurity, unemployment and demands on women to take up full time positions. Strong incentive to undermine previously established unequal division of labour at home was enacted in those states which introduced paid paternal leave ('daddy quota') which was not exchangeable with mothers' leave. This was the case in Scandinavia and Western Europe, but also in some of US states. New, younger generations of males emerged wishing to share 'intensive parenting' and other daily tasks such as meals preparing, doing work for minors, shopping, etc. Authors who researched these shifts proved slow, stalled, but yet ongoing second part of gender revolution in developed countries (USA, Britain, Sweden, etc.) and this might be conducive to happier couples and strengthened families therefore opening up prospects of increased fertility in times to come (Lappegård *et al.*, 2017). Marital satisfaction and stability are closely linked to overall organization of private sphere, both house- and family- work. Inasmuch as women are stouter in advocating for gender equity they would be more akin to feel less satisfied if the privacy is still gendered. On the contrary when traditional ideology of male breadwinning and female housekeeping prevails women are more likely to accept unfair division of tasks and to report being satisfied ('fairness paradox') (Lappegård *et al.*, 2015; 2017).

Data and methods

In previous paragraphs we have laid down informed theory which in a part inspired our recent fieldwork "Culture of Childbearing — Reproductive Strategies of Women in Serbia Today" carried out in 2017 by the Institute for Sociological Research, Faculty of Philosophy, University of Belgrade. The survey covered all regions and counties of Serbia (including northern part of Kosovo). Female population (n=1,560), being the subject of the research, was divided almost equally among 3 major age groups: 31.4% (18-29), 37.5% (30-45), and 31.1% (46-60).[2] Since the experience of

[2] Due to the specificity of the survey which tackled many aspects of intimacy, bodily experiences, trauma and violence, the sample was designed as a combination of partly representative one (as to the type of settlement), and partly purposeful ('snow ball'). Therefore, majority of respondents were recruited from Belgrade metropolitan region (35.2%), then from Central and Western Serbia (22.7%), Southern and Eastern Serbia (22.2%), Vojvodina (17%) and the least from northern Kosovo (2.9%). As to education, most of respondents had a 4-year secondary education or high school (48.2%) and tertiary education (32.6%), while 8.4% of them had a 3-year secondary school, 6.2% master or PhD, and 4.7% (un)completed elementary school. As to childbearing, 39.3% have one child, 49.9% two, 9.3% three and 1.5% more than 3 children.

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childbearing, union formation and 'early baby stage' were at the focus of our research, we did not include younger and older cohorts. Younger ones were excluded due to lack of such experiences (rare births) in the state with very low and delayed fertility (TFR-1.46) (RZS, 2016), while the older ones were not considered due to possible distortion of their memories on the subject (Sekulić *et al.*, 2017). This fieldwork was preceded by one qualitative research of couples with new-borns and/or small children in Belgrade ('Politics of Parenthood') carried out in 2013/14, also by the Institute for sociological research, Faculty of Philosophy, University of Belgrade. The latter was aimed at exploring divergent ways of couples' passage into parenthood and the process of overcoming major family and personal change with 3 main phases: preparatory, childbearing and 'early baby' ones. The sample included 30 couples (60 men and women altogether) selected through snowball technique controlling for their age and education. Recruited couples fell equally into following age categories: 18-29, 30-39 and 40-55, with each group further differentiated into 3 major subgroups in line with their level of education: primary, secondary and tertiary (Bobić, Stanojević, 2014a; 2014b; Bobić, Lazić, 2015).

By way of undertaking these two complementary fieldworks and combining their outcomes with similar ones conducted locally and recently we gained a lot of results and interpretations related to: women's reflection on this transition, its most critical moments, decision making process, preparations for parenting and coping strategies applied. Furthermore, we were also able to analyse and compare evidence on gendered division of tasks and responsibilities at home, at the beginning of parenting in both researches. Value orientations analyses was crucial in exploring: main drivers of gendered behaviour including also a satisfaction thereabout ('fairness paradox') under prevailingly patriarchal ideology and everyday performance. Secondly, we also considered structural constraints: the living standards of female respondents from 2017 are reported to be very low: unemployment was high as well as precariousness (part time jobs, low paid and without a contract, without fulfilment of basic human rights, etc.), especially with younger cohorts (Sekulić *et al.*, 2017). These bleak living conditions are conducive for preserving of patriarchy, parochial political views, lack of democratic and liberal viewpoints, including equality, pluralism, pro-activism and "open future" (Sekulić *et al.*, 2017).

In order to support main findings on persistently gendered parenting and incompleteness of 'second half' of gender revolution which have their demographic and political repercussions, we shall be recalling some of our earlier researches (mainly from 2010). Not only is the 'gender revolution' stalled even among younger cohorts (18-29) but re-traditionalization (revitalization of patriarchal views around family life) has also been

proved which is both structurally and ideationally conditioned. This is reported ever since the last decade of the twentieth century and is related to massive pauperization and social exclusion of majority of citizens in the process of post socialistic transition, concomitant demise of social state and inefficient social services, all of which led to strengthened pro-familism (stark reliance on familial resources and social capital). Furthermore, status of Serbia as the state at European semi-periphery (Blagojević Hughson, 2013), combined with enforced public patriarchy, active role of the Orthodox Church in public discourse, etc., brought about perseverance of masculine authorities and massive social inequalities.

Results

The level of fertility has been somewhat higher in our sample compared to total population of the country which is due to its research design aimed at analysing women's experiences and practice of childbearing and partnership. Therefore, as many as 49.4% of female respondents reported to have two children, less only one (38.8%) with the lowest portion with three and more (10.7%). Majority of women reported to have been satisfied with the accomplished family size (61.2%), yet not small share has not (38.6%). When asked on the desired number of children, clear majority (86.6%) claimed either three (45.1%) or two (41.5%). Despite that only one out of three women (29%) has been planning further childbearing whereas more than half have not (53.3%). Some 17.4% opted for spontaneity meaning that if they become pregnant they will be giving a birth.

We also explored whether fulfilment of some of the conditions would lead to next childbearing. More than half of respondents would not have additional child regardless of any changes (51.5%), and only one out of five (21.7%) would, provided improving of their economic conditions. Other facilitators have been quite scarcely opted for as preconditions for further childbearing: better health in general (5.6%), marital happiness (4.2%), reconciliation of motherhood and other life domains (2.1%), promotion of generous family planning policy (1.7%), etc. These findings express apparently a kind of 'demographic depression' most probably overlapping with prolonged socio-economic, political hardships in the country and overwhelmingly presented feeling of helplessness. In addition, this gloominess is the outcome of huge emigration of youth (Bobić, Vesković-Anđelković, 2017) and consequently ageing and shrinking of cohorts in reproductive ages.

For the sake of getting a clear and straightforward presentation of results, they will be further presented under separate subheadings: family planning, meaning of childbearing and gendered division of tasks at home.

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Family planning

When planned pregnancies were cross tabulated with type of residence it came out that those living in urban and suburban settings were more inclined to plan their first baby (54.8%) compared to those living in rural ones (23.3%). Cross tabular examination showed that strongest statistical linkage has been expressed when including following independent variables: age, marital status and total household revenues.[3] Middle aged women (30-45) were planning first pregnancy more often – 82.6%, compared to younger and older cohorts – 75.5% and 75.1%. One out of four younger and older respondents reported on unplanned pregnancies – 24.9% and 24.5% respectively. Since one out of five married women has not planned conception, there comes out that marriage is apparently strongly related to transition into parenthood.[4] The sum of total revenues of a household is positively linked to decision making on childbearing both with first born and all subsequent ones.[5]

Yet, vast majority of women achieve desired family size irrespectively of material wellbeing, which is probably related to strong pro-familistic ideology in CEE and Southern European countries discussed above. Although globally speaking, family planning was widespread in our sample, it was still more prevalent among women coming from higher income families. In fact, with the rise of income, childbirth planning is on the increase and vice versa. As many as 80.4% of women living in households with highest revenues (more than 900 euros monthly) planned their first conception compared to 69.1% of poorest ones (with less than 300 euros per month). One in three pregnancies among poorest respondents (less than 300 euros) has not been planned whatsoever (30.9%). Unplanned children are more common amidst single mothers (41.9%) and, supposedly extramarital ones, living without a partner, since the overall share of cohabitations in the country is as low as 3.8% (Stanković, 2015).

Second parity was somewhat less planned – 68.8%, with those coming from the cluster of moderate level resources being mostly rational (1,200-1,500 euros per month) – 77.1%. Middle aged women (30-45) turned out to be more reflexive – 42.0%, compared to their elder (46-60) and young counterparts – both 19.8%. Considering education, as expected, women with highest degrees have been mostly reflexive – 74.4%, including also those living in urban centres – 72.2%.

[3] Chi square=11.438, df=2, p=0.003, Cramer's V=0.086.
[4] Chi square=13.30, df=4, Cramer's V=0.93.
[5] Chi square=14.071, df=5, p=0.015, Cramer's V=0.097

It was highly desirable that husband takes part in both decision-making on the first child – 76.2% as well as on higher parities – 63%.[6] Still, 15% of babies had been conceived spontaneously and one out of 9 women made it as a personal resolution, irrespectively of males/husbands. This outcome is related to age and education. Younger cohorts (18-29) are more likely to rely on mutual views – 67.9%, while the elder (46-60) are least likely – 56.4%.[7] Higher educated women were mostly prone to consensus – 67.6%, followed by women with secondary education – 60%.[8] Thus, the stronger the human capital the more mutuality among partners. This is probably due to high opportunity costs especially with better educated women and hence their need for stronger reliance on a partner and wider social networks of immediate kin and friends during pregnancy, at the early baby stage and throughout child's socialization.

Meaning of childbearing

Childbearing is evidently a terminal value for vast majority of females in Serbia today. As many as 88.9% and 83.0%, respectively, claimed that 'wish to have children' and 'to have my own family' were of utmost importance in their lives. Not only is patriarchal ideology at stake here (which emphasizes reproduction and females' principal role and responsibility of sociobiological reproduction of the family, the nation and the state), but also the inner socio-psychological meaning of becoming a parent. Entering into unions is one of the main markers of transition into adulthood and it is highly socially approved both in Serbia and other Mediterranean countries with marriage being hardly a value *per se* because of its instrumental, intrinsic value – producing of offspring. Therefore, our respondents claim that marriage without children is not worthwhile. Parenthood is a core family value and placed in front of partnership. Latter does not represent separate life goal like in advanced industrialized societies where parenting comes as a result of happiness/wellbeing in partnership, and both partnering and parenting are parts of a self-actualization and individualization projects. Furthermore, parenting in advanced economies is time framed whatsoever (for around 20 years after which children are leaving home). To the contrary, in Serbia as in Italy and other Southern European cultures, parenting is a lifelong project, presupposing self-sacrificing of personal time, resources, energy, emotions and life strategies, all of which are directed at 'his king child' (Blagojević, 1997; Blagojević Hughson, 2013; 2014).

[6] Chi square=19.976, df=10, p=0.03, Cramer's V=0.08.
[7] Chi square=19.976, df=10, p=0.03, Cramer's V=0.08.
[8] Chi square=41.703, df=10, p=0.00, Cramer's V=0.12.

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The equal portion of couples either do or do not prepare for the arrival of baby and 'early baby stage' (30% respectively). Those who are pro-active here are also very much talking to a partner/husband and gather and exchange information mutually, using also experts' resources, handbooks, media and other people experiences. This is especially true among better educated women and couples, living in urban areas and those from upper social strata.

In reference to upper adopted theoretical paradigm we have examined the relevance women put down to marital satisfaction and (first) childbearing as precondition for next parities. More than half of all respondents (56.7%) claimed that 'early baby stage' had had an impact for further childbearing. As many as one out of five women (18.3%) strongly emphasized positive experiences with first baby being conducive to next ones, thus making altogether 2/3 of the whole sample and, therefore, proving for high relevance of this stage (75.0%). Statistically significant links were reported with age[9] and residential status (size of a place women live in).[10]

Middle age respondents (30-45) most frequently opted for the answer "I felt satisfied in my marriage and wanted more children with my husband" – 60%, followed by elderly (46-60) – 55.1%, and finally, youngsters (18-29) – 52.9%. Positive experiences with previous child was highlighted by every fifth younger respondent (20.6%). One out of eight women from oldest age group reported that first baby stage had not had an impact (12.9%) and one out of ten younger and middle-aged ones (10.9% respectively). The option 'having a baby meant a possible way to separate myself from parents and leave them' was very rare (only around 1%). This is to be understood in the context of kinship-based solidarity among Serbia citizens, as well as great housing challenges, as a result of their shortages, high costs, and lack of social housing for youth. Latter is also to be looked in when addressing widespread practice of extended family households (24%) ever since the onset of transition, reflected in practice of young couples and families living with parents, and/or relatives. Namely, every fourth woman reported that her family had been pressed to stay with parents or siblings because they could not afford living on their own. This outcome boosts one of the main theses on recycling of traditionalism and patriarchy due to prevailing structural and institutional barriers (see: Milić *et al.*, 2010), which has a clear negative demographic effect in terms of putting fertility on halt, despite overwhelmingly presented preferences for children.

[9] Chi square=18.353, df=10, p=0.49, Kramer's V=0.94.
[10] Chi square=38.005, df=15, p=0.001, Cramer's V=0.111.

Gendered division of tasks at home – 'fairness paradox'

In line with informed theory which we deployed here, we explored the division of tasks once mother and baby arrive home. The main question was to what extent women do rely on their husbands at this early baby stage.

Table 1.
Housework distribution at an early baby stage (%)

Who did what?	1	2	3	4	5	6	Total
Bathed baby	46.7	7.8	36.5	8.4	0.3	0.2	99.8
Put baby asleep	65.0	3.0	30.2	1.4	0	0.1	99.7
Changed diapers	66.0	0.9	31.9	0.7	0.1	0.2	99.7
Woke up in night-time when baby cried	59.3	3.4	36.0	0.8	0	0	99.6
Took baby out	41.0	4.0	51.3	2.4	0.1	0.6	99.4
Took to doctor for a check up	36.5	2.6	60.5	0.3	0	0	99.8
Ironed baby's clothing	80.1	1.1	7.9	9.3	0.1	0.5	99.0
Cleaned apartment	67.8	2.4	20.9	7.2	1.0	0.4	99.6
Cooked	69.9	1.5	10.2	17.3	0.1	0.6	99.6
Created baby's photo album	60.8	7.0	28.1	1.5	0	0.9	98.2

Legend: 1-women/mother/respondent; 2-husband; 3-equally respondent/female and her husband; 4-female's mother or husband's mother or kin; 5-paid service; 6-someone else.
Note: Total is less than 100% due to few missing cases.
Source: Author's own calculations.

Table 1 brings taxonomy of main activities around baby and household and their distribution among partners. As could be clearly seen from empirically gathered data, the biggest burden is shouldered by women, even though mothers are expected to have been recovering after 9 months of pregnancy and labour. Vast majority of activities are carried out by women, be it for baby or household. This is already approved in our previous qualitative research (Bobić, Stanojević, 2014a; 2014b) and in other domestic sociological researches of early parenting (Tomanović *et al.*, 2016).

Starting from an early baby stage, gendered division of tasks resumes throughout family life course (table 2). As is clearly shown, on average, men do not participate in chores and other activities, except for slightly higher engagement in everyday shopping. There are however some shared tasks, such as daily shopping and assisting minors.

Apparent 'unfairness' in terms of huge reliance on women's resources is a constant feature of family life in Serbia, which has been recurring (graph 2).

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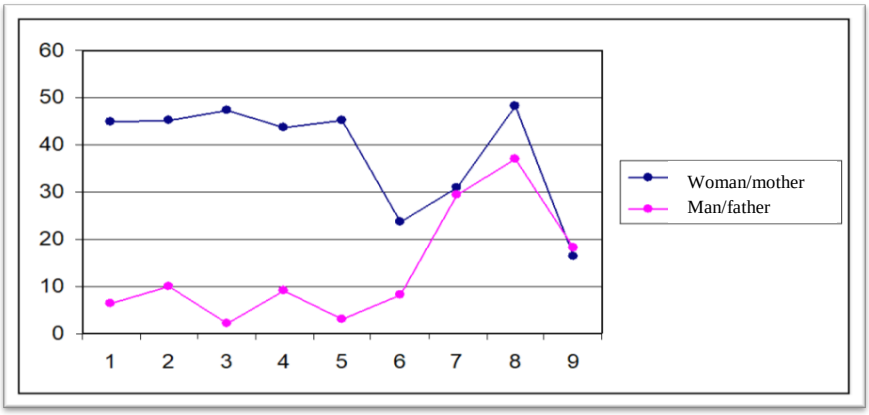
Table 2.
Distribution of core tasks at home (%)

Tasks	Wife	Husband	Together	Someone else	Total
Cooking	78.2	1.1	10.0	10.7	100.0
Washing (cloths)	88.8	1.0	6.3	3.9	100.0
Dish washing	74.5	1.9	17.3	6.3	100.0
Cleaning	72.4	1.7	20.4	5.5	100.0
Everyday shopping	37.6	15.7	43.2	3.5	100.0
Meeting children's needs on a daily base	58.0	2.3	38.6	1.2	100.0
Source: Author's own calculations.					

These results stem from a representative survey carried out in 2010 among population at local communities in Serbia (n=1,950) (Bobić, 2012).[11]

Figure 2.
Division of tasks at home, local communities in Serbia, 2010 (%)



Legend: 1-cooking; 2-dishwashing; 3-washing up; 4-cleaning; 5-ironing; 6-tyding child's room; 7-everyday shopping; 8-escorting of a child to a kindergarten or school; 9-assisting with child's school tasks; 10-care of minors; 11-care of sick and elderly.
Source: Bobić, 2012.

Despite this obviously gendered practice, as many as 63.6% of women in 2017 claimed that distribution of tasks in their home was 'fair', whereas one out of three expressed moderate or strong dissatisfaction (31.2%) and as few as 5.3% were undecided. Yet this 'fairness paradox' (Ruppanner *et*

[11] However, it did not encompass respondents living in families only because its purpose was aimed at exploring of statements of citizens in Serbia on various social issues, such as gender equality, ecology and European integration.

al., 2017) has not come as a surprise for us when it comes to Serbia today. Distributive justice at home has yet not taken place among majority of respondents, most likely as an outcome of prevailing values also including socialisation in traditional families with pronounced gender asymmetry (Bobić, 2017). This is not to say that some shifts have not been occurring with more educated, active, urban and middle-aged women and their partners, holding more of egalitarian attitudes. Changing practice has increasingly been documented as a result of men's more active role in fathering and to a lesser extent in chores (Stanojević, 2015). These 'new fathers' are reported to be usually younger, better educated, middle class, urban professionals, advocating for egalitarian views and practice around family as well as in public domain (Evertsson *et al.*, 2018).

Toward conclusion

Our research has indicated several points which have clear policy implications. Firstly, socio-psychological cost of childbearing in today Serbia is very high. Women/mothers are main caregivers, but they are also expected to share provider's role with men, which is inherited from former socialistic system. Motherhood is exhaustive because women are expected to embark on a parenthood as a lifelong project, investing all their resources, time and energy, affection and emotions for the sake of 'his/her king child' and husband, with increasing portion of care to be delivered to elderly in an ageing population. Such an outlook of one's biography is not only corny, outdated and traditional, but is highly conflictual with other domains of lives in an information based, globalized world where young people are presented with many chances and choices of an open future. Delayed entry into unions, i.e. low and ageing fertility and nuptiality are thus rational response to societal risks and unpredictable turns of life. Therefore, as is reported in the latest census 2011 in Serbia, one out of three women has been exiting reproductive ages without giving birth. These are, on average, single women (unmarried and non-cohabiting), living in urban settlements, with completed tertiary education, economically active and employed (Rašević, 2015).

Secondly, patriarchal ideology is still vastly shaping everyday lives of both women and men, putting enormous strain on both parties. Women can hardly reconcile work and family, they are pressed to give up large families, whereas men face 'crisis of masculinity' in terms of limited capability to provide for their families as a result of frequent sacks, high unemployment, low living standards and precariousness, all of which are consequences of long term economic and social restructuring and massive social exclusion for vast groups of population at the semi-periphery (Hughson, 2017).

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Marriage and fertility rates are falling, and divorces are rare, as well as cohabitations with extramarital births being at moderate level (Stanković, 2015). However, this is not a result of personal choice, but, instead, hurdles to get to realize one's basic preferences around children and family. Thus, Serbian population is predominantly opting for nuclear family and unions are to be assessed as rather stable, thus laying a solid ground for potential interventions to increase fertility under conditions of: 1) stronger transformation of private sphere towards egalitarianism and fairer share of parenthood, care work and household chores; 2) generous family and population policies which are apparently needed for the sake of support of those who wish to realize themselves as parents; 3) enhancing of quality of everyday life.

The last two points go beyond the scope of this paper and demand entirely new discussion. Therefore, we will resort to the first one which is more related to our overall topic. It tackles stronger inclusion of men/fathers in both care work and household, therefore leading to happier couples and higher parity eventually. 'Daddy quota' (paid paternity leaves of varying length, but usually a short term up to 4 weeks) (Davaki, 2016)[12] is a solidly conceived political response to counter gender imbalances in early parenthood stage, strengthening bonds between both fathers and children and couples. Policies such as gender-neutral parental leaves, like those in Sweden, then right to reduced working hours for parents, high quality, available and affordable childcare facilities, contribute to gender equality in (early) parenting and new fatherhood (Evertsson *et al.*, 2018). Promotion of family friendly work environment, especially for men, popularization of family, parenthood and 'new fatherhood' in education system, social media, with youth, etc., are important policy measures aimed at increased fertility. Counselling about marital crisis during the transition to parenthood and throughout life course has also been highlighted as an important resource of support for young families, strengthening their competence, especially at local communities since challenges related to parenting and partnership are reported as sources of unhappiness, conflicts and instability and therefore need to be given more attention in practice. Socialization of household tasks through services aimed to alleviate enormous burden of housework as well personal assistance for minors and majors at home would also be highly beneficial, particularly when arranged and funded by local communities.

[12] EU states differ in schemes of leaves from work for parents, mothers and fathers. In 2017 the most extensive paternal leave was in Slovenia – 7 weeks with tendency to be shortened (EPRC, 2014). On varying schemes of a 'daddy quota' more information can be gained in: COUNCIL OF EUROPE (2009).

Finally, there is a whole set of measures aimed at work family balance which are partly overlapping with reducing socio-psychological costs and are of utmost importance for facilitating higher parities and couples' overall happiness/wellbeing. Last but not least, there comes improvement of living standards in Serbia (more and better paid jobs, enhanced work conditions, stable employment and work contracts, fulfilment of employees' human rights, professional promotion routes, better quality housing, health, education, cultural consumption, environmental protection, etc.). Our survey acknowledged vast impoverishment of women in Serbia today, which means actual bleak economic power in both public and private sphere and low negotiation potential for changing gendered performance in everyday lives with a strong effect onto reproduction and further childbearing.

References

AASVE, A., ARPINO, A., & BILBO, N. (2016). It Takes Two to Tango. Couples' Happiness and Childbearing. *European Journal of Population* 32(3): 339–354. https://doi.org/10.1007/s10680-016-9385-1

BLAGOJEVIĆ, M. (1997). *Roditeljstvo i fertilitet, Srbija devedesetih.* Beograd: ISI FF i Čigoja štampa.

BLAGOJEVIĆ HUGHSON, M. (2013). *Rodni barometar u Srbiji*. Beograd: UNWOMEN.

BLAGOJEVIĆ HUGHSON, M. (2014). Transformation of Parenthood: The Semiperipheral Perspective. *Sociologija* 56(4): 383–402. https://doi.org/10.2298/SOC1404383B

BOBIĆ, M. (2012). Rodna (ne)ravnopravnost. Reprodukcija patrijarhata na lokalnom nivou. U M. Petrović (ur.), *Glokalnost transformacijskih promena u Srbiji* (str. 203–227). Beograd: ISI FF i Čigoja Štampa.

BOBIĆ, M. (2017). Od partnerstva ka roditeljstvu: Od uzajamnosti do odvojenosti. *Limes Plus* 14(2): 107–133. link

BOBIĆ, M., & LAZIĆ, S. (2015). Prakse u svakodnevnom životu parova na početku roditeljstva. U I. Jarić (ur.), *Politike roditeljstva: Iskustva, diskursi i institucionalne prakse*. Beograd: Filozofski fakultet Univerziteta u Beogradu.

BOBIĆ, M., & STANOJEVIĆ, M. (2014a). Transition from marriage into parenthood: discourses and practice-dyadic perspective. *Sociologija* 56(4): 427–444. https://doi.org/10.2298/SOC1404427B

BOBIĆ, M., & STANOJEVIĆ, M. (2014b) The process of family transformation and couple's self reflection – dyadic perspective. *Sociologija* 56(4): 445–457. https://doi.org/10.2298/SOC1404445B

BOBIĆ, M., & VESKOVIĆ-ANĐELKOVIĆ, M. (2017). To Stay or to Leave? On Emigration of Youth from Serbia. In M. Bobić & S. Janković (eds.), *Towards Understanding of Contemporary Migration. Causes, Consequences, Policies, Reflections.* Belgrade: ISI FF and Serbian Sociological Society.

COUNCIL OF EUROPE (2009). *Family Policy in Council of Europe Member States.* Council of Europe. link

DAVAKI, K. (2016). *Demography and family policies from a gender perspective*. Study for the femm committee. Brussels: European Parliament, Directorate-General for Internal Policies. http://dx.doi.org/10.2861/14530

ĐURĐEV, B. (2004). Koliko dece treba Srbiji? *Stanovništvo* 42(1-4): 29–44. https://doi.org/10.2298/STNV0404029D

EPRC (2014). Maternity and Paternity Leave in the EU. At a Glance. Infographic – December 2016. Brussels: European Parliament. link

EC (2006). *The Demographic Future of Europe. From Challenge to Opportunity*. Luxembourg: Office for Official Publications of the European Communities. link

EVERTSSON, M., BOYE, K., & ERMAN, J. (2018). Fathers on call? A study on the sharing of care work between parents in Sweden. *Demographic Research* 39: 33–60. http://dx.doi.org/10.4054/DemRes.2018.39.2

FREJKA, T. (2008). Overview Chapter 2: Parity distribution and completed family size in Europe: Incipient decline of the two-child family model? *Demographic Research* 19: 47–72. http://dx.doi.org/10.4054/DemRes.2008.19.4

FREJKA, T., & GIETEL-BASTEN, S. (2016). Fertility and Family Policies in Central and Eastern Europe after 1990. *Comparative Population Studies* 41(1): 3–56. http://dx.doi.org/10.12765/CPoS-2016-03en

GOLDSCHEIDER, F., BERNHARDT, E., & LAPPEGÅRD, T. (2015). The Gender Revolution: A Framework for Understanding Changing Family and Demographic Behavior. *Population and Development Review* 41(2): 207–239. https://doi.org/10.1111/j.1728-4457.2015.00045.x

HÖHN, CH., AVRAMOV, D., & KOTOWSKA, I. (eds.) (2008). *People, Population Change and Policies. Lessons from the Population Policy Acceptance Study Vol. 1: Family Change*. Dordrecht: Springer Netherlands. http://dx.doi.org/10.1007/978-1-4020-6609-2

HUGHSON, M. (2017). *Muškarci u Srbiji. Druga strana rodne neravnopravnosti*. Beograd: Institut za kriminološka i sociološka istraživanja.

KOHLER, H. P., & MENCARINI, L. (2016). The Parenthood Happiness Puzzle. An Introduction to Special Issue. *European Journal of Population* 32(3): 327–338. https://doi.org/10.1007/s10680-016-9392-2

LAPPEGÅRD, T., GOLDSCHEIDER, F., & BERNHARDT, E. (2017). Introduction to the Special Collection on Finding Work-Life Balance: History, Determinants and Consequences of New Breadwinning Models in Industrialized World, editorial. *Demographic Research* 37: 853–866. http://dx.doi.org/10.4054/DemRes.2017.37.26

LESTHAEGHE, R. (2010). The Unfolding story of the Second Demographic Transition. *Population and Development Review* 36(2): 211–251. https://doi.org/10.1111/j.1728-4457.2010.00328.x

LUTZ, W., SKIRBEKK, V., & TESTA, M. R. (2006). The Low Fertility Trap Hypothesis: Forces that May Lead to Further Postponement and Fewer Births in Europe. *Vienna Yearbook of Population Research* 4: 167-192. https://www.jstor.org/stable/23025482

MARGOLIS, R., & MYRSKYLÄ, M. (2011). A Global Perspective on Happiness and Fertility. *Population and Development Review* 37(1): 29–56. https://doi.org/10.1111/j.1728-4457.2011.00389.x

MARGOLIS, R., & MYRSKYLÄ, M. (2015). Parental Well-Being Surrounding First Birth as a Determinant of Further Parity Progression. *Demography* 52(4): 1147–1166. https://doi.org/10.1007/s13524-015-0413-2

McDONALD, P. (2002). Sustaining fertility through public policy: The range of options. *Population-E* 57(3): 417–446.

MENCARINI, L., & TANTURRI, M. L. (2006). High Fertility or Childlessness: Micro-Level Determinants of Reproductive Behaviour in Italy. *Population* 61(4): 389–415. DOI: 10.3917/popu.604.0463

MILIĆ, A. (ur.) (2010). *Vreme porodica. Sociološka studija o porodičnoj transformaciji u savremenoj Srbiji*. Beograd: Filozofski fakultet Univerzitet u Beogradu, Čigoja štampa.

MILLS, M., BEGALL, K., MENCARINI, L., & TANTURRI, M. L. (2008). Gender equity and fertility intentions in Italy and the Netherlands. *Demographic Research* 18: 1–26. https://doi.org/10.4054/DemRes.2008.18.1

MYRSKYLÄ, M., & MARGOLIS, R. (2014). Happiness: Before and After the Kids. *Demography* 51(5): 1843–866. https://doi.org/10.1007/s13524-014-0321-x

NEWMAN, L. (2008). How parenthood experiences influence desire for more children in Australia: A qualitative study. *Journal of Population Research* 25(1): 1–27. https://doi.org/10.1007/BF03031938

NIKITOVIĆ, V. (ur.) (2015). *Populacija Srbije početkom 21. veka*. Beograd: Republički zavod za statistiku. link

PARR, N. (2010). Satisfaction with life as an antecedent of fertility: Partner + Happiness = Children? *Demographic Research* 22: 635–662. https://doi.org/10.4054/DemRes.2010.22.21

RAŠEVIĆ, M. (2015). Fertilitet ženskog stanovništva. U V. Nikitović (ur.), *Populacija Srbije početkom 21. veka* (str. 74–98). Beograd: Republički zavod za statistiku. link

RUPPANNER, L., BERNHARDT, E., & BRANDÉN, M. (2017). Division of housework and his and her view of housework fairness: A typology of Swedish couples. *Demographic Research* 36: 501–524. https://doi.org/10.4054/DemRes.2017.36.16

RZS (2016). *Demographic Yearbook 2015*. Belgrade: Statistical Office of the Republic of Serbia. link

SEKULIĆ, N. M., JARIĆ, I., & RADONJIĆ, O. (2017). U senci javnih politika. Rodne politike i rodno iskustvo. Predgovor. *Limes Plus* (tematski broj) 14(2): 5–11. link

STANKOVIĆ, B. (2015). Bračnost stanovništva. U V. Nikitović (ur.), *Populacija Srbije početkom 21.veka* (str. 194–222). Beograd: Republički zavod za statistiku. link

STANKUNIENE, V., & MASLAUSKAITE, A. (2008). Family Transformations in the Post-Communist Countries: Attitudes Toward Changes. In Ch. Höhn, D. Avramov & I. E. Kotowska (eds.), *People, Population Change and Policies* (pp. 113-138). Dordrecht: Springer. https://doi.org/10.1007/978-1-4020-6609-2

STANOJEVIĆ, D. (2015). *Oblikovanje novog očinstva kroz prakse očeva u Srbiji* (doktorska disertacija). Beograd: Filozofski fakultet Univerziteta u Beogradu. link

TOMANOVIĆ, S., STANOJEVIĆ, D., & LJUBIČIĆ, M. (2016). *Postajanje roditeljem u Srbiji. Sociološko istraživanje tranzicije u roditeljstvo*. Beograd: Filozofski fakultet Univerziteta u Beogradu.

UN (2017). *World Population Prospects – The 2017 Revision. Key Findings and advance tables.* New York: United Nations – Department of Economic and Social Affairs, Population Division. link

VOBECKÁ, J., BUTZ, W. P., & REYES, G. C. (2013). *Population Trends and Policies in UNECE Region*: *Outcomes, Policies and Possibilities*. Laxenburg, New York: IIASA and UNFPA. link

ZEMAN, K., BEAUJOUAN, E., BRZOZOWSKA, Z., & SOBOTKA, T. (2018). Cohort fertility decline in low fertility countries: Decomposition using parity progression ratios. *Demographic Research* 38: 651–690. https://doi.org/10.4054/DemRes.2018.38.25

Mirjana Bobić*

O sociopsihološkoj ceni rađanja – novi uvidi

R e z i m e

Rad se bavi do sada nedovoljno analiziranom stranom niskog fertiliteta u istraživanjima i politikama prema stanovništvu, porodicama i deci, tzv. sociopsihološkom cenom (prvog) rađanja. Reč je o ličnoj percepciji individualnog i roditeljskog blagostanja/sreće i evaluaciji iskustava rađanja prvog ili prethodnog deteta, kao važnim preduslovima za rađanje sledećeg, odnosno višeg reda. Smatra se da ova cena, ako je visoka, predstavlja značajnu prepreku rađanja više dece, posebno drugog i trećeg pariteta. U pokušaju da osvetlimo tu dimenziju objašnjenja nedovoljnog rađanja u savremenim, industrijalizovanim populacijama, u ovom tekstu ćemo ostaviti po strani druge, velike i značajne aspekte materinstva/roditeljstva, kao što su: medicinska i psihološka cena začeća, trudnoće, porođaja, kao i drugi „troškovi" povezani sa ekonomskom cenom roditeljstva, zatim, oportunitetni, pitanja sekundarnog steriliteta, reproduktivnog zdravlja, itd. Ostavljamo po strani i razmatranje jedne velike sfere koja ima velikog uticaja na donošenje odluke o rađanju: usklađivanje rada i roditeljstva, koja se preklapa sa sociopsihološkom cenom rađanja.

U radu se polazi od nesumnjivog značaja teorije druge demografske tranzicije (DDT), koja je pružila solidan okvir za razumevanje i istraživanje niskog fertiliteta od druge polovine 20. veka pa do danas. Njeni su proponenti uspeli da povežu različite demografske, socijalne, ekonomske, kulturne, geografske, nacionalne i političke kontekste i da ukažu na bitne pokretače savremenih populacionih promena u industrijalizovanom svetu, kao što su globalizacija i individualizacija, sa reperkusijama na režimima bračnosti i rađanja. Ova je teorija, međutim, pružila i prilično sumorna predviđanja u odnosu na mogućnost revitalizovanja (već veoma niskog) fertiliteta u bliskoj i daljoj budućnosti. Značaj sociopsihološke dimenzije se naglašava uporedo ili u vezi sa delovanjem politika namenjenih balansiranju rada, porodice i dokolice. Ovi novi uvidi u fenomen niskog fertiliteta bi, smatraju zagovornici, mogli da budu osnova za optimističnije poglede na buduću stabilnost porodice i čak izvesno rehabilitovanje rađanja.

Prethodno navedena teorijska razmatranja su nam poslužila da osvetlimo reproduktivna i partnerska iskustva, stavove i strategije, pozivajući se na empirijska istraživanja, kako strana, tako i domaća. Nasuprot stranim nalazima, domaća istraživanja, recimo poslednje sprovedeno na reprezentativnom uzorku žena 2017, kao i komplementarna, kvalitativna i kvantitativna ispitivanja roditeljstva i partnerstva iz prethodnih godina, pokazala su da je u našoj sredini i dalje prisutna ideologija intenzivnog majčinstva i nuklearne porodice, da je roditeljstvo terminalna vrednost i marker odraslosti, da je brak instrumentalizovan, jer brak bez dece nema puno smisla za naše stanovništvo, kao i da je rodna asimetrija kako na početku roditeljstva, tako i kasnije u toku zajedničkog života, istrajna, normalna i opšteprihvaćena. Paradoksalno, ali samo na prvi pogled, žene izražavaju lično

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zadovoljstvo ovakvim stanjem stvari, iako rađaju manje dece nego što žele, odlažu brak i roditeljstvo do 30. godine i kasnije, sve više njih izlaze iz reproduktivnog perioda bez dece i izvan unija, protivno ličnim opredeljenjima, sve više emigriraju. Kada se konačno udaju, rađaju nešto više od jednog deteta u proseku iako žele troje. Dakle, odustaju od daljeg rađanja, maksimalno su opterećene privatnom sferom, a dele ulogu hranioca sa mužem/partnerom, jer su plate i standard stanovništva veoma niski, a siromaštvo veliko. Dominantna patrijarhalna ideologija sužava sve lične izbore i u porodici i izvan nje, proizvodeći negativne demografske i društveno razvojne efekte, iako pledira u njihovu korist. S obzirom na pogubne demografske i socijalne efekte, u vidu veoma niskog fertiliteta, poodmaklog starenja i sve intenzivnije emigracije mladih, dakle, masovnu depopulaciju koja je zahvatila Srbiju, smatramo da je neophodna transformacija privatne sfere, kao i popravljanje kvaliteta života u svakodnevici (životnog standarda i stila), demokratizacija društva, poštovanje prava na lične izbore (pa i reproduktivne) i primena sveobuhvatnih mera podrške roditeljima, porodici i deci.

Ključne reči: *sociopsihološka cena rađanja, partnerstvo, transformacija rodnih uloga, Srbija, politike prema porodici*

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SEASONALITY IN HUMAN MORTALITY: RESULTS FOR THE CITY OF NOVI SAD (SERBIA)

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Seasonal variation in mortality has long been recognized and confirmed in diverse studies by demographers, climatologists, medics, sociologists etc. Existing research suggests that most world regions experience increase in mortality during winter period and that countries and regions in temperate climate have higher winter mortality than regions in colder climate. As well, numerous studies have so far demonstrated temperature-related mortality associations with increased risk due to both heat-related and cold-related death. The objective of this paper is to research seasonal variations in mortality due to seasonal changes in average air temperature among urban population of Novi Sad (Serbia). The analysis covered the period between 1953 and 2013 for both total and old population (65 and over) by gender and for all-cause mortality, while causes of death were observed only for the 1998-2013 period. This paper considers only cardiovascular diseases I00-I99 (CVD) according to the International Classification of Diseases (ICD, version 10). Seasonal changes in mortality were observed using the coefficient of seasonal variation in mortality (CSVM) while the data were split into five periods in order to research temporal changes. Results for CSVM indicated that mortality in winter period was higher than mortality in non-winter periods, whilst the analysis of the temperature-related mortality suggests that low temperature caused an increase in mortality over the entire year. Despite the confirmed seasonal changes in mortality and the evidence for temperature-related mortality, this research has recognized a declining trend in population vulnerability over time.

Keywords: *mortality, seasonality changes, Serbia, average air temperature, cardiovascular mortality*

Introduction

Seasonal pattern of mortality has long been recognized and detected. Seasonality of mortality is related with different demographic and social factors, environmental issues etc. During the twentieth century climate changes sparked research about influences of climate on mortality and the most frequent issue was the air pollution and the air temperature related mortality.

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One part of the findings supports the standpoint that extreme events have the biggest impact on population health and seasonal changes in mortality, but contrary to this, there is an opinion that seasonality in mortality is connected with regular changes of weather during the year. Both theses are justified considering different approaches due to the fact that extreme weather events are observed in a short period, usually during extreme hot or cold periods, while seasonal changes of weather and their impact on mortality are analysed during longer time series.

Contemporary findings suggest that seasonality in mortality has been associated with the effects of both heat and cold (Pattenden *et al*., 2003). Usually J-, V-, or U-shaped association has been detected with increased mortality at cold and hot temperatures and minimum mortality occurring at various points, depending on latitude (Analitis *et al*., 2008). Heat waves during the summer of 2003 were breaking news around the Europe, especially in the most affected countries such as France, Italy, Switzerland and Portugal. France was the most affected European country by the heat wave with the estimated excess mortality of 54%. Across the nine largest French cities, 14,800 excess deaths occurred from 1 to 20 August 2003, an overall 60% increase in mortality compared to the seasonal norm (Le Tertre *et al*., 2006). Similar results were confirmed in other countries in Europe after 2006, 2007 and 2009 when strong heat waves were registered around European regions (Dousset *et al*., 2011). Harvesting impact of heat waves were also reported in California (Ostro *et al*., 2009) and Chicago (Naughton *et al*., 2002).

Despite the increase in number, as well as in duration and intensity of heat waves, and impact on human mortality, observations on a yearly basis shows that majority of countries have experienced a higher mortality during the winter months. A more complex demographic approach to the problem of seasonality in mortality was given by Roland Rau. He investigated seasonal variation in mortality for the United States and Denmark population during the second half of the twentieth century. Seasonal pattern of mortality was confirmed in both countries with the highest mortality during the winter months (Rau, 2007). A study about seasonality of mortality and role of temperature in Germany (1946-1995) shows "that low temperatures cause an increase in mortality rates and that this effect has become less important during recent decades…." (Lerch, 1998). The similar was found for some other countries in Europe. Healy (2003) investigated excess winter mortality in the regions of the EU-14 for the period 1988-97. Results in this study show higher winter mortality in all EU-14 states. For the EU-14, the winter mortality was 16 percent higher compared to other periods of year, while comparing between countries, Portugal suffers from higher excess winter mortality (28 percent). Davie *et al*.

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(2007) explored winter mortality in New Zealand and confirmed significant excess mortality during the winter period (18 percent higher). Marti-Soler *et al*. (2014) analysed overall and cardiovascular mortality for 19 countries with different geographical location. In both hemispheres winter mortality was higher than expected and they found seasonal pattern for overall and cardiovascular mortality, while for mortality due to cancer, the seasonal variation was non-existent in most countries.

The research on this topic in Serbia was conducted in various directions, e.g. following excess winter mortality, specific-cause mortality due to the changes in air temperature or during heatwaves etc. All results presented in Table 1 are related to the beginning of the twenty-first century, because the majority of the data for earlier periods are not as available, while the other reason is related to the growing concern about heatwave impact on population since 2003. Only one study dealt with the population on the state level (Blagojević *et al*., 2012), while others were focused at the urban population in largest cities in the country. All studies confirmed that the mortality trend, particularly cardiovascular and respiratory mortality, depends on air temperature during the year or the specific season.

In this process, cities are marked as very vulnerable places where extreme hot and cold events lead to increase of daily death (Kinney *et al*., 2015). Main objectives of this paper are to research changes in seasonal pattern of mortality and its relationship with temperature in urban area of Novi Sad. The research was conducted for the period between 1953 and 2013. Novi Sad is located in the north part of Serbia and it is a second largest city in the country. According to the data by the Statistical Office of the Republic of Serbia, 231,798 inhabitants resided in the urban area of Novi Sad in 2011 (SORS, 2012).

Data and methodology

For the period between 1953 and 1997 the mortality data was collected from civil registers, whilst for the period between 1998 and 2013 the data was obtained from the Statistical Office of the Republic of Serbia. During the observed period (1953-2013) 84,413 deaths were included in analysis. Number of deaths was aggregated on monthly level. Monthly crude death rate (CDR) per 100,000 was calculated with all months standardised to 30 days. The average air temperature (T avg.) was used for the analysis of mortality and climate relationship. Data for temperature was taken from NOAA (National Oceanic and Atmospheric Administration, United States De-

partment of Commerce). Relation between the crude death rate and the average temperature was analysed through linear regression.

Table 1.
Review of recent research about temperature-related mortality and seasonality in mortality in Serbia

Source	*Area and period*	*Population indices*	*Climate indices*	*Method*	*Results*
Stanišić Stojić *et al*., 2016	Belgrade 2009-2014	Mortality in old population, for circulatory and respiratory causes	Air pollution, Temperature	Poisson regression model	Strong seasonal pattern, with mortality peak in winter months (February)
Stanišić Stojić *et al*., 2016a.	Belgrade 2009-2014	Cardiovascular, respiratory and cancer mortality	-	Winter/summer ratio, dissimilarity index	Seasonal pattern was confirmed for cardiovascular and respiratory mortality, with peak in February and March
Stanojević *et al*., 2014	Belgrade Summer 2007	Cardiovascular, cerebrovascular and respiratory mortality	Air temperature	Poisson regression model	1°C is associated with 4.6 (cardiovascular), 2.2 (cerebrovascular)
Stanojević *et al*., 2014a	Belgrade, 2000-2010	All-cause mortality	Warm Spell Duration Index; Apparent temperature	Poisson regression model	With increase of temperature over 90th, 95th and 99th percentiles, number of deaths increases for 15%, 22,4% and 32%.
Blagojević *et al*., 2012	Serbia 1992-2007	Roma population Causes of death	-	EWM index	Excess winter mortality 24% higher
Bogdanović *et al*., 2013	Belgrade July 2007	All-cause and specific causes All ages and 75 and over	-	Observed and expected number of deaths	167 excess death (all age) 151 excess death (age 75 and over)
Đurđev *et al*., 2012	Belgrade, 1888-2008	All-cause mortality, All ages, 65 and over	Air temperature	Multiple Linear Regression and Pearson correlation coefficient	Decrease of temperature is related with increase in mortality. In recent years this trend has started to change
Arsenović *et al*., 2011	Belgrade, 1946-2008	All-cause mortality, All ages, 65 and over	Air temperature	Multiple Linear Regression and Pearson correlation coefficient	Increase in mortality is related with colder period of years
Stanković *et al*., 2007	Niš 2001-2005	Cardiovascular mortality in age 65 and over	Air pollution	Poisson regression model	Ambient air pollutants concentration and cardiovascular mortality are not related

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The analysis covered both total and old population (65 and over) by gender and for all-cause mortality, while causes of death were observed only for the period 1998-2013. In this paper were considered only cardiovascular diseases I00-I99 (CVD) according to the International Classification of Diseases (ICD, version 10).

In order to study temporal changes, the data were split into five periods and the coefficient of seasonal variation in mortality (CSVM) was used to detect seasonal variation in mortality during a year. CSVM was calculated using the formula (1) given by Healy (2003), where the dividend represents the difference between the number of deaths in the winter season (December-March) and the average number of deaths occurring during the two non-winter seasons, and divisor is the average number of deaths in the two non-winter seasons:

$$(1)\ CSVM = \frac{[\mathrm{M(Dec + Jan + Feb + Mar)}] - [\mathrm{M(Apr + May + Jun + Jul)} + \mathrm{M(Aug + Sep + Oct + Nov)}]/2}{[\mathrm{M(Apr + May + Jun + Jul)} + \mathrm{M(Aug + Sep + Oct + Nov)}]/2}$$

Results

Seasonal variation in all-cause mortality, 1953-2013

Existence of seasonal trends in mortality in Novi Sad was observed using the coefficient of seasonal variation in mortality (CSVM) and results for this coefficient are presented in table 2. The analysis shows a clear seasonal pattern with the highest mortality during winter months. The analysis of the number of deaths in Novi Sad has shown that the winter mortality (December-March) is between 8% and 25% higher (between 8% and 20% for males and between 7% and 28% for females) when compared to the mortality in the preceding (August-November) and the following (April-July) period.

In all five periods, winter mortality was higher when compared to the preceding and the following period of a year. CSVM indicated that winter mortality was 25% higher in the period 1953/54-1963/64, 19% higher in 1964/65-1974/75, 11% in 1975/76-1985/86, 12% in 1986/87-1996/97 and 8% higher in 1997/98-2012/13 when compared to other periods of a year. Similar results were founded in the analysis by gender. During the 1950s, 1960s and early 1970s, females were more sensitive during the winter and CSVM reached higher value when compared to males. But the end of the twentieth and the beginning of the twenty-first century brings a smaller difference in winter mortality by gender. In the fifth observed period (1997/98-2012/13), winter mortality for males was 8% and for females 7% higher than in preceding and following periods.

Table 2.
Coefficient of seasonal variation in mortality (CSVM) in Novi Sad, 1953/54-2012/13

Period	CSVM	CSVM (male)	CSVM (female)
1953/54-1963/64	0.25	0.20	0.28
1964/65-1974/75	0.19	0.15	0.23
1975/76-1985/86	0.11	0.06	0.16
1986/87-1996/97	0.12	0.14	0.12
1997/08-2012/13	0.08	0.08	0.07
Source: Author's calculation			

In order to check the results of CSVM, the regression analysis of the temperature-related mortality was conducted using crude death rate and temperature in the five observed periods. The results show that the crude death rate and air temperature are negatively associated, the decrease of average air temperature is followed by the increase of crude death rate. The regression analysis indicated that when the average air temperature started to increase for 1°C, the crude death rate decreased (Table 3). These findings were confirmed in all five periods, and similar results were found for both gender (males and females).

Table 3.
Results of regression analysis between crude death rate and air temperature, 1953-2013

Period	Total		Male		Female	
	b	Adjusted R	b	Adjusted R	b	Adjusted R
1953/54-1963/64	0.009	0.869 ***	0.008	0.857 ***	0.009	0.815 ***
1964/65-1974/75	0.007	0.807 ***	0.005	0.569 **	0.008	0.870 ***
1975/76-1985/86	0.003	0.752 ***	0.002	0.441 *	0.004	0.689 ***
1986/87-1996/97	0.004	0.752 ***	0.004	0.418 *	0.005	0.854 ***
1997/08-2012/13	0.003	0.385 **	0.003	0.284 *	0.003	0.470 **
Note: * p<0.05, ** p<0.01, *** p<0.001; *Source*: author's calculation						

Results obtained for total mortality were also found for mortality of old population (aged 65 and over). CSVM 65+ follows the trend of CSVM in total mortality and gives evidence that winter mortality of old population was 33% higher during the 1950s and early 1960s, 25% higher in the 1960s and early 1970s while in the last observed period (1997/98-2012/13) winter mortality of old population was about 6% higher when compared with preceding and following periods (Table 4). The results for CSVM 65+ by gender confirmed the results for males and females, i.e.

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winter mortality for both sexes (males and females) was higher than during other seasons.

Table 4.

Coefficient of seasonal variation in mortality (CSVM 65+) for old population in Novi Sad, 1953/54-20012/13

Period	CSVM 65+	CSVM 65+ (male)	CSVM 65+ (female)
1953/54-1963/64	0.33	0.34	0.32
1964/65-1974/75	0.25	0.20	0.29
1975/76-1985/86	0.14	0.06	0.20
1986/87-1996/97	0.17	0.21	0.14
1997/08-2012/13	0.06	0.07	0.05
Source: Author's calculation			

The regression analysis detected a strong correlation between the crude death rate for old population and air temperature. Presented results in Table 5 show that increase in average temperature is followed by decrease in crude death rate.

Table 5.

Results of regression analysis between crude death rate of old population (65+) and air temperature, 1953-2013

Period	Total		Male		Female	
	b	Adjusted R	b	Adjusted R	b	Adjusted R
1953/54-1963/64	0.103	0.791 ***	0.126	0.887 ***	0.086	0.676 ***
1964/65-1974/75	0.072	0.791 ***	0.073	0.600 **	0.071	0.846 ***
1975/76-1985/86	0.035	0.631 **	0.023	0.149 n.s.	0.042	0.671 ***
1986/87-1996/97	0.035	0.709 ***	0.036	0.493 **	0.035	0.767 ***
1997/08-2012/13	0.016	0.396 *	0.013	0.079 n.s.	0.016	0.310 *
Note: * p<0.05, ** p<0.01, *** p<0.001; *Source*: author's calculation						

Seasonal variation in cardiovascular mortality, 1998-2013

Cardiovascular diseases (CVD) are recognized as one of the causes that highly depends on temperature changes. CVD are leading cause of death (around a half in all-cause mortality) in the population of Novi Sad. Therefore, the seasonal variation in CVD mortality was investigated additionally. Table 6 shows the coefficient of seasonal variation in CVD mortality (CSVM-CVD) for the total and old population. Winter CVD mortality is about 7% higher compared to the other season of a year (preceding and following periods). The value of CSVM-CVD is slightly higher for

males than for females. When compared to the other seasons, winter mortality for males is higher by 8% (total population) and 7% (old population), while for female is higher by 6% (total population) and 5% (old population).

Table 6.
Coefficient of seasonal variation in CVD mortality (CSVM-CVD) in Novi Sad, 1998/99-2012/13

CSVM	Value
CSVM-CVD	0.07
CSVM-CVD (male)	0.08
CSVM-CVD (female)	0.06
CSVM-CVD 65+	0.07
CSVM-CVD 65+ (male)	0.10
CSVM-CVD 65+ (female)	0.05
Source: Author's calculation	

The results of regression analysis indicated that the crude death rate of CVD and air temperature are negatively associated, namely, an increase in average temperature for 1°C is followed by a decrease of CVD mortality by b=0.002143 (adjusted R=0.42102148, p=0.013348). CVD mortality for males (b=0.002033, adjusted R=0.34648900, p=0.025870) and females (b=0.002220, adjusted R=0.39179748, p=0.017440) has also statistically significant negative correlation with the average air temperature.

The analysis of CVD mortality in old population shows that an increase of the average temperature is also connected with a decrease in mortality (b= 0.015344, adjusted R=0.29076398, p=0.040831). The results by gender suggest certain changes in the level of sensitivity to temperature oscillation over the year. Therefore, the regression analysis did not confirm statistically significant correlation between CVD mortality and the average air temperature. This finding was confirmed for both gender in the age 65 and over (b= 0.010549, adjusted R=0.22790573, p=0.066296 for male; b= 0.010818, adjusted R=0.24032384, p=0.060371 for female).

Discussion and conclusions

The analysis of mortality in urban population of Novi Sad (1953-2013) indicated a clear seasonal pattern with higher mortality during the colder period of the year. However, the results have shown that this pattern (CSVM) has been declining since the middle of the twentieth century and the difference between a cold and warm period is lower. During the 1950s and early 1960s winter mortality was more than three times higher than today. These findings were recognized also for seasonal variation in mor-

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tality by gender. Long term seasonal variation of mortality shows that during a year, in most countries, the mortality peaks during the winter months. According to Healy (2003), most countries had experienced from 5% to 30% excess winter mortality. Similar course in winter mortality was confirmed for London (Carson *et al*., 2006) and for England and Wales (Hajat *et al*., 2007). Kendrovski (2006) gives evidence for Skopje (Macedonia), for the period 1996-2000, and shows that mortality in the winter period is about 15.9% higher than in the non-winter period. When comparing results in this research with other similar research across Europe it can be concluded that seasonal variation of mortality in Novi Sad follows the seasonal pattern confirmed in most countries of North hemisphere.

The coefficient of seasonal variation in mortality of population aged 65 and over has also experienced decreasing over time, but, still, the winter mortality of old population is higher than in the non-winter period. Epidemiological and demographic transition leads to continuously increasing life expectancy, hence, a majority of counts of deaths occurs in older ages. In Novi Sad, the share of mortality of old population (65 and over) in total mortality was the following: about 50% (1953-1963), 59% (1964-1974), 64% (1975-1985), 67% (1986-1997) and 73% (1998-2013). This implies that seasonal changes in mortality of old population have the consequential role in creation of seasonal pattern of total mortality.

Seasonal variation of mortality is the lowest in countries with cold winters, for example Russia, Scandinavian countries and Canada and is higher in Great Britain, Greece, Portugal and Malta where winters are milder (Rau 2007; Davie *et al*., 2007; Fowler *et al*., 2015). Still, there is a debate why some regions, countries and cities experience higher winter mortality. As a contribution to this question, this article has examined temperature-related mortality vulnerability. The results show that increase of average temperature during a year is followed with the decrease of crude death rate. However, declining vulnerability to temperature-related mortality over the years was found. In the last observed period (1998-2013) for mortality in old ages (65+), the regression analysis did not confirm statistically significant trend for males. One of the main causes for this change can be found in the frequency of heat waves, especially during summer. This statement refers particularly to the period after 2000. Strong heat waves were registered in the summers of 2003, 2006, and 2007 and unusually high number of heat-related deaths were reported across Europe. In 2007 (during July), the area of Novi Sad (as well as the whole Serbia) experienced a strong heat wave while the number of deaths was about 35% higher compared to the same month in the preceding years as well as in the years that followed.

However, the recent studies show that European climate in the late twentieth century and early twenty-first century is very likely warmer than of any time during the past 500 years (Luterbacher *et al*., 2004), whilst climatologists forecast that temperature across Europe will rise over the coming decades and the frequency of periods characterized by extremely high temperature will double. The results of the regional climate model indicate that every second summer until the end of the twenty-first century is going to be marked by the same or higher air temperatures compared to those registered during the summer of 2003 (Luterbacher *et al*., 2004; Meehl, Tebaldi, 2004; Schar *et al*., 2004; Knowlton *et al*., 2007). Such changes of air temperature, particularly the extreme values and appearance (as well as frequency, duration and intensity) of heat waves can significantly alter the balance between mortality in winter and non-winter period. Kalkstein and Greene (1997) deal with the impact of global climate changes on mortality in large cities of the United States. In this research they give projections of excess mortality during winter and summer ("excess mortality" is defined as the difference between the observed and expected number of death). The results were based on three global climate models recommended by the Intergovernmental Climate Changes Committee (ICPP): model of Geophysical Fluid Dynamics Laboratory, NOAA, model of the United Kingdom Meteorological Office and model of the Max Plank Institute for Meteorology. All three models give forecasts for 2020 and 2050. By 2050, the difference between the observed and expected mortality during winter will be slightly reduced, but all three models forecast the increase of mortality during summer months, in certain cases up to 70%.

Regardless the fact that analysis of CVD mortality was limited only to the period from 1998 to 2013, CSVM-CVD reveals a consistent pattern as it was detected for all-cause mortality. Other causes of deaths, e.g. respiratory diseases are also exposed to seasonal changes of air temperature during the year, but due to the small numbers,[1] this cause was not investigated, as well as the other non-CVD[2] causes. Recent research suggests non-existence of seasonal variation in non-CVD mortality (Arsenović 2014; Marti-Soler *et al*., 2014) and considering that cardiovascular diseases attributed with 48% (in 1998-2013) to all-cause of deaths, it can be concluded that winter CVD mortality affects excess winter mortality for all-cause mortality.

Trends in CVD mortality were affected by the influenza epidemic during the winter 1999/2000 when the CSVM was about 0.27 (excess number of deaths was about 178, while excess CVD deaths was 90). During January

[1] Share of respiratory diseases in all-cause is about 5%
[2] All other causes except cardiovascular and respiratory diseases.

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and February 2000 population in Novi Sad was hit with strong influenza epidemic and it was one of the three strongest epidemics in the 1997-2007 period. According to the Institute for Public Health of Vojvodina Province, Centre for Disease Control and Prevention, most of the recorded deaths in January and February 1999/2000 were related to the population aged 60 and over with some existing chronic diseases (respiratory or cardiovascular). In the winter of 1999/2000, cardiovascular and respiratory excess mortality contributed with 50% to the total number of excess deaths (Arsenović *et al*., 2016).

Declining vulnerability to temperature-related mortality and changing level of excess winter mortality since the middle of the twentieth century could not be explained by air temperature only. Some other factors also played an important role in this process. Development of the system for central heating has increased prevention for temperature-related mortality. The central heating in Novi Sad has been improved during the observed period. It was launched in 1961 when 491 apartments were included in the system of heating. Today, about 80 percent of homes have central heating (SORS, 2013). Lifestyle risk behaviours have consistent role in longevity and can alert the years of life lost (YLL). Lifestyle risk factors such as physical inactivity, obesity, unhealthy diet, tobacco smoking, alcohol consumption etc. increase the risk of some chronic diseases and can attribute to higher mortality risk.

Despite the fact that temperature-related mortality has declining vulnerability over time, the risk is still evident due to raising level of urbanization and population ageing. Cities have their own microclimate forming an urban heat island which is by meteorological indicators quite diverse relative to the neighbour area (rural areas) and intensive urbanization has significant role in urban microclimate. Old population is one of the most vulnerable groups and increasing share of this age group will increase the health risk over time. The beginning of the twenty-first century is characterized by the rise of the total population of Novi Sad, but at the same time, the share of old population consistently increases particularly in some districts in the city with the average age achieving between 45 and 48 years. Consequently, this research confirmed that the mortality balance between winter and non-winter periods has changed with decreasing trend of excess winter mortality, but the appearance of extreme weather events could alert mortality risk particularly in non-winter periods. Hence, the results in this study, as well as future research, needs to establish a basis for public policies and public health system in order to provide preventive support (considering that a significant number of excess deaths are avoidable).

Limitations and direction for future research

One of the main limitations in this research is the lack of data for causes of death for the period before 1998. Mortality data for the period 1953-1997 were collected from the civil registration, and according to the state legislations after the World War II a cause of death is not the obligatory information in the process of death registration. The causes of deaths were recorded in the death certificate and according to the legislation concerning individual data, this information is not available. Availability of data about causes of deaths for earlier periods would strengthen the analysis conducted in the period 1998-2013, since the chronic diseases as the leading cause of deaths are increasing.

Data about some socio-demographic characteristics, such as marital status, employment and occupation, living arrangement, as well as urbanization, energy consumption etc., are also important factors in temperature-related mortality process. As those data were not available for the entire period analysed in this paper, the future research should be oriented towards using these variables.

References

ANALITIS, A., KATSOUYANNI, K., BIGGERI, A., BACCINI, M., FORSBERG, B., BISANTI, L., KIRCHMAYER, U., BALLESTER, F., CADUM, E., GOODMAN, P. G., HOJS, A., SUNYER, J., TIITTANEN, P., & MICHELOZZI, P. (2008). Effects of cold weather on mortality: results from 15 European cities within the PHEWE project**.** *American Journal of Epidemiology*, 168(12), 1397-1408. https://doi.org/10.1093/aje/kwn266

ARSENOVIĆ, D., ĐURĐEV B., & SAVIĆ, S. (2016). *Excess winter mortality in Novi Sad, Serbia: evidence from population in temperate climate*. Paper presented at European Population Conference, Mainz, Germany, 31 August – 03 September 2016. link

ARSENOVIĆ, D. (2014). *Impact of air temperature on seasonal variation of human mortality in Novi Sad* [In Serbian]. Doctoral dissertation. Novi Sad: University of Novi Sad, Faculty of Sciences. link

ARSENOVIĆ, D., ĐURĐEV, B., & SAVIĆ S. (2011). The time course of temperature related mortality. Proceedings of the conference "Problems and Challenges of Contemporary Geographic Science and Teaching", Brzeće, Kopaonik, 281-286.

BLAGOJEVIĆ, M. LJ., BOGDANOVIĆ, C. D., JOVIĆ J. S. MILOŠEVIĆ G. Z., & DOLIĆANIN Ć. Z. (2012). Excess winter mortality of Roma population in Serbia, 1992-2007. *Central European Journal of Public Health* 20(2): 135-138. https://doi.org/10.21101/cejph.a3711

BOGDANOVIĆ, D., MILOŠEVIĆ, G. Z., LAZAREVIĆ, K. K., DOLIĆANIN, Ć. Z., RANĐELOVIĆ, M. D., & BOGDANOVIĆ, D. S. (2013). The impact of the July 2007 heat wave on daily mortality in Belgrade, Serbia. *Central European Journal of Public Health* 21(3): 140-145. https://doi.org/10.21101/cejph.a3840

CARSON, C., HAJAT, S., ARMSTRONG, B., & WILKINSON, P. (2006). Declining Vulnerability to Temperature-related Mortality in London over the 20th Century. *American Journal of Epidemiology* 164 (1): 77-84. https://doi.org/10.1093/aje/kwj147

DAVIE, S. G., BAKER, G.M., HALES, S., & CARLIN, B.J. (2007). Trends and determinants of excess winter mortality in New Zealand: 1980 to 2000. *BMC Public Health* 7: 263. https://doi.org/10.1186/1471-2458-7-263

DOUSSET, B., LAAIDI, K., & ZEGHNOUN, A. (2011). Surface temperature variability and mortality impact in the Paris region during the August 2003 heat wave. *Urban climate news* 42: 7-14. link

ĐURĐEV, B., ARSENOVIĆ, D., & SAVIĆ, S. (2012). Temperature-related Mortality in Belgrade in the Period 1888-2008. *Acta Geographica Slovenica* 52 (2): 385-401. https://doi.org/10.3986/AGS52205

FOWLER, T., SOUTHGATE, J. R., WAITE, T., HARELL, R., KOVATS, S., BONE, A., DOYLE, Y., & MURRAY, V. (2015). Excess winter death in Europe: A multi-country descriptive analysis. *The European Journal of Public Health* 25(2): 339-345. https://doi.org/10.1093/eurpub/cku073

HAJAT, S., KOVATS, R.S., & LACHOWYCZ, K. (2007). Heat-related and cold-related deaths in England and Wales: who is at risk? *Occupational and Environmental Medicine* 64 (2): 93-100. http://dx.doi.org/10.1136/oem.2006.029017

HEALY, J. D. (2003). Excess winter mortality in Europe: a cross-country analysis identifying key risk factors. *Journal of Epidemiology and Community Healt*h 57 (10): 784-789. http://dx.doi.org/10.1136/jech.57.10.784

KALKSTEIN, S., L., & GREENE, J.S. (1997). An evaluation of climate/mortality relationships in large U.S. Cities and possible impacts of a climate change. *Environmental health perspectives* 105 (1): 84-93. https://dx.doi.org/10.1289%2Fehp.9710584

KENDROVSKI, T. V. (2006). The impact of ambient temperature on mortality among the urban population in Skopje, Macedonia during the period 1996-2000. *BMC Public Health* 6: 44. https://doi.org/10.1186/1471-2458-6-44

KINNEY, L. P., SCHWARTZ, J., PASCAL, M., PETKOVA, E., LE TERTRE, A., MEDINA, S., & VAUTARD, R. (2015). Winter season mortality: will climate warming bring benefits? *Environmental Research Letters* 10. https://doi.org/10.1088/1748-9326/10/6/064016

KNOWLTON, K., LYNN, B., GOLDBERG, R.A., ROSENZWEIG, C., HOGREFE, C., ROSENTHAL, J. K., PATRICK, L., & KINNEY, P. L. (2007). Projecting Heat-Related Mortality Impacts Under a Changing Climate in the New York City Region. *American Journal of Public Health* 97 (11): 2028-2034. https://doi.org/10.2105%2FAJPH.2006.102947

LE TERTRE, A., LEFRANC, A., EILSTEIN, D., DECLERCQ, C., MEDINA, S., BLANCHARD, M., CHARDON, B., PASCAL FABRE, P., FILLEUL, L., JUSOT, J. F., PASCAL, L., PROUVOST, H., CASSADOU, S., & LEDRANS, M. (2006). Impact of 2003 heat wave on all-cause mortality in 9 French cities. *Epidemiology* 17: 75–79. https://doi.org/10.1097/01.ede.0000187650.36636.1f

LERCH, A. (1998). Changes in the seasonality of mortality in Germany from 1946 to 1995: the role of temperature. *International Journal of Biometeorology* 42: 84-88. https://doi.org/10.1007/s004840050089

LUTERBACHER, J., DIETRICH, D., XOPLAKI, E., GROSJEAN, M., & WANNER, H. (2004). European Seasonal and Annual Temperature Variability, Trends and Extremes Since 1500. *Science* 303(5663): 1499-1503. https://doi.org/10.1126/science.1093877

MARTI-SOLER, H., GONSETH, S., GUBELMANN, C., STRINGHINI, S., BOVET, P., CHEN, P. C., WOJTYNIAK, B., PACCAUD, F., TSAI, D. H., ZDROJEWSKI, T., & MARQUES-VIDAL, P. (2014). Seasonal Variation of Overall and Cardiovascular Mortality: A Study in 19 Countries from Different Geographic Locations. *PLoS ONE* 9(11): e113500. https://doi.org/10.1371/journal.pone.0113500

MEEHL, A.G., & TEBALDI, C. (2004). More Intense, More Frequent and Longer Lasting Heat Waves in the 21st Century. *Science* 305(5686): 994-997. https://doi.org/10.1126/science.1098704

NAUGHTON, P. M., HENDERSON, A., MIRABELLI, C. M., KAISER, R., WILHELM, L. J., KIESZAK, M. S., RUBIN, H.C., & McGEHIN, A. M. (2002). Heat-Related Mortality During a 1999 Heat Wave in Chicago. *American Journal of Preventive Medicine* 22(4): 221-227. https://doi.org/10.1016/S0749-3797(02)00421-X

OSTRO, D. B., ROTH, A. L., GREEN, S. R., & BASU, R. (2009). Estimating the mortality effect of the July 2006 California heat wave. *Environmental Research* 109(5): 614-619. https://doi.org/10.1016/j.envres.2009.03.010

PATTENDEN, S., NIKIFOROV, B., & ARMSTRONG, B. G. (2003). Mortality and temperature in Sofia and London. *Journal of Epidemiology and Community health* 57(8): 628-633. http://dx.doi.org/10.1136/jech.57.8.628

RAU, R. (2007). *Seasonality in human mortality. A Demographic approach*. Berlin, Heidelberg: Springer-Verlag. https://doi.org/10.1007/978-3-540-44902-7

SCHAR, C., VIDALE, P. L., LUTHI, D., FREI, C., HABERLI, C., LINIGER, A. M., & APPENZELLER, C. (2004). The role of increasing temperature variability in European summer heatwaves. *Nature* 427: 332-336. https://doi.org/10.1038/nature02300

STANIŠIĆ STOJIĆ. S., STANIŠIĆ, N., & STOJIĆ, A. (2016). Temperature-related mortality estimates after accounting for the cumulative effects of air pollution in an urban area. *Environmental Health* 15: 73. https://doi.org/10.1186/s12940-016-0164-6

STANIŠIĆ STOJIĆ. S., STANIŠIĆ, N., STOJIĆ, A., & DŽAMIĆ, V. (2016a). Seasonal mortality variations of cardiovascular, respiratory and malignant diseases in the City of Belgrade [In Serbian]. *Stanovništvo* 54(1): 83-104. https://doi.org/10.2298/STNV151019001S

STANKOVIĆ, A., NIKIĆ, D., NIKOLIĆ, M., & BOGDANOVIĆ, D. (2007). Short-term effects of air pollution on cardiovascular mortality in elderly in Niš, Serbia. *Central European Journal of Public Health* 15(3): 95-98. https://doi.org/10.21101/cejph.a3425

STANOJEVIĆ, B. G., SPALEVIĆ, B. A., KOKOTOVIĆ, M. V., & STOJILKOVIĆ, N. J. (2014). Does Belgrade (Serbia) need heat health warning system? *Disaster Prevention and Management* 23(5): 494-507. https://doi.org/10.1108/DPM-11-2013-0200

STANOJEVIĆ, G., STOJILKOVIĆ, J., SPALEVIĆ, A., & KOKOTOVIĆ, V. (2014a). The impact of heat waves on daily mortality in Belgrade (Serbia) during summer. *Environmental Hazards* 13(4): 329-342. https://doi.org/10.1080/17477891.2014.932268

SORS (2012). *2011 Census of Population, Households and Dwellings in the Republic of Serbia. Age and sex*. Book 2. Belgrade: Statistical Office of the Republic of Serbia. link

SORS (2013). *2011 Census of Population, Households and Dwellings in the Republic of Serbia. Dwellings by the type of energy raw material used for heating*. Book 30. Belgrade: Statistical Office of the Republic of Serbia. link

Daniela Arsenović *

Sezonalnost mortaliteta: Rezultati za Novi Sad

R e z i m e

Sezonalnost mortaliteta stanovništva prepoznata je i nalazi se u sferi interesovanja naučnika dugi niz godina i predmet je proučavanja u brojnim studijama demografa, klimatologa, lekara, sociologa i drugih istraživača. Dosadašnja istraživanja ukazuju na to da je u većini regiona smrtnost stanovništva veća tokom zimskog perioda godine, kao i na činjenicu da države i regioni sa umerenom klimom imaju veću smrtnost stanovništva u zimskom periodu u poređenju sa državama u hladnijim klimatima. Pored toga, brojne studije pokazale su da je mortalitet stanovništva izložen uticaju promene temperature vazduha, kako tokom hladnijeg, tako i tokom toplijeg perioda godine.

Osnovni cilj ovog rada je da istraži sezonske varijacije mortaliteta stanovništva Novog Sada pod uticajem temperature vazduha. Analiza je obuhvatila period od 1953. do 2013. godine, tokom kojeg je posmatran ukupan mortalitet, mortalitet starog stanovništva (65 i više godina), kao i mortalitet prema polu, dok su uzroci smrti posmatrani samo za period od 1998. do 2013. godine. U radu su posebno analizirani samo kardiovaskularni uzroci smrti I00-I99 (CVD), a na osnovu Međunarodne klasifikacije bolesti i srodnih zdravstvenih problema (MKB, verzija 10).

Kao indikator sezonalnosti mortaliteta stanovništva korišćen je koeficijent sezonalne varijacije mortaliteta (CSVM), a sa ciljem da se utvrde promene sezonalnosti mortaliteta tokom vremena, istraživana serija analizirana je kroz pet perioda. Koeficijent sezonalne varijacije mortaliteta pokazao je da je broj umrlih lica tokom zimskog perioda veći nego u periodu pre odnosno posle zime, dok je analiza uticaja temperature vazduha na mortalitet stanovništva pokazala da sa padom prosečne temperature vazduha mortalitet stanovništva raste. Ipak, i pored potvrđene sezonalnosti i uočenih promena u kretanju mortaliteta u odnosu na temperature vazduha, osetljivost stanovništva na promene temperature se tokom vremena smanjuje.

Ključne reči: *mortalitet, sezonalnost, Srbija, prosečna temperatura vazduha, kardiovaskularni mortalitet*

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SOCIAL STATUS OF THE ROMA IN SERBIA – DEMOGRAPHIC ASPECTS IN PUBLIC MULTICULTURALISM POLICIES

Goran BAŠIĆ, Ksenija MARKOVIĆ **

Multiculturalism policy in Serbia is an example of compromises made by monoculturalists between the issues surpassing the conservative paradigm of tolerance for ethnic and cultural differences and the normative protection of their identities. An unsystematised approach to shaping multiculturalism policy led to disregard or misinterpretation of demographic factors. Through the examples of how the rights to ethnic and cultural identities are obstructed for the Bosniak population in Priboj and Aromanians in Serbia, and the analysis of problems stemming from the centralist organisation of minority self-governments, the paper points to the weaknesses of the current multiculturalism policy and the need for introducing demographic criteria for it to be brought into line with the nature of multiethnicity in the country. The paper points to the issues and difficulties arising from this for the Roma national minority in the realisation of their rights. Despite of being a large national minority, its members are not able to enjoy full cultural autonomy because the realisation of rights is not in line with the demographic characteristics of the Roma. A reform of the multiculturalism policy would remove the existing obstacles and enable effective protection of ethnic, cultural and linguistic identities of minorities.

Key words*: multiculturalism, national minorities, identity, Roma, public policies*

Introduction

Multiculturalism policy in Serbia was not planned or based on appropriate data. The logic of "large numbers", that is, setting up a system which allows more possibilities for the realisation of rights to protect cultural, ethnic and linguistic identity to members of larger and homogenously distributed national minorities – is the result of a political compromise, rather than that of realistic demographic, social, economic and other facts. This approach led to disregard for the theoretical principles of multiculturalism policy and in consequence, decisions on the issues concerning multiculturalism are made strictly by monoculturalists. The purpose of this paper is, therefore, to point to the necessity of using valid data in cre-

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ating multiculturalism policies. Disregard for facts or their superficial analysis lead to unsustainable and unjustifiable solutions and do not contribute to social cohesion and societal security.

According to the 2011 population census, there are 147,604 Roma living in Serbia. They are outnumbered by the Hungarian national minority with 253,899 members, while the number of Bosniaks is approximately the same – 145,278. The number of national minority members is important because, as stated above, according to the legal system of the Republic of Serbia, the larger the national minority, the "more" rights they have. Namely, despite the fact that the constitutional and legal system upholds liberal democracy values with civil equality at their core, collective rights of national minorities depend upon certain factors that undermine this crucial liberal principle.

Exercising national minorities' collective rights and the amount of funds allocated from public sources for this purpose depend on the number of members of a national minority, but also on the distribution of their population, the social organization of a minority community and the system of minority self-government.[1] Larger national minorities have greater prospects for organising full cultural autonomy[2] and creating conditions for the preservation and promotion of their ethnic, cultural and linguistic identities. The needs of national minorities and the degree of their sociality achieved in reality is in contrast to the principle of "large" numbers. Members of the Roma people in Serbia should enjoy the same rights as those available to members of the Bosniak and Hungarian national minorities. However, this is not the case because unlike Bosniaks and Hungarians, who enjoy full cultural autonomy, this is not available to the Roma, since, in addition to the numerousness, it requires territorial distribution of a minority and solidarity among members of the group. National minorities living in ethnically homogenous territories enjoy a higher degree of protection of their collective rights. In everyday life, this creates an absurd situation because national minorities with a small number of members and more socially vulnerable have limited access to public resources of protection.

The situation of the Roma is more complicated because this is a national minority without a country of origin to provide help for their cultural sur-

[1] The term minority self-government refers to the National Council for National Minorities, elected by members of national minorities in order to "exercise their rights in self-government and culture, education, information and official use of their language and script" (Article 2 of the Law on National Councils for National Minorities, Official Gazette nos. 72/2009, 20/2014 – Decision of the Constitutional Court and 55/2014).

[2] The term cultural autonomy refers to the form of decision-making by members of national minorities regarding their rights to culture, information, education and official use of language and script (Article 75, para 2 of the Constitution of the Republic of Serbia, 2006).

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vival, as is customary with most of the other national minorities. In addition, the Roma live in structural poverty, they are exposed to social and institutional discrimination, and ethnic distancing from them has been constantly high. Finally, internal solidarity within the community is poor and, as a result, the Roma lack the degree of cohesion needed for collective vertical mobility.

The link between identity recognition and exercise of collective rights by national minorities, on the one hand, and their number and other demographic characteristics, on the other, does not contribute to achieving fairness, which is at the theoretical core of the liberal approach to minority identities. The principle of ethnocultural neutrality featured in classical liberalism has been reformed and amended by the principle of ethnocultural justice, which is more compatible with the nature of the contemporary liberal state. Recognition of the identity of minority groups (Taylor, 1994) and guaranteeing the protection of their cultural rights was instituted under the pressure of ethnic movements with the aim of ensuring the equal status of all citizens, regardless of race, nationality or ethnicity, as well as enabling approximately equal conditions for ethnic groups in the process of building and preserving national identity, regardless of the majority or minority status, number, distribution or origin (Kymlicka, 1995). In practice, the tensions between the universal protection of the rights of ethnic and national minorities and their numerousness, often corresponding to the political power of the group, are most often resolved at the expense of general principles. In consequence, minorities that are small in numbers, territorially dispersed and socially unorganised lack institutional support for cultural survival.

Law and Demography

Before we point to the problems faced by the Roma population in the protection of their national identity, it would be useful to discuss other cases of obstruction of collective rights resulting from the concept that the numerousness criterion is more important for institutional recognition of rights than universality of rights and needs of a community. The examples of Bosniaks in Priboj municipality, whose identity protection rights have been permanently infringed, and that of Aromanians, who were denied the right to a minority self-government, bring up the interconnection of minorities' demographic characteristics with the right to protect their ethnic and cultural identities.

The Case of Bosniaks in Priboj

According to the 2002 population census, there were 5,567 or 18.32% Bosniaks in Priboj. According to Article 11, para 2 of the Law on the Of-

ficial Use of Languages and Scripts,[3] a local self-governing unit is required to introduce into official and equal use, in its statute, "the language and script of a national minority if the percentage of members of this minority within the total number of inhabitants in its territory according to the most recent population census is 15%". Had the municipal administration in Priboj amended its Statute in due time and acted in accordance with Article 18, para 33 of the Law on Local Self-Government,[4] which stipulates that a local self-government unit "determines the languages and scripts of national minorities that are in official use in the territory of the municipality" and also the preceding paragraph of this Article, which assigns responsibility to the local self-government for the "implementation, protection and promotion of human rights and individual and collective rights of members of national minorities and ethnic groups", the Bosniaks in Priboj would have had the same rights as their compatriots in the neighbouring municipalities of Prijepolje, Sjenica, Tutin and in the town of Novi Pazar.

National minority rights stemming from the fact that their language is in official use in a local self-government unit entail "the use of national minority languages in administrative and judicial proceedings and in conducting administrative and judicial proceedings; the use of a national minority language in communication between organs with public authorisations and citizens; issuing identity documents and keeping official records and archives of personal data in national minority languages and recognising these documents as official; the use of national minority languages in voting ballots and electoral materials; the use of national minority languages in the work of representative bodies" as well as displaying "the names of organs performing public authorisations, names of local self-government units, populated places, squares and streets and other toponyms in the language of a national minority, in accordance with its tradition and orthography".[5]

In addition, the official use of a national minority language in a local self-government unit entails larger funds for the minority self-government, in this case, the National Council for Bosniak National Minorities from the Budget of the Republic of Serbia and the Budget of the Local Self-Government Unit. The Law on National Councils of National Minorities (Articles 114 and 115) stipulates that funds for the operation of a minority self-government of a national minority whose language is in official use

[3] Law on the Official Use of Languages and Scripts, *Official Gazette of the Republic of Serbia*, nos. 45/91, 53/93, 48/94, 101/2005 – other law, and 30/2010.

[4] Law on Local Self-Government, *Official Gazette of the Republic of Serbia*, nos. 129/2007 and 83/2014 (other law).

[5] Article 11, paras 3 and 4 of the Law on the Official Use of Languages and Scripts.

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or which makes up 10% of the total population in the local self-government, are provided from the budget of the local self-government pursuant to a decision by a competent organ. The Decree on the Procedure for Allocating Funds from the Budget of the Republic of Serbia for Financing National Councils of National Minorities[6] prescribes a point-based system, which, inter alia, assigns 50 points to minority self-governments where a national minority language is in official use.

The 2011 Population Census established that the number of Bosniaks in Priboj had dropped to 3,811 or 14% off the total population in the municipality. At the same time, the number of Muslims rose to 1,994, compared to 1,427 in the 2002 census. Had the Bosnian language been introduced in official use on time, Bosniaks would have been able to exercise the right to protect their ethnic identity based on the rights thus recognised.[7] This avoidance by municipal authorities to implement the law and grant the Constitutional right to the national minority, as well as the hesitation by state organs to initiate an appropriate procedure in keeping with the Law on Local Self-Government, which regulates the legality and proper work of municipal organs, caused damage that will be difficult to repair, not only to the Bosniaks in Priboj, but to the Bosniak community in Serbia as well (Bašić, 2018).

Critics of the division of the Serbo-Croatian language will not agree with the purpose of the official use of the Bosnian language or with its name. Without going into a debate on linguistic and political approaches to close languages, I would like to point out that the constitutional and legal system defines a uniform manner of protecting national minority rights but is applied inconsistently, and to the fact that the protection of ethno-cultural identities depends on dynamic demographic changes.

The Case of Aromanians

The 2011 population census in Serbia registered 243 Aromanians,[8] descendants of the people who left a considerable mark in the establishment of the middle class, development of the economy, architecture and culture in Serbia. Two thirds of Aromanians live in Belgrade, mostly in central municipalities – Vračar, Stari Grad and Zemun – and one third lives in Niš and Pančevo. The average age of the Aromanian population is 57.7, mak-

[6] *Official Gazette of the Republic of Serbia*, nos. 95/2010 and 33/2013.

[7] Article 8 of the Law on the Protection of Rights and Freedoms of National Minorities, *Official Gazette of Serbia and Montenegro*, no. 1/2003; Constitutional Charter and the *Official Gazette of the Republic of Serbia*, no. 72/2009 (other law) and 97/2013 (Decision of the Constitutional Court).

[8] This was taken from the study *Ethno-Confessional and Linguistic Mosaic of Serbia* in Serbian (Đurić *et al*., 2014) according to which the preceding population census registered 293 Aromanians. The 1948 and 1991 censuses had no data on Aromanians.

ing them the oldest population in the country, along with the Slovene national minority. 40% of Aromanians are older than 65 and only 2% are younger than 15, meaning that the population has a very high ageing index – 10.50. Aromanians are among the most educated ethnic groups in the country and with 35% of the population holding university and college degrees, they immediately follow the Jewish, Armenian and Russian minorities (Đurić *et al*., 2014). It is an interesting fact that these minorities are rather small, making up less than 1% of the total population of the country. This sparse data suggests a predominately urban culture of the Aromanian population and also that in the decades to follow, Aromanians will disappear in Serbia. This process could be slowed down if their identity were revitalised, that is, if their assimilated descendants' national identity were awakened.

Being aware of this process, in 2012, the Aromanians launched an initiative with the Ministry of Justice and Public Administration to establish a separate electoral list for electing a minority self-government. The Ministry rejected the request based on the explanation that Aromanians could not be considered a national minority because only 243 individuals had been registered in the population census, that is, that they did not meet the requirements contained in the definition of national minority under Article 2 of the Law on the Protection of the Rights and Freedoms of National Minorities.[9] This definition, however, does not specify the minimum number of members required for the national minority status to be recognised. As one of the five criteria for recognition of national minority status, the definition mentions "sufficient numerical representation" without specifying what exactly this means (the other criteria are: factual minority in the state; long-lasting and close links with the state territory; characteristics such as language, culture, nationality or ethnicity and ancestry distinguishing them from the majority population; members' commitment to preserving their cultural, linguistic and ethnic identity). A comparative analysis of the practice in countries of the region with regard to the protection of ethnic and cultural identities of national minorities found examples that as much as several members of a minority community can establish a minority self-government in municipalities, towns or local communes.[10]

[9] Ministry of Justice and Public Administration of the Republic of Serbia, no. 013-00-01-/2013-3817, of 25 July 2013.

[10] In the Republic of Croatia, under Article 24 of the Constitutional Law on National Minority Rights (*Official Gazette* 155/2, 47/10, 93/11), a local minority self-government is elected in local self-government units with a minimum of 200 national minority members, while in local self-governments with fewer than 100 national minority members, a representative of that national minority is elected. The candidates for members of minority self-governments or national minority representatives are nominated by a minimum of 20 members of the national minority from its territory. In the Republic of Hungary, in popu-

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Believing that the decision to reject their request was unlawful and, above all, unjust, in 2014, the Aromanians filed another request to be added as a separate electoral list for the local self-governance election, which was supported by 329 citizens of Aromanian descent. Again, the Ministry of Public Administration and Local Self-Government rejected the request, further supporting the explanation with a provision under Article 44 of the Law on National Councils of National Minorities, stating that a request to form a separate electoral list for the election of a minority self-government must be supported by a minimum of 5% but not fewer than 300 adult members of the national minority.[11] In response, the Aromanian community filed an appeal with the Administrative Court, which rescinded the decision of the Ministry, emphasising that there was no criterion upon which anyone can evaluate the representativity of a national minority and that the number of members cannot be the sole criterion for exercising collective rights.[12] Finally, the Administrative Court took into account the Opinion of the Republic of Serbia Ombudsman regarding the "Aromanian case", which emphasised that a small community had greater needs in protecting its identity and securing its survival.[13]

Since the Ministry failed to act in accordance with the Court's decision, the final ruling on the Aromanians' attempt to form a minority self-government was issued by the Supreme Court of Cassation, which rejected the request of the Aromanian community on the grounds that the Administrative Court, when ruling on the matter, introduced purpose-serving as a criterion for the implementation of national minority rights, which is not mentioned in substantive law.[14]

The fact mentioned in the ruling by the Supreme Court of Cassation that purpose-serving is not a legally-defined criterion for the exercise of national minority rights is not in dispute, but in the case of Aromanians, this should have meant that this was a specific legal case of exceptional significance for the implementation of their rights to protect their ethnic and cultural identity and therefore all the available legal means should have been used before the ruling was issued. The confusion was aggravated by the Opinion of the Ombudsman, who established that the actions taken by the Ministry in reaching both decisions were legal but missed the opportunity to point to the irregularities in interpreting criteria for recognising

lated places with a minimum of 1,300 inhabitants, three members of a national minority may directly elect a local minority self-government (Article 23 of the Law on National and Ethnic Minority Rights – Law LXXVII 1993).

[11] Ministry of Public Administration and Local Self-Government of the Republic of Serbia, no. 90-00-90/2014-17, 29 September 2014.

[12] Judgement of the Administrative Court no. 7 Uip. 1/14 of 17 December 2014.

[13] Ombudsman Opinion no. 16-4370/13.

[14] Supreme Court of Cassation, Uzp 499/2015 of 27 August 2015.

the national minority status. All this resulted in failure to resolve the essence of the problem, that is, that the minimum number of members required for recognition of a national minority is not prescribed in their best interest and in accordance with the spirit and needs of the protection of national minority identities. This is also substantiated by Article 75, para 2 of the Constitution of the Republic of Serbia, which grants collective rights to individual members of national minorities to "directly, or through their representatives, participate in decision-making or decide by themselves on certain issues relating to their culture, education, informing and official use of their language and script, in accordance with the law". Hence, in the Aromanian case, the state not only failed to enable direct realisation of the right to the protection of national minority identity, but its administrative decisions and court rulings prevented members of the Aromanian national minority from realising their rights (Bašić, 2018). The purpose of the law is to create conditions enabling the implementation justice, rather than to impose numerical or any other obstacles to justice.

The Case of the Centralised Organisation of Minority Self-Governments

The confusion about the realisation of national minority rights in Serbia stems from the poorly devised multiculturalism policy, where demographic factors were ether misused or not taken into account when they should have been. The current organisation of minority self-governments as national, supreme forms of organising national minorities in order to realise their cultural autonomy has led to the situation where national minority members who do not live in homogenous settlements near the centres of minority cultures do not exercise the right to the protection, preservation and promotion of their ethno-cultural identities. Centralised national councils do not have the capacity to perform their duties as defined by law. The number of members of national councils[15] and their organisational and personnel infrastructure are insufficient to enable these minority autonomy bodies to tackle the realisation of their compatriots' rights with equal attention. The most evident example is that of the Roma minority self-government, with 35 elected members, dealing with the realisation of the right to education, culture, information and official use of the language and script for 147,604 members of the Roma national minority in 174 local self-government units. The 35 members of the Hungarian minority self-government are in charge of these rights in 160 local self-governments in Serbia. The Macedonian minority self-government has 23 members, who see to the functioning of cultural autonomy in 174 local

[15] The number of members in a minority self-government is determined on the basis of the total population of the national minority. Specifically, national minorities with the population larger than 100,000 elect 35 members for the minority self-government and those with the population below 10,000 elect 15.

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self-government units. The Bosniak national council, with 35 members, all residing in Novi Pazar, Tutin, Sjenica, Prijepolje and Priboj – traditionally and largely populated by the Bosniak population – are supposed to take care of the collective and lawful rights of their compatriots in another 133 local self-governments in Serbia. The outcome of the 2014 minority self-government election at Polling Station no. 1 in the Belgrade city municipality of Zvezdara, where all minority electoral lists received votes supports the fact that national minority members reside outside of the places and areas traditionally and largely populated by their minority (Bašić, Pajvančić, 2015).

The number of national minority members established in the most recent population census also bears importance for the realisation of other national minority rights. The Law on Local Self-Government defines mixed (multi-ethnic) self-government units as "self-government units where members of one national minority make up 5% of the total population or where all national minorities combined make up 10% of the total population according to the last population census in the Republic of Serbia" (Article 98, para 2). According to the method stipulated in the aforementioned Decree on the Procedure for Allocating Funds for Financing National Councils of National Minorities, the first 30% of the funds are allocated, in equal amounts, to all minority self-governments listed in the Register with the competent ministry and the remaining 70% are distributed proportionally, in accordance with the agreed point-based system – 35% depending on the size of the national minority and 35% depending on the total number of cultural autonomy institutions.

Implementation of Roma Rights in Relation to the Number of Community Members

According to indicators and research, the Roma are a specific community with characteristics of an ethno class, that is, a majority of them live in structural, generational poverty, which cannot be overcome without the support from society and the state. Cultural dynamism in the community and efficient participation in public life – enabled by cultural autonomy and recognition of collective rights – should increase Roma's prospects in combating poverty and discrimination. In this spirit, Article 4 of the Law on the Protection of Rights and Freedoms of National Minorities emphasises that the Roma need affirmative policy measures more than other minorities do. This concept of the legislator has not been implemented because it has been derogated by a multitude of unlinked, sometimes contradictory regulations.

Disregard for demographic factors is one of the reasons that prevented the expected improvement of the situation of the Roma based on legal protection. The use of language in public space is an example. Liberal theory of multiculturalism insists that the official use of a language is a strong incentive for the prosperity of ethnic and national minorities. Taking into consideration the wide-spread standardised compulsory education, high demands for literacy at work and extensive communication of all citizens with state services, any language that is not in public use becomes marginalised to the extent that it will most probably be preserved within a small elite, either in a ritualised form or in isolated rural areas, rather than remain a living and dynamic language, as the foundation of a prosperous culture. Decisions made by the state on the language to be used in public education and administration are actually decisions on what linguistic groups will survive (Kymlicka, 1999). According to the law in Serbia, a national minority language will be in official use in a local self-government unit where the minority makes up 15% of the population and, in addition, recognition of a language enables the realisation of other collective rights.[16] The Roma do not make up the required percentage of the population in any local self-government to enable the official use of their language. Many will argue that the Roma do not have a standardised language, that they speak in various dialects, and that this is the reason why additional affirmative measures have not been prescribed. Not only are they wrong, they forget the fact that by ratifying the European Charter for Regional and Minority Languages,[17] Serbia has assumed the responsibility of introducing the Roma language in official use.

With regard to the number of Roma, in addition to what we said at the beginning of the paper – that close to 150,000 Roma live in Serbia – it should be mentioned that this number fluctuated up to 1971[18] and has since been constantly on the rise: 49,894 (1971), 110,959 (1981), 94,492 (1991), 108,193 (2002) and 147,604 (2011). In four decades the number of Roma in Serbia has tripled, and estimations indicate that the number is even greater. The research Roma Settlements, Living Conditions and Possibilities for Roma Integration in Serbia found that 250,000 Roma lived in 593 Roma settlements with more than a hundred inhabitants or with more

[16] Despite the fact that the size of the community enables its funding pursuant to Article 115 of the Law on the National Councils of National Minorities, the Roma minority self-government is unable to fully enjoy this right because the Roma language is not in official use in any of the local self-government units, which is one of the bases for financing.

[17] Law on Ratification of the European Charter for Regional or Minority Languages, *Official Gazette of Serbia and Montenegro – International Treaties*, no. 18/2005.

[18] At the turn of the 20th century, 50,492 Roma lived in Serbia. Half a century later, in 1948, the number was 52,181, in 1953, 58,800 and in 1961, only 9.826 (Radovanović, Knežević, 2014).

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than 15 families. The research was conducted in 2002 throughout 25 districts in Serbia, and the aim was not to conduct an alternative census of the Roma population, but rather to ascertain, as reliably as possible, the number of Roma whose living conditions required special measures to be taken so as to induce a change in the situation. This is why the number of the Roma population established was not final. The research did not include the Roma living in smaller settlements or those dispersed in urban centres (Jakšić, Bašić, 2005). Their number can only be guessed, as is done by representatives of Roma organisations and NGOs, whose estimates range between 450,000 and 800,000 Roma living in Serbia. Both the Strategies for the Promotion of the Situation of the Roma (2009 – 2015) and a greater part of the Strategy for the Social Inclusion of the Roma (2016 – 2025) were based on the data from the aforementioned research. Here, we should emphasise the problem of collecting and accuracy of data on the number of the Roma. Namely, due to their extremely unfavourable social situation, prejudice and discrimination against them, many Roma resort to hiding their ethnic identity, most often, by assuming the identity of neighbouring ethnic communities. Most of them are educated Roma, whose ethnic background posed a barrier to social mobility. They are a valuable human resource in the process of social inclusion and gaining cultural autonomy. In addition, they achieved their social inclusion into the Serbian society by excluding themselves from the primary ethnic group.

According to a World Bank study of the cost of social exclusion of the Roma population in four countries in Central and South-East Europe, including Serbia,[19] there is a shortage of human resources in all of the four national labour markets. In Serbia, one in eight working-age members of the Roma community has completed secondary education and has better prospects on the labour market. If measures focusing on the improvement of the Roma situation are implemented by states for longer than 15 years and yield no results, and so far, they have not, the situation will be even grimmer.

One should bear in mind that the population in all these regions is in decline and ageing at an increasing rate. Under such demographic circumstances, the burden of economic development rests upon the working-age population – which is also in decline and has to tackle higher fiscal burdens with increasing expenditures, such as for pensions and health. These issues can only be overcome or at least mitigated by an increase in the working-age population. The Roma population has a significant share in the working-age population in Serbia, but this potential has not been used.

[19] *Economic Cost of Roma Exclusion*, World Bank, Europe and Central Asia, Human Resources Department, 2010.

In Serbia, the lower margin of the economic cost of Roma exclusion from the labour market amounts to 231 million euros annually, while fiscal losses are about 60 million euros. This data indicates that increasing the participation and productiveness of the Roma in the labour market is an economic necessity that should be borne in mind, based on precise social statistics, when creating public policies of education and employment. Another fact should not be disregarded here: a higher number of educated and employed Roma strengthens the cultural potential of the community, and this is the most valuable resource in the protection of national identity.

In the process of regulating the participation of national minorities in the political sphere, the distribution of the Roma population was not taken into account. The Law on the Election of People's Deputies stipulates that national minority parties and their coalitions participate in the distribution of parliamentary mandates even if they have received fewer than 5% of the total number of votes.[20] This means that national minority political parties can count on mandates if they have passed the "natural threshold" introduced in the electoral system following the 2003 Parliamentary elections, when none of the national minority parties won a mandate. Since then, national minority political parties were granted the privilege to participate in the distribution of mandates if they win the number of votes required for one deputy's mandate. Accordingly, if 60% of the electorate voted, national minority parties can win a deputy's mandate if they have won 16,000 votes (0.4%). The natural threshold is advantageous for national minorities with homogenous distribution, whose political parties have convergent political aims and actions. The Alliance of Vojvodina Hungarians is the sole minority party that has been winning an increasing number of parliamentary mandates since 2007. Of other sizeable national minorities, Albanians and Bosniaks have won mandates only occasionally. Although the Roma are a large national minority, this political privilege has no significance because they are territorially dispersed and politically heterogenous. Only in the 2007 elections did two Roma minority political parties win one mandate each when the "natural threshold" privilege was applied (Republic Electoral Commission, 2007). The natural threshold is not an affirmative action measure enabling political representation of national minorities regardless of the election results. On the contrary, this is an actual barrier for national minorities to overcome and therefore its application without additional affirmative measures is not favourable for small and territorially dispersed national minorities. The spatial distribu-

[20] Article 82, para 2 of the Law on People's Deputies (*Official Gazette of the Republic of Serbia*, nos. 35/2000, 57/2003 – decision by the Constitutional Court of the RS 72/2003 – other law, 75/2003 – other law, corrected, 18/2004, 101/2005 – other law, 85/2005 – other law, 28/2011 – decision by the Constitutional Court US, 36/2011 and 104/2009 – other law).

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tion of the Roma in Serbia, mainly characterized by territorial dispersion and poor spatial-demographic strength has a negative role in their progress and social-economic transformation because it impedes the possibility of faster affirmation and inclusion in decision-making processes, particularly at local level (Radovanović, Knežević, 2014).

Measures for the social and economic integration of the Roma are likewise conditioned by demographic aspects. According to the Strategy of Social Inclusion, most strategic measures should be implemented in local self-governments. Given that the number of Roma varies from municipality to municipality, the strategic planning of inclusion measures is conducted in relation to the absolute and relative shares of the total population in a local self-government unit. The strategy is focused on the individual member and his/her close and wider environment, that is, family and the social community respectively. This is why it is up to the local self-governments to ascertain the actual number and needs of the Roma and accordingly adopt local action plans for their social inclusion.

How to Use Demographic Data in Multiculturalism Policies in Serbia

The key problem in the realisation of national minorities' collective rights in Serbia is the fact that minority self-governments are centralised. Decentralisation of minority self-governments is necessary in order to enable direct participation of national minority members in their activities and expand institutional foundations for preserving minority identities. A decentralised model of implementing the right to self-governance and "cultural autonomy" of national minorities entails an integrative approach to multiethnicity, bolsters cooperation between local minorities and local authorities and strengthens intercultural links.

For this to be achieved, the current model of electing minority self-governments needs to be replaced at state level, by a mixed electoral system, combining, first, direct election of local minority self-governments (municipal and in local communes), through direct voting and based on accurate electoral rolls, and second, indirect election of a national minority self-government at an electoral assembly, composed of all directly elected members of local (municipal and in local communes) minority self-governments. The adoption of a decentralised system of minority self-governments would institute a multiculturalism policy that is in line with minorities' demographic situations as well as with their needs and interests in local communities and at state level.

According to the model of decentralised organisation of minority self-governments envisaged in line with the results of the 2002 Population

Census, municipal minority self-governments, whose task is to foster the implementation and protection of national minority rights in local community, would be elected in local self-governments whose population includes a minimum of 300 members of one national minority and in the event that a minority self-government is elected in a local commune, the number of members would have to be significantly lower (Bašić, 2006). In the corresponding practice in the countries of the region, local and minority self-governments are elected if interest is expressed by anywhere between 3 and 20 national minority members.

Accordingly, local self-governments with the population from 300 to 1,000 members of one national minority, would elect five members to the local minority self-government. In local self-governments with 1,000 to 5,000 members of one national minority, the number of elected members of the local minority self-government would be 10. In local self-governments with 5,000 to 10,000 members of one national minority, the elected number of the local minority self-government members would be 15 and, finally, local self-governments with the minority population of more than 10,000 members would elect 20 members to the local minority self-government. The number of members in a local minority self-government would be established by its statute, in accordance with the number prescribed.

In a decentralised system of minority self-governments, the Roma national minority would form minority self-governments in 82 local self-governments. The total number of Roma elected into local minority self-governments would be 600. These six hundred members of the Roma local minority self-governments would also be members of the assembly for the election of the Roma national minority self-government, which could have between 35 and 45 members. Analogously, members of the Hungarian national minority would elect 470 local minority self-governments in 41 local self-governments. The Slovaks would elect 170 members of local minority self-governments in 16 local self-governments. The Croats would elect 235 members of local minority self-governments in 30 local self-government units. The Bosniaks and Rusyns would each form their minority self-governments within six local self-governments, Montenegrins in 32, Vlachs in 15, Romanians in 14, Bunjevci, Slovenians and Germans in two each and the Czechs in one.

In accordance with this model, minority self-governments in local communes would also elect minorities whose members have no interest in forming local or national minority self-governments due to small numbers. The aforementioned Aromanians would be able to establish local commune minority self-governments in three central Belgrade municipalities (Stari Grad, Vračar and Zemun) and in Novi Sad and Niš.

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National-level minority self-governments, as stated above, would be elected by all national minorities that had elected local minority self-governments and the division of responsibilities between a national minority self-government and local self-governments (in municipalities and towns) and local commune self-governments would be regulated by law.

With the introduction of a decentralised model of minority self-governments, members of national minorities would be enabled to directly influence, participate in and create public policies that allow direct access to cultural autonomy rights. A decentralised model of minority self-governments also enables direct institutional cooperation between minority self-governments and local self-government organs. In a state with the rule of law, this would mean that local self-governments are required to establish and develop mechanisms for the protection of human and minority rights, for funding minority self-governments' activities at local level and, most importantly, for the promotion of inter-ethnic relations and social integration.

The adoption of this model would be beneficial for national minority members, who would be able to decide on the protection of their ethnic and cultural identities directly, in their places of residence. This would also be favourable for central minority self-governments, which would be relieved of activities concerning local issues and would therefore be able to focus on the issues concerning full cultural autonomy, development of legal protection and other issues of interest to the minority community. Local self-government decentralization would contribute to a more consistent implementation of the Constitution, which calls for a direct realisation of national minority collective rights, as well as to harmonising the provisions in regulations where the realisation of rights is conditional upon a minimum number of national minority members. Finally, the nature of Serbian multiethnicity, characterised by large differences in the number, dispersion and social organisation of minorities, requires a multiculturalism policy that is directly focused on the minority member and his/her environment.

So, who opposes this type of multiculturalism policy? Primarily, it is the political parties of larger and territorially homogenous national minorities, with strong negotiating positions in the existing system, followed by political parties in power, which find it easier to negotiate “the rules of the game” with a few minority leaders, rather than organise a logical legal and administrative system with the will of the citizens as its decisive factor. Likewise, a decentralised multiculturalism policy is a hindrance to monoculturalists, who are not interested in what is going on outside of their ethno-cultural communities. Monoculturalists support segregating multiculturalism and, be they members of a majority or minority, they favour

political and social homogeneity and closed ethnic communities – under such conditions and with a dose of populism, these communities are easily controlled and steered.

Conclusion

Despite the fact that demographic data points to the specific social situation of national minorities, this is disregarded by the political and legal systems in Serbia. The consequences of neglecting the undeniable facts regarding national minority population, whose distinct cultural rights are recognised and regulated, is a confusion becoming increasingly difficult to grasp. On the one hand, the protection and realisation of minority rights are prescribed by law and yet, on the other, due to the fact that regulations are not in line with the multi-ethnic situation, including the characteristics of the population, members of small and dispersed minorities do not have access to recognised rights.

Research has not been conducted on the number of national minority members who actually benefit from the existing multiculturalism policy, the number of those who are interested in it and the number of those who do not have access to it. However, the need for change in multiculturalism policy in Serbia is most distinctly explained by demographic facts which show striking differences relating to the size of national minorities, their territorial distribution and trends within minority communities. This state statistical data, collected through population censuses, and the data concerning the needs of national minorities in the preservation and protection of their ethnic and cultural identities, provide an obvious solution. The centralised multiculturalism policy should be "transferred down" to national minority members in local self-governments.

A decentralised policy of cultural identity protection is more suitable for members of the Roma national minority, whose social inclusion is based on the individual in local community. Moreover, public policies should seek coherence between the principles underpinning social inclusion of the Roma and policies for the protection of their identity. Unless this is achieved, both public policies are not likely to reach the desired aims.

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References

BAŠIĆ, G. (2006). *Iskušenja demokratije u multietničkim društvima*. Beograd: Centar za istraživanje etniciteta.

BAŠIĆ, G. (2018). *Multikulturalizam i etnicitet*. Beograd: Institut društvenih nauka.

BAŠIĆ, G., & PAJVANČIĆ, M. (2015). *Od segregativne ka integrativnoj politici multikulturalnosti*. Beograd: Centar za istraživanje etniciteta.

ĐURIĆ, V., TANASKOVIĆ, D., VUKMIROVIĆ, D., & LAĐEVIĆ, P. (2014). Etnokonfesionalni i jezički mozaik Srbije. Beograd: Republički zavod za statistiku. link

JAKŠIĆ, B., & BAŠIĆ, G. (2005). *Umetnost preživljavanja – gde i kako žive Romi u Srbiji*. Beograd: Institut za filozofiju i društvenu teoriju.

KNEŽEVIĆ, A. (2013). Demographic characteristics of Roma population in Belgrade as an indicator of their social integration. *Revista Română de Geografie Politică* 15(1): 43-55.

KYMLICKA, W. (1995). *Multicultural Citizenship. A Liberal Theory of Minority Rights*. New York: Oxford University Press. https://doi.org/10.1093/0198290918.001.0001

KYMLICKA, W. (1999). Etnički odnosi i zapadna politička teorija. *Habitus* 0: 17-63. https://www.ceeol.com/search/article-detail?id=100145

MARKOVIĆ, K., & JOVANOVIĆ, A. (2015). Novi pristupi manjinskom pitanju: decentralizacija i nacionalne manjine – slučaj Srbija. *Nacionalni interes* 23(2): 123-150. link

RADOVANOVIĆ. S., & KNEŽEVIĆ. A. (2014). *Romi u Srbiji*. Beograd: Republički zavod za statistiku. link

REPUBLIC ELECTORAL COMMISSION (2007). Report on the Results of the Election for National Assemblies of the National Assembly of the Republic of Serbia Held on 21 January 2007 (electronic resource). Belgrade: Republic Electoral Commission. link

TAYLOR, C. (1994). *Multiculturalism: Examining the Politics of Recognition*. New Jersey: Princeton University Press.

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Društveni položaj Roma u Srbiji – demografski aspekti u javnim politikama multikulturalizma

R e z i m e

Prema Popisu iz 2011. godine, Srbija je multietnička država u kojoj blizu 18% stanovništva pripada nacionalnim manjinama. U pravnom sistemu Republike Srbije prihvaćena je logika „velikog broja" po kojoj brojnije nacionalne manjine ostvaruju „više" prava. Od broja pripadnika nacionalne manjine, ali i od rasprostranjenosti njihovog stanovništva, društvene organizovanosti manjinske zajednice i ustrojstva manjinske samouprave zavisi koja kolektivna prava će pripadnici nacionalnih manjina ostvarivati i količina novca koja će im za to biti raspoređena iz javnih izvora. Brojnije nacionalne manjine imaju više šanse da obezbede uslove za očuvanje i unapređenje etničkog identiteta.

U odnosu na broj pripadnika, Romi u Srbiji bi trebalo da ostvaruju ista prava koja su dostupna pripadnicima bošnjačke i mađarske nacionalne manjine. Međutim, to nije tako jer, za razliku od Bošnjaka i Mađara koji ostvaruju punu kulturnu autonomiju, Romima je ona nedostupna budući da su za njeno ostvarivanje, pored brojnosti, važne i teritorijalna rasprostranjenost manjine i solidarnost članova grupe. O rasprostranjenosti romskog stanovništva nije vođeno računa kada je uređivano učešće nacionalnih manjina u političkom životu zemlje, a i mere socijalno ekonomske integracije Roma su uslovljene demografskim aspektima. U *Strategiji socijalnog uključivanja* je predviđeno da se većina strateških mera ostvaruje u lokalnoj samoupravi, a da broj Roma varira od opštine do opštine, te se zbog toga strateško planiranje inkluzivnih mera procenjuje u odnosu na apsolutni i relativni udeo u ukupnom stanovništvu jedinice lokalne samouprave.

Osnovni problem u vezi sa ostvarivanjem kolektivnih prava nacionalnih manjina u Srbiji je centralizovani položaj manjinskih samouprava. Njihova decentralizacija je neophodna da bi se omogućilo neposredno učešće pripadnika nacionalnih manjina u institucionalnoj zaštiti manjinskih identiteta. Decentralizovani model ostvarivanja prava na samoupravu i „kulturnu autonomiju" nacionalnih manjina upućuje na integrativni pristup multietničnosti, pospešuje saradnju lokalnih manjina sa lokalnim vlastima i doprinosi boljim interkulturalnim vezama.

Propisivanjem decentralizovanog modela manjinskih samouprava omogućilo bi pripadnicima nacionalnih manjina da u lokalnim zajednicama neposredno kreiraju i učestvuju u javnim politikama kojima im se omogućava direktan pristup pravima iz kulturne autonomije. Prirodi srbijanske multietničnosti, koju karakterišu razlike u broju, disperziranosti i društvenom organizovanju manjina, prijemčivija je politika multikulturalnosti neposredno usmerena ka pripadniku manjine i njegovom okruženju.

Kome onda ovakva politika multikulturalnosti ne odgovara? Pre svega političkim strankama brojnih i homogeno nastanjenih nacionalnih manjina koje u postojećem sistemu imaju dobru pregovaračku poziciju, a potom političkim strankama

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na vlasti kojima je lakše da se oko „pravila igre“ dogovaraju sa nekolicinom manjinskih lidera umesto da ih uspostave u logičan pravni i upravni sistem u kojem je volja građana odlučujući faktor. Decentralizovana politika multikulturalnosti ne odgovara ni monokulturalistima, koje ne zanima šta se dešava izvan njihovih etnokulturnih zajednica. Monokulturalisti su zagovornici segregativnog multikulturalizma i njima, bilo da su pripadnici većine ili manjine, odgovara politička i društvena homogenost i zatvorenost etničkih zajednica, koje je u tim uslovima, uz malo populizma, lako kontrolisati i usmeravati ih.

Ključne reči: *multikulturalizam, nacionalne manjine, identitet, Romi, javne politike*

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EMISIJA CO_2 U EVROPSKOJ UNIJI: EMPIRIJSKA ANALIZA DEMOGRAFSKIH, EKONOMSKIH I TEHNOLOŠKIH FAKTORA

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Razmere i posledice fenomena globalnih klimatskih promena, koji je prevashodno produkovan antropogenim faktorima poput nekontrolisane potrošnje fosilnih goriva i posledične emisije gasova staklene bašte, nameću promenu obrasca ponašanja kao jedan od najvećih izazova sa kojim se civilizacija suočava. Ova studija je posvećena istraživanju najvažnijih demografskih, ekonomskih i tehnoloških determinanti emisije CO_2 u 28 zemalja članica Evropske unije u vremenskom periodu 1991-2014. godine. Analiza je sprovedena na osnovu logaritmovanog i postepeno proširivanog STIRPAT modela ocenjivanjem standardnih modela sa komponentama slučajne greške na neizbalansiranom panel uzorku. Dobijeni rezultati pokazuju da je, kratkoročno posmatrano, uticaj populacije, per capita BDP-a i energetske intenzivnosti na emisiju CO_2 pozitivan i signifikantan. Parcijalno povećanje stopa rasta populacije, per capita BDP-a i energetske intenzivnosti od 1% dovodi do uvećanja stope rasta emisije CO_2 u opsegu između 0,74%-1,02%, 1,10%-1,15% i 1,07%-1,09%, respektivno. Osim toga, analiza nije uspela da potvrdi hipotezu da se elastičnost stope rasta emisije CO_2 u odnosu na stopu rasta populacije menja u zavisnosti od veličine stope rasta populacije. Uticaj ostalih demografskih varijabli koje reprezentuju starosnu strukturu stanovništva, kao što su procentualni udeo dece i adolescenata do 14 godina starosti i učešće stanovništva radnog uzrasta u ukupnom stanovništvu, nije ocenjen kao statistički signifikantan. Konačno, rezultati analize sugerišu nesignifikantan uticaj prosečne veličine domaćinstva, što je jedini nalaz čija je validnost upitna, s obzirom da je dobijen na prilično malom uzorku.

Ključne reči: *emisija CO_2, populacija, per capita BDP, energetska intenzivnost, elastičnost*

Uvod i pregled literature

Emisija gasova koji izazivaju efekat staklene bašte i fenomen globalnih klimatskih promena dugo su već u vrhu agende prioriteta kreatora javnih politika na najvišem nivou. Globalne klimatske promene koje inkorporiraju: zagrevanje površine zemlje, okeana i atmosfere, topljenje snega i leda,

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povećanje nivoa mora, rast kiselosti okeana i sve učestaliju pojavu različitih prirodnih fenomena ekstremnog intenziteta (vetrovi, padavine, izuzetno niske i visoke temperature itd.), nameću kao prioritet urgentnu i efikasnu akciju u smeru ograničavanja i postepenog smanjivanja emisije štetnih gasova. Upotreba fosilnih goriva poput naftnih derivata, uglja i prirodnog gasa jeste ključni generator gasova koji izazivaju efekat staklene bašte u koje prevashodno spadaju ugljen-dioksid, metan, sumpor-dioksid i azotni oksid. Ova studija je posvećena rasvetljavanju najznačajnijih, pre svega demografskih, odrednica emisije ugljen-dioksida (CO_2) u 28 zemalja članica Evropske unije.

Demografska kretanja nesumnjivo jesu među najvažnijim faktorima koji utiču na emisiju CO_2 i ostalih štetnih gasova, što je potvrđeno u brojnim istraživanjima (Poumanyvong, Kaneko, 2010; Cole, Neumayer, 2004; Rosa *et al*., 2004; Shi, 2003; York *et al*., 2003a; 2003b; Cramer, 2002; Cramer, Cheney, 2000; Cramer, 1998; Dietz, Rosa, 1997; Holdren, 1991). Empirijsko testiranje direktnog uticaja demografskih trendova na emisiju štetnih gasova rezultovalo je različitim nalazima. Mnoge analize upućuju na zaključak da je elastičnost emisije CO_2. u odnosu na broj stanovnika gotovo jedinična (Cole, Neumayer, 2004; Rosa *et al*., 2004; York *et al*., 2003a; 2003b; Dietz, Rosa, 1997). Kol i Nojmajer istovremeno skreću pažnju na činjenicu da uticaj populacije na emisiju SO_2 ima oblik *U* krive (Cole, Neumayer, 2004). Za razliku od navedenih studija u kojima je ocenjena gotovo jedinična elastičnost emisije CO_2 u odnosu na broj stanovnika, izvesne analize pokazuju da bi ona čak mogla biti i izraženija (Poumanyvong, Kaneko, 2010; Shi, 2003). Dehart i Soul su, na primer, ocenili elastičnost koja je veća od jedan za ukupnu i komercijalno-industrijsku emisiju štetnih gasova, i skoro jediničnu elastičnost u slučaju rezidencijalnog sektora (DeHart, Soulé, 2000). Kramer i Kramer i Čejni su, istražujući slučaj Kalifornije, identifikovali snažan uticaj broja stanovnika na emisiju štetnih gasova iz pojedinih izvora (Cramer, 1998; 2002; Cramer, Cheney, 2000). Takođe, Holdren ističe da se više od polovine povećanja svetske potrošnje energenata i emisije štetnih gasova nakon 1850. može pripisati rastu broja stanovnika (Holdren, 1991). Osim navedenih studija koje potenciraju važnost i značaj populacije za potrošnju energije i emisiju gasova staklene bašte, neophodno je istaći i to da u pojedinim radovima nije detektovan statistički signifikantan efekat demografskih varijabli na emisiju CO_2 (Shandra *et al*., 2004).

Kol i Nojmajer su, takođe, testirali hipotezu da se elastičnost emisije CO_2 u odnosu na populaciju menja u zavisnosti od veličine populacije, tako što su u osnovni model uključili kvadrat populacije (PO^2). Ipak, dobijeni rezultati nisu potvrdili ovu pretpostavku (Cole, Neumayer, 2004).

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Pored veličine populacije mnoge druge demografske varijable takođe imaju veoma zapaženo mesto među determinantama emisije CO_2. U njih se svakako svrstava starosna struktura stanovništva, koja odražava značaj postojećih razlika između pojedinih starosnih grupa u pogledu potrošačkih obrazaca, radne angažovanosti i odnosa prema životnoj sredini (Tonn *et al*., 2001). Može se očekivati da veći udeo stanovništva radnog uzrasta (15-64 godine) doprinosi povećanju emisije CO_2, budući da su pripadnici ove starosne grupe mnogo više upućeni na korišćenje različitih prevoznih sredstava nego penzioneri (65+) i deca i adolescenti (0-14 godina), pre svega zbog radne angažovanosti i drugačijeg životnog stila. U izvesnim studijama, manje ili više robusno, potvrđen je pozitivan efekat stanovništva radnog uzrasta na emisiju CO_2 (Cole, Neumayer, 2004; Shi, 2003), dok u nekim drugim taj uticaj nije signifikantan (York *et al*., 2003a). Takođe, Jork nije uspeo da oceni signifikantan efekat stanovništva radnog uzrasta na CO_2 i CH_4 pojedinačno, ali jeste na njihov zajednički potencijal globalnog zagrevanja (York *et al*., 2003b).

Sledeća demografska varijabla koja se uobičajeno svrstava u vektor determinanti energetske potrošnje i emisije štetnih gasova jeste urbanizacija. Saobraćaj u urbanim zonama veoma je razvijen budući da su one najčešće dobro povezane sa ostalim regionima. Shodno tome upotreba motornih vozila daleko je izraženija u urbanim sredinama, naročito kada je reč o zemljama u razvoju. Urbana područja koncentrišu različite institucije i infrastrukturu koji podrazumevaju veću potrošnju energije i posledično veću emisiju štetnih gasova. Za stanovnike urbanih oblasti karakteristična je upotreba energetski intenzivnih proizvoda (poput klima uređaja) koji nisu toliko svojstveni žiteljima ruralnih područja. Veći stepen urbanizacije podrazumeva da se veća količina poljoprivrednih proizvoda transportuje do gradova. Osim toga, postoje i indirektni efekti urbanizacije koji se ogledaju u činjenici da urbanizacija podstiče razvoj industrije kao izrazito energetski intenzivne privredne grane, što rezultuje većom potrošnjom energije i emisijom štetnih gasova. Takođe, značaj koji imaju gradovi u pogledu potrošnje resursa dosta je slikovito opisao Pacione (Pacione, 2009). Navedene relacije sugerišu da se može očekivati pozitivan uticaj urbanizacije na potrošnju energije i emisiju CO_2. Ovaj efekat je i potvrđen u izvesnim empirijskim studijama (Poumanyvong, Kaneko, 2010; York, 2007; Cole, Neumayer, 2004; York *et al*., 2003a; 2003b; Parikh, Shukla, 1995).

Poslednja demografska varijabla koja je tretirana u ovoj analizi kao potencijalna determinanta emisije CO_2 jeste prosečna veličina domaćin-stva. Veća domaćinstva mogu ostvariti koristi u pogledu transporta, korišćenja prostora i potrošnje energije. Kol i Nojmajer su ocenili negativan signifikantan uticaj prosečne veličine domaćinstva na emisiju CO_2 (Cole, Neu-

mayer, 2004), dok je Kramer ispitivao posmatrani efekat u slučaju pet glavnih tipova zagađenja (Cramer, 1998), ali bez jasnih zaključaka.

Osim navedenih demografskih varijabli, neupitan uticaj na emisiju CO_2 ima i ekonomski rast koji se modelski kvantifikuje realnim *per capita* BDP-om. Uticaj ekonomske aktivnosti na potrošnju energije i emisiju štetnih gasova može se ostvariti posredstvom takozvanog efekta obima (*scale effect*), koji se ogleda u jednostavnoj činjenici da veći obim proizvodnje zahteva i veću potrošnju energije, pa time i veću emisiju gasova staklene bašte (Hübler, Keller, 2009: 61). Osim toga, uticaj ekonomskog rasta može se realizovati i posredstvom dohotka induciranog tehničkog efekta (*income-induced technique effect*), koji pretpostavlja da je čista životna sredina normalno dobro sa pozitivnom dohodovnom elastičnošću tražnje, te da povećanje realnog *per capita* BDP-a dovodi do povećanja tražnje za čistom životnom sredinom, vršeći time pritisak na kompanije da se prilagode ekološki strožijoj regulativi, implementirajući energetski štedljivu tehnologiju, čime se emisija štetnih gasova smanjuje (Hübler, Keller, 2009: 63). Neto efekat zavisi od toga koji je od posmatrana dva mehanizma intenzivniji.[1]

Tehnologija je takođe izuzetno značajna varijabla koja opredeljuje potrošnju energije i emisiju CO_2. U ovoj studiji su, po uzoru na Kolov i Nojmajerov metodički okvir (Cole, Neumayer, 2004), korišćene dve varijable kojima se aproksimira uticaj tehnologije. Prva varijabla jeste energetska intenzivnost (potrošnja energije po jedinici BDP-a) koja reprezentuje recipročnu vrednost energetske produktivnosti i kao takva trebalo bi direktno da odslikava stepen tehnološke razvijenosti. Veća energetska intenzivnost znači veću potrošnju energije po jedinici ekonomskog autputa, što bi, pri nepromenjenom autputu, trebalo da se efektuira rastom emisije CO_2. Druga promenljiva jeste udeo bruto dodate vrednosti prerađivačke industrije u BDP-u koja opisuje ekonomsku strukturu privrede sa veoma verovatnim efektom na potrošnju energije i emisiju štetnih gasova. Povećanje doprinosa prerađivačke industrije (kao naglašeno energetski intenzivne delatnosti) generisanju ukupnog ekonomskog autputa trebalo bi da rezultuje rastom potrošnje energije i emisije štetnih gasova. Iako je u literaturi poznato da je udeo prerađivačke industrije u BDP-u determinanta energetske intenzivnosti, tokom izrade ove studije prihvaćena je Kolova i Nojmajerova argumentacija da se uključivanjem obe varijable u regresionu jednačinu sveobuhvatnije modeluje uticaj tehnologije (Cole, Neumayer, 2004:

[1] Uticaj ekonomske aktivnosti na potrošnju energenata i emisiju štetnih gasova u literaturi se veoma često objašnjava konceptom Kuznjecove krive okruženja (*environmental Kuznets curve* – EKC), čije testiranje nije u fokusu ove studije. O funkcionalnosti EKC algoritma u slučaju 28 zemalja članica EU videti Petrović *et al*., 2017.

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10).[2] U empirijskim studijama uglavnom je ocenjen pozitivan efekat energetske intenzivnosti na emisiju CO_2 (Poumanyvong, Kaneko, 2010; Cole, Neumayer, 2004). Istovremeno, rezultati ocenjivanja uticaja industrije na emisiju gasova staklene bašte i potrošnju energije dosta su raznovrsniji i variraju od pozitivnog uticaja (Hübler, Keller, 2009; York *et al*., 2003a; 2003b; DeHart, Soulé, 2000), preko ne sasvim uverljivog pozitivnog efekta (Poumanyvong, Kaneko, 2010; Shi, 2003), do nesignifikantnog uticaja (Cole, Neumayer, 2004).

Ova studija je sačinjena od pet delova. U prvom delu je skrenuta pažnja na značaj emisije gasova staklene bašte i dat je prikaz njenih najvažnijih demografskih, ekonomskih i tehnoloških determinanti uz pregled literature koja je posvećena ovom fenomenu. U drugom delu rada su prikazani metodički okvir i informacije koje se tiču korišćenih podataka. Treći i četvrti deo obuhvataju empirijske rezultate i njihovu diskusiju, dok su u petom delu izneti najvažniji zaključci i zapažanja.

Metodički okvir i podaci

Empirijsko istraživanje zasnovano je na veoma poznatom i rasprostranjenom *STIRPAT* (*STochastic Impacts by Regression on Population, Affluence, and Technology*) modelu, razvijenom od strane Tomasa Dica i Judžina Rose (Rosa, Dietz, 1998; Dietz, Rosa, 1997; 1994). Model ima sledeći osnovni opšti oblik:

$$I_{it} = aP_{it}^{b} A_{it}^{c} T_{it}^{d} e_{it}, \qquad (1)$$

gde *I*, *P*, *A* i *T* respektivno predstavljaju uticaj na životnu sredinu (*I*), broj stanovnika (*P*), realni *per capita* BDP (*A*) i vektor varijabli koje reprezentuju tehnologiju (*T*) (Dietz, Rosa, 1997: 175). Istovremeno, *a*, *b*, *c*, *d* i *e* jesu parametri modela i tzv. ostatak koji se ekonometrijski ocenjuju, pri čemu navedeni parametri (*b*, *c* i *d*) respektivno reprezentuju koeficijente elastičnosti uticaja na životnu sredinu (*I*) u odnosu na broj stanovnika (*P*), realni *per capita* BDP (*A*) i tehnološke varijable (varijable uključene u vektor *T*). Varijabla ostatka (*e*) obuhvata efekat svih preostalih slučajnih faktora koji nisu direktno uključeni u model. Logaritmovanjem modela (1) dolazi se do njegovog transformisanog oblika:

$$\ln(I_{it}) = \ln(a) + b\ln(P_{it}) + c\ln(A_{it}) + d\ln(T_{it}) + \ln(e_{it}), \qquad (2)$$

[2] O efektima udela industrijske bruto dodate vrednosti u BDP-u na energetsku intenzivnost videti Petrović, Filipović, Radovanović, 2018; Adom, 2015a; Adom, 2015b; Adom, Kwakwa, 2014; Li, Lin, 2014; Poumanyvong, Kaneko, 2010; Hübler, Keller, 2009; Jones, 1991; Samouilidis, Mitropoulos, 1984.

koji nam pruža mogućnost da koeficijente elastičnosti ocenimo primenom linearnih tehnika na logaritamske transformacije originalnih podataka. Fundamentalni model od koga se pošlo u ovoj studiji jeste jednačina koju su kao osnovu koristili Kol i Nojmajer (Cole, Neumayer, 2004), čiji je opšti oblik:

$$\ln(CO_{2it}) = \beta_0 + \beta_1 \ln(PBDP_{it}) + \beta_2 \ln(EI_{it}) + \beta_3 \ln(MAN_{it}) + \beta_4 \ln(PO_{it}) + \varepsilon_{it}, \qquad (3)$$

gde CO_2, *PBDP*, *EI*, *MAN* i *PO* respektivno predstavljaju emisiju ugljen dioksida (izraženu u kilotonama), realni *per capita* bruto domaći proizvod izražen u američkim dolarima primenom pariteta kupovnih snaga, energetsku intenzivnost formulisanu kao ukupnu potrošnju energije (izraženu u kilogramima naftnog ekvivalenta) na 1000 dolara realnog bruto domaćeg proizvoda (izraženog u američkim dolarima primenom pariteta kupovnih snaga), bruto dodatu vrednost prerađivačke industrije (iskazanu kao procenat bruto domaćeg proizvoda) i ukupan broj stanovnika. Shodno metodičkom okviru koji su primenili Kol i Nojmajer (Cole, Neumayer, 2004), polazni osnovni model (3) postepeno je proširivan dodavanjem novih regresora, kako bi se ispitali različiti aspekti relacije koja egzistira između populacije i emisije ugljen dioksida. Vektor dodatnih varijabli sadrži: kvadrat populacije (s namerom da se ispita postojanje nelinearne relacije između logaritma populacije i logaritma CO_2 emisije), udeo dece i adolescenata do 14 godina starosti u ukupnom stanovništvu ($PO_{0\text{-}14}$), udeo stanovništva radnog uzrasta u ukupnom stanovništvu ($PO_{15\text{-}64}$), urbano stanovništvo kao procenat ukupnog stanovništva (*UR*) i prosečnu veličinu domaćinstva definisanu kao prosečan broj članova po domaćinstvu (*AHS*).

Istraživanje je, kako je naznačeno u uvodnom delu, sprovedeno za 28 zemalja članica Evropske unije za vremenski period od 1991. do 2014. godine i zasnovano je na neizbalansiranom panel uzorku. Prosečna veličina domaćinstva preuzeta je iz baze podataka Evrostata (http://ec.europa.eu/eurostat/data/database), dok su svi preostali podaci pribavljeni iz baze podataka Svetske banke – *World Development Indicators* (http://data.worldbank.org/).

Empirijski rezultati

Testiranje zavisnosti između individualnih jedinica posmatranja za pojedine varijable (tabela 1) jeste početna faza analize koja opredeljuje dalju upotrebu testova jediničnog korena. Testiranje je izvršeno primenom sledećih testova: (i) Brojš-Paganovog LM testa (*BPLM*) (Breusch-Pagan,1980), (ii) Pesaranovog skaliranog LM testa (*PLM*) (Pesaran, 2004), (iii) skaliranog LM testa sa korigovanom pristrasnošću (*SLM*) (Baltagi *et al*., 2012) i (iv) Pesaranovog CD testa (*PCD*) (Pesaran, 2004).

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Tabela 1.
Rezultati testiranja zavisnosti između individualnih jedinica

Test	CO_2	PBDP	EI	MAN	PO	PO_{0-14}	PO_{15-64}	UR
BPLM	5132.2*	7851.1*	6752.7*	3675.09*	11862.7*	17037.0*	7089.9*	16890.1*
PLM	172.9*	271.8*	231.8*	119.91*	417.7*	605.9*	244.1*	600.5*
SLM	172.7*	271.3*	231.3*	119.64*	417.5*	605.6*	243.9*	600.3*
PCD	36.6*	87.8*	80.9*	44.55*	78.6*	129.8*	67.2*	128.2*

Izvor: Proračun autora
Napomena: Sve varijable su logaritmovane. Statistička signifikantnost na nivou značajnosti od 1% obeležena je sa *.

Sledeći korak predstavlja testiranje nestacionarnosti (tabela 2), odnosno reda integrisanosti, svih varijabli i to upotrebom Im, Pesaran, Šinovog testa prve generacije (*IPS*) (Im *et al*., 2003) i Pesaranovog CIPS (*CIPS**) testa druge generacije (Pesaran, 2007). Red vremenske docnje za *IPS* test jediničnog korena određen je na osnovu Akejkove funkcije informacionog kriterijuma, dok je za *CIPS** test isprobavan širok opseg vremenskih docnji, što nije suštinski uticalo na dobijene rezultate.[3] U tabeli 2 u slučaju *CIPS** testa prikazan je red vremenske docnje koji je najbliži prosečnom redu odabranom na osnovu funkcija informacionog kriterijuma. Primena *IPS* testa sprovedena je na podacima koji su korigovani za proseke po individualnim jedinicama posmatranja, čime se ublažava uticaj zavisnosti između jedinica (Levin *et al*., 2002).

Tabela 2.
Rezultati testiranja nestacionarnosti

Test	CO_2	PBDP	EI	MAN	PO	PO_{0-14}	PO_{15-64}	UR	AHS
IPS	-2,18**	-6,16*(t)	-4,38*(t)	-6,88*(t)	4,60(t)	-12,61*(t)	-10,91*(t)	-0,92(t)	-6,28*(t)
CIPS*	2,81(4)	-1,04(t;3)	2,56(t;2)	0,84(t;3)	0,21(t;5)	0,45(t;5)	-0,24(t;4)	1,04(t;10)	1,12(t;1)
	ΔCO_2	ΔPBDP	ΔEI	ΔMAN	ΔPO	ΔPO_{0-14}	ΔPO_{15-64}	ΔUR	ΔAHS
IPS	-23,07*	-11,87*	-18,08*	-17,12*	-5,70*	-7,27*	-6,23*	-1,24(t)	-16,34*
CIPS*	-2,46*(4)	-2,53*(3)	-4,21*(2)	-4,07*(3)	-2,45* (4)	-4,69*(4)	-3,15*(3)	-0,67(t;5)	-1,32***(1)

Izvor: Proračun autora.
Napomena: Sve varijable su najpre logaritmovane. Oznake u zagradama pored vrednosti test statistika ukazuju na red vremenske docnje i determinističku komponentu u test regresionim jednačinama (t za konstantu i trend i prazno polje samo za konstantu). Signifikantnost na nivoima značajnosti od 1%, 5% i 10% obeležena je sa *, ** i ***, respektivno.

[3] Svi rezultati koji nisu prikazani u radu dostupni su na zahtev od autora. Istraživanje je sprovedeno upotrebom Stata 12 i EViews 9 programskih paketa.

Budući da testovi jediničnog korena, kao i korelogrami serija i njihov vizuelni izgled, prilično uverljivo pokazuju da su posmatrani procesi nestacionarni, prirodan tok analize nalaže da se testira kointegracija između nestacionarnih varijabli (Petrović *et al*., 2017). Ipak, u ovom slučaju testiranje kointegracije nije adekvatan pristup iz najmanje dva razloga. Prvi se odnosi na činjenicu da postoje tehnička ograničenja koja onemogućavaju testiranje kointegracije sa velikim brojem regresora, što bi neizostavno značilo da se pojedine varijable (regresori) moraju eliminisati iz analize, odnosno da se mora pribeći defetističkom metodu svesnog osiromašenja modela. Čak ukoliko bi ovakav metodički okvir bio okarakterisan kao prihvatljiv, dužina vremenske dimenzije panel uzorka ne bi bila dovoljna da obezbedi pouzdano testiranje kointegracije sa relativno velikim brojem objašnjavajućih promenljivih. Zbog toga su ocenjeni kratkoročni modeli na nivou prvih diferenci, što je pristup koji su u svojim istraživanjima primenili Kol i Nojmajer (Cole, Neumayer, 2004) i Hubler i Keler (Hübler, Keller, 2009).

U tabeli 3 su prikazani rezultati ocenjivanja četiri različite specifikacije jednofaktorskih i dvofaktorskih modela sa fiksnim efektima (*Least Squares Dummy Variables-LSDV*), koje su dobijene postepenim proši-rivanjem osnovne jednačine (3). Testiranje zadovoljenosti pretpostavki klasičnog linearnog regresionog modela vršeno je primenom širokog dijapazona dijagnostičkih testova. Testiranje normalnosti raspodele slučajne greške sprovedeno je primenom četiri testa (D'Agostino *et al*., 1990 sa i bez korekcije prikazane u Royston, 1991; Shapiro, Wilk, 1965 zasnovanog na Royston, 1982; 1992; 1993b; Shapiro, Francia, 1972 zasnovanog na Royston, 1983; 1993a i Jarque, Bera, 1980; 1987). Testiranje heteroskedastičnosti izvršeno je takođe upotrebom četiri testa (Koenker, 1981; Wooldridge, 2013; Szroeter, 1978; Greene 2003: 324), dok je testiranje autokorelacije realizovano primenom jednog statističkog testa (Cumby, Huizinga, 1992). Testiranje zavisnosti između individualnih jedinica posmatranja za slučajne greške modela vršeno je testovima koje smo već naveli u kontekstu objašnjenja tabele (1). Prisustvo multikolinearnosti u svim modelima testirano je primenom faktora rasta varijanse. Rezultati dijagnostičkih testova naložili su da se svi modeli ocene sa Njui-Vest (Newey, West, 1987) i Driskol-Kraj (Driscoll, Kraay, 1998) standardnim greškama koje su konzistentne u prisustvu heteroskedastičnosti i autokorelacije, odnosno u prisustvu heteroskedastičnosti, autokorelacije i prostorne korelacije, respektivno. U zavisnosti od rezultata testiranja korelacije između individualnih jedinica posmatranja za slučajne greške modela (što determiniše koja će robusna standardna greška biti ocenjena – Njui-Vest ili Driskol-Kraj) primena robusnih *F* testova ukazuje na značajnost fiksnih individualnih i vremenskih efekata (u slučaju Driskol-Kraj standardnih

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grešaka), odnosno samo vremenskih efekata (u slučaju Njui-Vest standardnih grešaka).

Tabela 3.
Rezultati ocenjivanja LSDV jednačina

Varijable	LSDV 1		LSDV 2		LSDV 3		LSDV 4	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
PBDP	1,10	1,13	1,10	1,11	1,10	1,10	1,14	1,15
	(0,074)*	(0,068)*	(0,076)*	(0,074)*	(0,075)*	(0,074)*	(0,138)*	(0,128)*
	[0,070]*	[0,061]*	[0,074]*	[0,066]*	[0,064]*	[0,066]*	[0,146]*	[0,100]*
EI	1,09	1,08	1,09	1,09	1,09	1,09	1,07	1,07
	(0,097)*	(0,095)*	(0,096)*	(0,092)*	(0,101)*	(0,093)*	(0,220)*	(0,203)*
	[0,061]*	[0,059]*	[0,060]*	[0,058]*	[0,046]*	[0,058]*	[0,149]*	[0,130]*
MAN	0,02	0,01	0,02	0,02	0,02	0,02	0,06	0,05
	(0,031)	(0,030)	(0,032)	(0,031)	(0,031)	(0,031)	(0,060)	(0,055)
	[0,037]	[0,032]	[0,037]	[0,034]	[0,030]	[0,033]	[0,067]	[0,060]
PO	0,74	1,02	0,78	0,96	0,77	0,95	0,18	0,60
	(0,404)***	(0,197)*	(0,396)**	(0,231)*	(0,414)***	(0,238)*	(0,548)	(0,382)
	[0,420]***	[0,232]*	[0,409]***	[0,278]*	[0,426]***	[0,286]*	[0,512]	[0,285]***
PO^2			13,83	19,10	13,27	18,04	32,31	35,82
			(15,847)	(14,157)	(14,994)	(14,047)	(27,455)	(23,084)
			[19,418]	[17,022]	[17,517]	[16,546]	[30,386]	[26,942]
PO_{0-14}					0,04	0,0004	-0,17	-0,27
					(0,173)	(0,160)	(0,437)	(0,262)
					[0,157]	[0,173]	[0,247]	[0,151]
PO_{15-64}					0,50	0,34	2,27	0,67
					(0,623)	(0,570)	(1,465)	(0,881)
					[0,712]	[0,665]	[1,356]	[0,700]
AHS							-0,01	-0,01
							(0,094)	(0,088)
							[0,093]	[0,091]
SK test	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
W test	0,02	0,00	0,03	0,01	0,03	0,01	0,04	0,02
AC test	(2)0,09	(1)0,01	(2)0,08	(1)0,01	(2)0,08	(1)0,01	(2)0,01	(2)0,02
BPLM	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
PLM	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Broj ops.	587	587	587	587	587	587	247	247
Kor. R^2	0,75	0,76	0,75	0,76	0,75	0,76	0,72	0,74
Pr. VIF	2,66	3,21	2,68	3,15	2,80	3,22	2,70	2,19

Izvor: Proračun autora.
Napomena: Sve varijable su najpre logaritmovane, a zatim diferencirane i uključene u model. U malim i srednjim zagradama prikazane su respektivno Njui-Vest i Driskol-Kraj standardne greške. Oznake (1) i (2) respektivno ukazuju na dvofaktorske i jednofaktorske modele sa komponentama slučajne greške. U donjem delu tabele prikazane su *p* vrednosti za sledeće dijagnostičke testove: SK-test normalnosti raspodele slučajne greške (D'Agostino *et al*., 1990), W-test heteroskedastičnosti (Wooldridge, 2013), AC-test autokorelacije za red vremenske docnje dat u zagradi (Cumby, Huizinga, 1992), BPLM-test zavisnosti između individualnih jedinica posmatranja (Breusch-Pagan, 1980), PLM-test zavisnosti između individualnih jedinica posmatranja (Pesaran, 2004). Ispod dijagnostičkih testova prikazani su: ukupan broj opservacija, korigovani koeficijent determinacije i prosečna vrednost faktora rasta varijanse. Signifikantnost na nivoima značajnosti od 1%, 5% i 10% obeležena je sa *, ** i ***, respektivno.

Budući da su Brojš-Paganov (Breusch, Pagan, 1980) i Hondin (Honda, 1985) *LM* test sugerisali nesignifikantnost stohastičkih individualnih i vremenskih efekata, kolizija u rezultatima *F* testa prilikom testiranja signifikantnosti fiksnih efekata zahteva istovremeno ocenjivanje jednofaktorskih i dvofaktorskih *LSDV* modela sa robusnim standardnim greškama čime su uzete u obzir sve eventualnosti.

Osim prikazanih *LSDV* modela, s namerom testiranja robusnosti dobijenih rezultata, identične specifikacije jednačina ocenili smo u formi *Prais-Winsten* (*PW*) regresija sa korigovanim standardnim greškama (*panel corrected standard errors – PCSE*) i primenom metoda uopštenih najmanjih kvadrata (*Feasible generalized least squares - FGLS*), pri čemu su u oba slučaja podaci transformisani upotrebom homogenog i heterogenog *AR(1)* koeficijenta. Ovi rezultati nisu prikazani, jer su manje pouzdani od prezentovanih nalaza iz nekoliko razloga. Prvi se krije u činjenici da se u navedenim tehnikama polazi od pretpostavke da je slučajna greška autokorelisana prvog reda, što se ne podudara sa rezultatima testa autokorelacije, koji uglavnom indicira prisustvo autokorelacije većeg reda. Takođe, statistička svojstva *PCSE* mogu biti dovedena u pitanje kada je prostorna dimenzija panel uzorka dovoljno velika u odnosu na vremensku dimenziju (u slučaju ovog istraživanja N=28, dok T varira od 14 do 24) (Hoechle, 2007: 284). Konačno, *FGLS* tehnika može rezultovati veoma potcenjenim standardnim greškama i ocenama parametara koje na malom uzorku nemaju bolja statistička svojstva od *OLS* ocena (Beck, Katz, 1995).

Diskusija

Testiranje zavisnosti između individualnih jedinica posmatranja (tabela 1) za pojedine varijable uniformno ukazuje na njeno prisustvo na nivou značajnosti od 1%, nezavisno od toga koji se statistički test koristi. Ovakav rezultat nalaže da se prilikom testiranja nestacionarnosti, uporedo sa testom prve generacije koji treba primeniti na podatke korigovane za proseke po individualnim jedinicama posmatranja, koristi i test jediničnog korena koji pripada drugoj generaciji. Rezultati testiranja na nivou varijabli jesu usklađeni jedino u slučaju populacije (*PO*) i urbanizacije (*UR*), gde oba testa nedvosmisleno pokazuju da je reč o nestacionarnim procesima, što potvrđuju i korelogrami i vizuelni izgled serija. U svim preostalim situacijama postoji konflikt između nalaza dobijenih primenom dva testa jediničnog korena. Im, Pesaran, Šinov test prve generacije (*IPS*) pokazuje da su sve varijable stacionarne, dok Pesaranov (*CIPS**) test druge generacije ukazuje na suprotan zaključak. Imajući u vidu izgled varijabli i njihovih korelograma kao i činjenicu da testovi druge generacije dopuštaju zavisnost između individualnih jedinica posmatranja, nema nikakve

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sumnje da su sve serije nestacionarne. Stoga preostaje da se utvrdi tačan broj jediničnih korenova koje poseduju pojedine promenljive.

Rezultati testiranja nestacionarnosti prvih diferenci prilično uverljivo pokazuju da su one stacionarne u svim slučajevima, osim kada je reč o urbanizaciji (*UR*), gde postoji osnovana sumnja da je prva diferenca nestacionarna. Drugim rečima, nalazi testova jediničnog korena navode na zaključak da su sve serije *I(1)* procesi, osim urbanizacije za koju postoji velika mogućnost da je *I(2)* proces, zbog čega je ona isključena iz analize.

Modelovanje sve četiri ocenjene specifikacije započeto je dvofaktorskim modelima sa fiksnim efektima. Rezultati ranije navedenih testova normalnosti, heteroskedastičnosti i autokorelacije su nedvosmisleni. Svi testovi normalnosti veoma robusno i jednoobrazno pokazuju da raspodela verovatnoće slučajne greške u svim modelima statistički značajno odstupa od normalne, dok svi testovi heteroskedastičnosti i autokorelacije ukazuju na narušenost ovih pretpostavki u svim jednačinama. Ipak, nalazi testova zavisnosti između individualnih jedinica posmatranja nisu jednoobrazni. Naime, u svim modelima Pesaranov CD test jedini pokazuje nezavisnost između jedinica posmatranja, zbog čega su ocenjene dve varijante robusnih standardnih grešaka (Njui-Vest i Driskol-Kraj), čime su uzete u obzir obe mogućnosti. Kao što je istaknuto ranije, primena robusnog *F* testa sa Njui-Vestovim standardnim greškama ukazuje da su samo vremenski efekti signifikantni, dok *F* test sa Driskol-Kraj standardnim greškama sugeriše značajnost oba efekta. Obe mogućnosti su obuhvaćene ocenjivanjem kako dvofaktorskih tako i jednofaktorskih modela sa vremenskim efektima. Primena dijagnostičkih testova na jednofaktorskim modelima daje identične rezultate kao u slučaju dvofaktorskih jednačina, što je impliciralo ocenjivanje jednofaktorskih modela sa već pomenutim robusnim standardnim greškama. Takođe, testiranje značajnosti vremen-skih veštačkih promenljivih u jednofaktorskim modelima upotrebom robusnog *F* testa (sa Njui-Vest i Driskol-Kraj standardnim greškama) potvrđuje signifikantnost fiksnih vremenskih efekata. Konačno, mogućnost da su efekti stohastičke prirode odbačena je primenom Brojš-Paganovog i Hondinog *LM* testa kako u dvofaktorskim tako i u jednofaktorskim modelima. Prosečna vrednost faktora rasta varijanse u svim modelima ne ukazuje na prisustvo multikolinearnosti.

Budući da su zbog ranije navedenih razloga svi modeli ocenjeni kao kratkoročni, odnosno na nivou prvih diferenci serija, dobijene ocene reprezentuju koeficijente elastičnosti stope rasta emisije CO_2 u odnosu na stope rasta pojedinih determinanti. Efekat *per capita* BDP-a jeste, u svim modelima, statistički signifikantan na nivou značajnosti od 1%, nezavisno od standardne greške koja je korišćena. Povećanje stope rasta *per capita* BDP-a od 1% dovodi do povećanja stope rasta emisije CO_2 između 1,10%

i 1,15%. Pozitivan efekat *per capita* BDP-a potvrđen je u brojnim studijama (Poumanyvong, Kaneko, 2010; York, 2007; Cole, Neumayer, 2004; Shi, 2003;York *et al*., 2003b).

Uticaj energetske intenzivnosti signifikantan je na nivou značajnosti od 1% u svim modelima i pokazuje da povećanje stope rasta energetske intenzivnosti od 1% rezultuje uvećanjem stope rasta emisije CO_2 između 1,07% i 1,09%. Pozitivan efekat energetske intenzivnosti na emisiju CO_2 ocenjen je i u drugim studijama (Poumanyvong, Kaneko, 2010; Cole, Neumayer, 2004).

Bruto dodata vrednost prerađivačke industrije jeste nesignifikantan regresor u svim modelima. Kao što je ranije konstatovano rezultati ocenjivanja uticaja industrije na emisiju gasova staklene bašte i potrošnju energije veoma su šaroliki. Nalazi ove studije u potpunosti su saglasni sa rezultatima Kola i Nojmajera (Cole, Neumayer, 2004) i delimično podudarni sa rezultatima istraživanja koja sugerišu ne sasvim uverljiv pozitivan efekat (Poumanyvong, Kaneko, 2010; Shi, 2003).

Jedna od ključnih demografskih determinanti emisije CO_2 jeste veličina populacije, koja je, shodno rezultatima ovog istraživanja, statistički signifikantna u gotovo svim modelima. Naime, povećanje stope demografskog rasta od 1% implicira uvećanje stope rasta emisije CO_2 između 0,74% i 1,02%. Potrebno je istaći da je u modelu *LSDV 4* populacija signifikantna samo u slučaju jednofaktorskog modela sa Driskol-Kraj standardnim greškama i to marginalno na nivou značajnosti od 10%. Budući da je model *LSDV 4* dobijen naknadnim uključivanjem prosečne veličine domaćinstva (*AHS*), što je znatno skratilo vremensku dimenziju panel uzorka i uslovilo ocenjivanje modela na svega 247 opservacija, rezultati prethodno ocenjenih modela (*LSDV 1-LSDV 3* sa 587 opservacija) se prihvataju kao znatno pouzdaniji. Zaključak o pozitivnom uticaju populacije na emisiju CO_2 do koga se došlo u ovoj studiji podudaran je sa nalazima velikog broja istraživanja (Poumanyvong, Kaneko, 2010; Cole, Neumayer, 2004; Rosa *et al*., 2004; York *et al*., 2003a; 2003b; Shi, 2003; Cramer, 2002; DeHart, Soulé, 2000; Cramer, Cheney, 2000; Cramer, 1998; Dietz, Rosa, 1997).

Testiranje hipoteze da se elastičnost stope rasta emisije CO_2 u odnosu na stopu rasta populacije menja u zavisnosti od veličine stope rasta populacije, tako što je u osnovni model uključen kvadrat diferencirane populacije (PO^2), potvrdilo je zaključak Kola i Nojmajera (Cole, Neumayer, 2004) da se ova pretpostavka ne može prihvatiti kao tačna.

Prema rezultatima ovog istraživanja regresori koji reprezentuju starosnu strukturu stanovništva ($PO_{0\text{-}14}$ i $PO_{15\text{-}64}$) ne vrše statistički signifikantan uticaj na emisiju CO_2. Vrednosti faktora rasta varijanse za ove dve varijable u modelu *LSDV 3* jesu prilično visoke (4,38 i 5,74 u dvofaktorskom i 3,24 i 4,06 u jednofaktorskom modelu, respektivno), što ukazuje na mo-

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gućnost da je njihova nesignifikantnost posledica multikolinearnosti. Korelaciona matrica za sve regresore pokazuje da su jedino ove dve varijable visoko (inverzno) korelisane (-0,77). Budući da postoji opasnost od prisustva multikolinearnosti, upravo zbog korelisanosti ovih promenljivih, model *LSDV 3* je iznova ocenjen tako što su ove varijable zasebno uključene u jednačinu. Vrednosti faktora rasta varijanse za posmatrane promenljive nakon njihovog razdvajanja prilično su niske, što svedoči o tome da je opasnost od multikolinearnosti otklonjena. Ipak, dobijene ocene i rezultati testiranja signifikantnosti gotovo da se uopšte ne razlikuju u odnosu na prezentirane nalaze, zbog čega ove specifikacije nisu ni prikazane. Kol i Nojmajer (Cole, Neumayer, 2004) su ocenili nesignifikantan efekat varijable $PO_{0\text{-}14}$, dok su uticaj stanovništva radnog uzrasta ($PO_{15\text{-}64}$) ozbiljno doveli u pitanje, budući da je marginalna signifikantnost ove varijable objašnjena visokom korelacijom sa stopom urbanizacije i prosečnom veličinom domaćinstva. Osim toga, odsustvo signifikantnog uticaja stanovništva radnog uzrasta potencirano je i u drugim studijama (York *et al*., 2003a; 2003b).

Ocene parametara za prosečnu veličinu domaćinstva (*AHS*) jesu očekivano negativne, ali nesignifikantne. Ovaj nalaz treba prihvatiti sa velikim oprezom imajući u vidu da je model *LSDV 4* ocenjen na značajno manjem uzorku, što bi mogao biti razlog zašto je ovakav rezultat u potpunoj suprotnosti sa ocenom Kola i Nojmajera (Cole, Neumayer, 2004). Takođe, ni Kramer (Cramer, 1998) nije uspeo da identifikuje uticaj prosečne veličine domaćinstva u slučaju nekih tipova zagađenja.

Iako smo stopu urbanizacije (*UR*) isključili iz analize, jer postoji osnovana sumnja da je reč o *I(2)* procesu, eksperimentalno su ocenjeni i modeli sa ovom varijablom. Dobijeni rezultati ne dovode u pitanje prezentirane nalaze.

Ocenjivanje modela u formi *Prais-Winsten* (*PW*) regresija sa korigovanim standardnim greškama (*PCSE*) i upotrebom metoda uopštenih najmanjih kvadrata (*FGLS*) gotovo da u potpunosti potvrđuje izložene rezultate. Jedino bitno odstupanje jeste to što je kvadrat populacije (PO^2) u pojedinim *PW* regresijama signifikantan. Ipak, imajući u vidu da su ove tehnike ocenjivanja manje pouzdane, iz ranije navedenih razloga, signifikantnost PO^2 ne može biti prihvaćena kao validan nalaz.

Zaključak

U ovoj studiji je istraživan efekat pojedinih demografskih, ekonomskih i tehnoloških varijabli na emisiju CO_2 u 28 zemalja članica EU u vremenskom periodu 1991-2014. godine. Nalazi do kojih se došlo ekonometrijskim modelovanjem, zasnovanim na neizbalansiranom panel uzorku od

587 (247) opservacija podataka i logaritmovanom *STIRPAT* modelu, pokazuju da je uticaj *per capita* BDP-a statistički signifikantan i pozitivan, što je potvrđeno u brojnim studijama. Povećanje stope rasta *per capita* BDP-a od 1% dovodi do povećanja stope rasta emisije CO_2 između 1,10% i 1,15%.

Rezultati analize robusno i nedvosmisleno potvrđuju pozitivan uticaj energetske intenzivnosti, što je, takođe, nalaz koji je u saglasnosti sa rezultatima drugih empirijskih istraživanja. Naime, povećanje stope rasta relativne potrošnje energije od 1% rezultuje uvećanjem stope rasta emisije CO_2 između 1,07% i 1,09%.

Jedan od najvažnijih rezultata ove studije jeste pozitivan, signifikantan i konstantan uticaj populacije na emisiju CO_2, čime je dodatno osnažen zaključak koji je izveden u velikom broju empirijskih studija. Shodno rezultatima ove analize povećanje stope demografskog rasta od 1% implicira uvećanje stope rasta emisije CO_2 između 0,74% i 1,02%. Na osnovu nalaza ove studije odbacuje se hipoteza da se elastičnost stope rasta emisije CO_2 u odnosu na stopu rasta populacije menja u zavisnosti od veličine stope rasta populacije.

Uticaj bruto dodate vrednosti prerađivačke industrije i demografskih varijabli koje reprezentuju starosnu strukturu stanovništva (udeo dece i adolescenata do 14 godina starosti i udeo stanovništva radnog uzrasta u ukupnom stanovništvu) nije ocenjen kao statistički signifikantan.

Jedini rezultat koji treba tumačiti veoma oprezno jeste nesignifikantan efekat prosečne veličine domaćinstva, budući da je dobijen na prilično malom uzorku, što značajno umanjuje njegovu reprezentativnost i validnost.

Rezultati do kojih se došlo u ovom istraživanju pokazuju da u Evropskoj uniji ekonomski rast nesumnjivo kratkoročno vodi ka povećanju emisije CO_2. Uticaj *per capita* dohotka u skladu sa EKC konceptom, kako je potvrđeno u ranijim studijama u slučaju potrošnje energije, mogao bi biti prisutan u dugom roku. Takođe, nalazi impliciraju da su investicije u istraživačko-razvojne aktivnosti i novu tehnologiju ekološki više nego opravdane, jer, kratkoročno posmatrano, smanjuju relativnu potrošnju energije i emisiju CO_2. Konačno, iako se niska stopa fertiliteta, koja rezultuje smanjenjem broja stanovnika, obično apostrofira kao gorući problem Evropske unije iz više razloga, rezultati ove analize pokazuju da bi generalno negativni demografski trendovi mogli imati i barem jednu pozitivnu konsekvencu koja se ogleda u smanjenju emisije CO_2. Zaključci ovog istraživanja mogli bi biti veoma korisni, imajući u vidu razmere i ozbiljnost fenomena globalnih klimatskih promena, potrebu za što urgentnijom promenom obrasca ponašanja, kao i činjenicu da je ovo jedina autorima poznata studija koja se odnosi na emisiju CO_2 u EU.

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Literatura

ADOM, P. K., & KWAKWA, P. A. (2014). Effects of changing trade structure and technical characteristics of the manufacturing sector on energy intensity in Ghana. *Renewable and Sustainable Energy Reviews* 35(C): 475–483. https://doi.org/10.1016/j.rser.2014.04.014

ADOM, P. K. (2015a). Determinants of energy intensity in South Africa: Testing for structural effects in parameters. *Energy* 89: 334–346. http://dx.doi.org/10.1016/j.energy.2015.05.125

ADOM, P.K. (2015b). Asymmetric impacts of the determinants of energy intensity in Nigeria. *Energy Economics* 49: 570–580. http://dx.doi.org/10.1016/j.eneco.2015.03.027

BALTAGI, H. B., FENG, Q., & KAO, C. (2012). A Lagrange Multiplier test for cross-sectional dependence in a fixed effects panel data model. *Journal of Econometrics* 170: 164–177. https://doi.org/10.1016/j.jeconom.2012.04.004

BECK, N., & KATZ, J.N. (1995). What to do (and not to do) with Time-Series Cross-Section Data. *The American Political Science Review* 89(3): 634–647. http://www.jstor.org/stable/2082979

BREUSCH, S. T., & PAGAN, R. A. (1980). The Lagrange Multiplier test and its applications to model specification in econometrics. *The Review of Economic Studies* 47(1): 239-253. https://www.jstor.org/stable/2297111?seq=1#page_scan_tab_contents

COLE, M. A., & NEUMAYER, E. (2004). Examining the impact of demographic factors on air pollution. *Population and Environment* 26(1): 5–21. https://doi.org/10.1023/B:POEN.0000039950.85422.eb

CRAMER, J. C., & CHENEY, R. P. (2000). Lost in the Ozone: Population Growth and Ozone in California. *Population and Environment: A Journal of Interdisciplinary Studies* 21(3): 315–338. https://doi.org/10.1007/BF02436134

CRAMER, J. C. (1998). Population growth and air quality in California. *Demography* 35: 45–56. http://www.jstor.org/stable/3004026

CRAMER, J. C. (2002). Population Growth and Local Air Pollution: Methods, Models, and Results. *Population and Development Review* 28: 22–52. http://www.jstor.org/stable/3115267

CUMBY, E. R., & HUIZINGA, J. (1992). Testing the Autocorrelation Structure of Disturbances in Ordinary Least Squares and Instrumental Variables Regressions. *Econometrica* 60(1): 185–195. https://doi.org/10.2307/2951684

D'AGOSTINO, B. R., BELANGER, A., & D'AGOSTINO, B. R. Jr. (1990). A Suggestion for Using Powerful and Informative Tests of Normality. *American Statistician* 44(4): 316–321. https://doi.org/10.1080/00031305.1990.10475751

DeHART, J., L., & SOULÉ, P. T. (2000). Does I = PAT work in local places? *Professional Geographer* 52(1): 1–10. https://doi.org/10.1111/0033-0124.00200

DIETZ, T., & ROSA, E. A. (1994). Rethinking the environmental impacts of population, affluence and technology. *Human Ecology Review* 1: 277–300. link

DIETZ, T., & ROSA, E. A. (1997). Effects of population and affluence on CO_2 emissions. *Proceedings of the National Academy of Sciences of the USA* 94 (1): 175–179. link

DRISCOLL, C. J., & KRAAY, C. A. (1998). Consistent Covariance Matrix Estimation with Spatially Dependent Panel Data. *Review of Economics and Statistics* 80 (4): 549–560. https://doi.org/10.1162/003465398557825

GREENE, H. W. (2003). *Econometric Analysis*. 5th ed. New York: Prentice-Hall.

HOECHLE, D. (2007). Robust standard errors for panel regressions with cross-sectional dependence. *The Stata Journal* 7(3): 281–312. link

HOLDREN, J. P. (1991). Population and the energy problem. *Population and Environment* 12(3): 231–255. https://doi.org/10.1007/BF01357916

HONDA, Y. (1985). Testing the Error Components Model with Non-Normal Disturbances. *Review of Economic Studies* 52(4): 681-690. https://doi.org/10.2307/2297739

HÜBLER, M., & KELLER, A. (2009). Energy savings via FDI? Empirical evidence from developing countries. *Environment and Development Economics* 15: 59–80. https://doi.org/10.1017/S1355770X09990088

IM, K.S., PESARAN, M.H., & SHIN, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of Econometrics* 115: 53–74. https://doi.org/10.1016/S0304-4076(03)00092-7

JARQUE, M. C., & BERA, K. A. (1980). Efficient Tests for Normality, Homoscedasticity and Serial Independence of Regression Residuals. *Economics Letters* 6(3): 255–259. https://doi.org/10.1016/0165-1765(80)90024-5

JARQUE, M. C., & BERA, K. A. (1987). A Test for Normality of Observations and Regression Residuals. *International Statistical Review/Revue Internationale de Statistique* 55(2): 163–172. https://doi.org/10.2307/1403192

JONES, D. W. (1991). How urbanization affects energy use in developing countries. *Energy Policy* 19(7): 621-630. https://doi.org/10.1016/0301-4215(91)90094-5

KOENKER, R. (1981). A note on studentizing a test for heteroscedasticity. *Journal of Econometrics* 17(1): 107–112. https://doi.org/10.1016/0304-4076(81)90062-2

LEVIN, A., LIN, C. F., & CHU, C. (2002). Unit root test in panel data: Asymptotic and finite sample properties. *Journal of Econometrics* 108: 1–25. https://doi.org/10.1016/S0304-4076(01)00098-7

LI, K., & LIN, B. (2014). The nonlinear impacts of industrial structure on China's energy Intensity. *Energy* 69: 258-265. http://dx.doi.org/10.1016/j.energy.2014.02.106

NEWEY, K. W., & WEST, D. K. (1987). A Simple, Positive Semi-Definite, Heteroscedasticity and Autocorrelation Consistent Covariance Matrix. *Econometrica* 55(3): 703–708. https://doi.org/10.2307/1913610

PACIONE, M. (2009). *Urban Geography – A Global Perspective*. New York: Routledge.

PARIKH, J., & SHUKLA, V. (1995). Urbanization, energy use and greenhouse effects in economic development. *Global Environmental Change* 5(2): 87–103. https://doi.org/10.1016/0959-3780(95)00015-G

PESARAN, M. H. (2004). General diagnostic tests for cross-section dependence in panels. Cambridge Working Papers in Economics (CWPE) (Working Paper 35/04). https://doi.org/10.17863/CAM.5113

PESARAN, M. H. (2007). A simple panel unit root test in the presence of cross section dependence. *Journal of Applied Econometrics* 22(2): 249–272. https://doi.org/10.1002/jae.951

PETROVIĆ, P., FILIPOVIĆ, S., & RADOVANOVIĆ, M. (2018). Underlying causal factors of the European Union energy intensity: Econometric evidence. *Renewable and Sustainable Energy Reviews* 89: 216–227. https://doi.org/10.1016/j.rser.2018.03.061

PETROVIĆ, P., NIKOLIĆ, G., & OSTOJIĆ, I. (2017). Demografske determinante energetske potrošnje u Evropskoj uniji: rezultati ekonometrijske analize. *Stanovništvo* 55(1): 1–20. https://doi.org/10.2298/STNV170606003P

POUMANYVONG, P., & KANEKO, S. (2010). Does urbanization lead to less energy use and lower CO_2 emissions? A cross-country analysis. *Ecological Economics* 70: 434–444. https://doi.org/10.1016/j.ecolecon.2010.09.029

ROSA, E. A., & DIETZ, T. (1998). Climate Change and Society: Speculation, Construction and Scientific Investigation. *International Sociology* 13(4): 421–455. https://doi.org/10.1177%2F026858098013004002

ROSA, E. A., YORK, R., & DIETZ, T. (2004). Tracking the anthropogenic drivers of ecological impacts. *Ambio* 33 (8): 509–512. https://doi.org/10.1579/0044-7447-33.8.509

ROYSTON, P. (1982). An Extension of Shapiro and Wilk's W Test for Normality to Large Samples. *Journal of the Royal Statistical Society. Series C (Applied Statistics)* 31(2): 115–124. https://doi.org/10.2307/2347973

ROYSTON, P. (1983). A Simple Method for Evaluating the Shapiro-Francia W' Test of Non-Normality. *Journal of the Royal Statistical Society. Series D (The Statistician)* 32(3): 297–300. https://doi.org/10.2307/2987935

ROYSTON, P. (1991). sg3.5: Comment on sg3.4 and an improved D'Agostino test. *Stata Technical Bulletin* 3: 23–24.

ROYSTON, P. (1992). Approximating the Shapiro–Wilk W-test for non-normality. *Statistics and Computing* 2(3): 117–119. https://doi.org/10.1007/bf01891203

ROYSTON, P. (1993a). A pocket-calculator algorithm for the Shapiro–Francia test for non-normality: An application to medicine. *Statistics in Medicine*, 12 (2): 181–184. https://doi.org/10.1002/sim.4780120209

ROYSTON, P. (1993b). A Toolkit for Testing for Non-Normality in Complete and Censored Samples. *Journal of the Royal Statistical Society. Series D (The Statistician)* 42(1): 37–43. https://doi.org/10.2307/2348109

SAMOUILIDIS, J. E., & MITROPOULOS, C. S. (1984). Energy and economic growth in industrializing countries. The case of Greece. *Energy Economics* 6 (3): 191–201. https://doi.org/10.1016/0140-9883(84)90016-1

SHANDRA, J. M., LONDON, B., WHOOLEY, O. P., & WILLIAMSON, J. B. (2004). International Nongovernmental Organizations and Carbon Dioxide Emissions in the Developing World: A Quantitative, Cross-National Analysis. *Sociological Inquiry* 74(4): 520–545. https://doi.org/10.1111/j.1475-682X.2004.00103.x

SHAPIRO, S. S., & FRANCIA, S. R. (1972). An Approximate Analysis of Variance Test for Normality. *Journal of the American Statistical Association* 67 (337): 215–216.

SHAPIRO, S. S., & WILK, B. M. (1965). An Analysis of Variance Test for Normality (Complete Samples). *Biometrika* 52(3/4): 591–611. https://doi.org/10.1093/biomet/52.3-4.591

SHI, A. (2003). The impact of population pressure on global carbon dioxide emissions, 1975–1996: evidence from pooled cross-country data. *Ecological Economics* 44: 29–42. https://doi.org/10.1016/S0921-8009(02)00223-9

SZROETER, J. (1978). A Class of Parametric Tests for Heteroscedasticity in Linear Econometric Models X1-ab. *Econometrica* 46(6): 1311–1327. https://doi.org/10.2307/1913831

TONN, B. E., WAIDLEY, G., & PETRICH, C. (2001). The ageing US population and Environmental policy. *Journal of Environmental Planning and Management* 44(6): 851–876. https://doi.org/10.1080/09640560120087606

WOOLDRIDGE, M. J. (2013). *Introductory Econometrics: A Modern Approach*. 5th ed. Mason, OH, USA: South-Western.

YORK, R. (2007). Demographic trends and energy consumption in European Union Nations, 1960–2025. *Social Science Research* 36: 855–872. https://doi.org/10.1016/j.ssresearch.2006.06.007

YORK, R., ROSA, E. A., & DIETZ, T. (2003a). STIRPAT, IPAT, and ImPACT: analytic tools for unpacking the driving forces of environmental impacts. *Ecological Economics* 46(3): 351–365. https://doi.org/10.1016/S0921-8009(03)00188-5

YORK, R., ROSA, E. A., & DIETZ, T. (2003b). A rift in modernity? Assessing the anthropogenic sources of global climate change with the STIRPAT model. *International Journal of Sociology and Social Policy* 23(10): 31–51. https://doi.org/10.1108/01443330310790291

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Emissions of CO_2 in the European Union: Empirical analysis of demographic, economic and technological factors

S u m m a r y

Greenhouse gases emissions (GHG) and global climate change phenomena have been top priorities on the agenda of highest-level policy makers for a long period of time now. Scientists are well-familiarised with the fact that use of fossil fuels, such as oil derivatives and coal, is the main generator of harmful gases. In addition, possible substitutions for fossil fuels in the form of other energy sources are very limited, and it should be remembered that other energy sources also have certain adverse environmental effects. Bearing in mind climate change caused by products of fossil fuels combustion, as well as inevitable depletion of natural crude oil resources, management of growing global energy demand becomes one of the key goals and challenges of 21st century.

This study is dedicated to lightening up of most significant demographic, economic and technological indicators of carbon dioxide (CO_2) emissions in 28 EU member states in the period between 1991 and 2014. The research results, based on logarithmic *STIRPAT* model and application of econometric techniques on unbalanced panel data sample of 587 (247) observations, indicate that impact of GDP *per capita* is statistically significant and positive. An increase in GDP *per capita* growth rate of 1% leads to increased CO_2 emissions growth rate ranging between 1.10% and 1.15%.

The results unequivocally suggest positive impact of energy intensity to CO_2 emissions. Increased growth rate in relative energy consumption of 1% results in increased CO_2 emission growth rate ranging between 1.07% and 1.09%.

This analysis reinforces the conclusions of numerous empirical studies that impact of population on CO_2 emissions is significant and positive. An increase in demographic growth rate of 1% implies increased CO_2 emission growth rate ranging between 0.74% and 1.02%. In other words, low fertility rate in the European Union might have positive effect on CO_2 emissions reduction. In addition, possibility that elasticity of CO_2 emission growth rate in relation to population growth rate is changed depending on the size of population growth rate is rejected on the basis of obtained findings.

Impact of gross value added of manufacturing and demographic variables representing the population age structure (share of children and adolescents younger than 14 and share of working age population in total population) is not estimated as statistically significant.

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Finally, the result that average household size does not determine the CO_2 emission should be construed very carefully, since it was obtained on quite small sample, thus questioning representativeness and validity thereof.

Key words: *CO_2 emission, population, per capita GDP, energy intensity, elasticity*

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PROMENE U BROJU I OSNOVNIM KARAKTERISTIKAMA OBUDOVELIH U SRBIJI (1980-2016)

Goran PENEV, Biljana STANKOVIĆ **

Povećanje udela obudovelih uobičajeni je pratilac odmaklog starenja stanovništva. Srbija se sa stopom obudovelosti od 11,7% 2011. godine nalazi pri samom evropskom vrhu, a stopa obudovelosti muškaraca (5,2%) najveća je u Evropi. U radu se istražuje obudovelost u Srbiji u periodu 1980-2016. Osnovni cilj rada je deskripcija trendova i karakteristika udovištva u posmatranom razdoblju. Rad je prvenstveno zasnovan na analizi do sada neobjavljenih podataka popisa stanovništva (između 1981. i 2011) i vitalne statistike (1980-2016). U posmatranom periodu je utvrđeno kontinuirano povećanje broja udovaca i udovica i njihovog udela u ukupnom stanovništvu. Uočene su specifičnosti u starosnoj i polnoj strukturi obudovelih. Više od 4/5 obudovelih je starije od 60 godina, a vrednosti svih pokazatelja obudovelosti su tri ili četiri puta veće kod žena. Sagledan je i nupcijalitet obudovelih u smislu sve ređeg sklapanja ponovnog braka i smanjenja rodnih razlika. Analizirana je obrazovna struktura obudovelih, koja se odlikuje većim učešćem lica nižeg obrazovnog nivoa. Utvrđeno je da obudoveli čine polovinu ukupnog broja članova samačkih domaćinstava. Među njima je više od 4/5 staro 65 ili više godina, a čak polovina je starija od 75 godina. Dobijeni rezultati upućuju na potrebu daljih proučavanja, kako demografskih, tako i iz drugih relevantnih oblasti. Takođe, oni mogu da predstavljaju polaznu osnovu za definisanje mera i aktivnosti zdravstvenih, socijalnih i drugih institucija sistema usmerenih na stare, s fokusiranjem pažnje na obudovela lica, a posebno na udovce, kao izrazito vulnerabilne grupe.

Ključne reči*: obudovelost, stari, rodne razlike, samačka domaćinstva, starenje stanovništva*

Uvod

Odmaklo starenje stanovništva po pravilu je praćeno povećanjem udela obudovelih. U tom smislu, Srbija, kao i većina evropskih zemalja, a posebno bivših socijalističkih država ne predstavlja izuzetak. Srbija u poslednjim decenijama ima rastući i visok udeo obudovelih u ukupnom stanovništvu starijem od 15 godina.[1] Ona je u 2011, sa stopom obudovelosti od 11,7% pri samom evropskom vrhu (viša je jedino u Bugarskoj i Ukrajini).

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Istovremeno, na osnovu podataka Evrostata i nacionalnih statističkih institucija, Srbija ima najveću stopu obudovelosti muškaraca u Evropi (5,2%), s tim što su udovištvom pre svega pogođene žene (78% obudovelih su udovice).

Obudoveli čine posebno osetljivu grupu stanovništva. Smrt bračnog partnera, nastupila iznenada ili posle dugotrajnog bolovanja, prema mnogim istraživačima, predstavlja jedan od najtežih životnih događaja. Iako gubitak bračnog partnera može da doživi osoba svakog uzrasta, to najčešće predstavlja deo iskustva starih ljudi. U starosti, ljudi se obično suočavaju sa višestrukim ograničenjima, vezanim za zdravlje, finansijske resurse, porodične i druge socijalne relacije. To otežava njihovo prilagođavanje na izazove sa kojima se suočavaju, među kojima je jedan od najvećih, iako u starosti nije i neočekivan, upravo smrt bračnog partnera. Promene koje obudovelost sa sobom donosi su uglavnom dugoročne i one su za mnoge u velikoj meri negativne. Gubitak značajne osobe obično je praćen pogoršanjem finansijske situacije, osećanjem usamljenosti, promenama u socijalnom položaju, dotadašnjim podelama uloga i uobičajenom dnevnom rasporedu, što naročito važi za obudovele čiji je brak bio tradicionalni, sa jasnom rodnom podelom uloga i obaveza (Grundy, 2006; Stroebe *et al*., 2007; Biro, 2013; Perrig-Chiello *et al*., 2016).

Rezultati analize napravljene još polovinom 19. veka pokazali su da osobe u braku žive duže od ostalih, i ovaj pozitivan efekat braka na morbiditet i mortalitet supružnika, i to naročito muškaraca, potvrđen je i u mnogim kasnijim istraživanjima (Philipov, Scherbov, 2016). Posle smrti partnera, većina obudovelih ljudi se prilagodi novoj situaciji, i to bez stručne pomoći. Ipak, zapažena je i pojava da za neke osobe smrt bračnog partnera predstavlja tako teško iskustvo da povećava rizik od smrti, naročito u prvim nedeljama i mesecima ožalošćenosti, češće kod udovaca (Martikainen, Valkonen, 1996; Stroebe *et al*., 2007; Boyle *et al*., 2011; Shor *et al*., 2012). Posle smrti partnera, naročito su žene izložene većim finansijskim teškoćama, ali je to manje izraženo kod obrazovanijih i zaposlenih žena (DiGiacomo *et al*., 2013; Perrig-Chiello *et al*., 2016; Biro, 2013).

U radu je predmet istraživanja obudovelost u Srbiji u periodu 1980-2016. Obrađuju se osnovni trendovi u kretanju broja i udela obudovelih, sagledava njihova starosna i polna struktura, ponovno sklapanje braka obudovelog stanovništva. Takođe, analiziraju se razlike u obudovelosti prema obrazovnom nivou. Posebna pažnja je posvećena promeni broja i strukturnim karakteristikama jednočlanih domaćinstava obudovelih lica.

Osnovni cilj rada je opis skorašnjih trendova i aktuelnih karakteristika obudovelog stanovništva Srbije. S obzirom da se Srbija nalazi na samom vrhu liste evropskih zemalja prema udelu obudovelih u ukupnom stanovništvu, dobijeni rezultati mogu da predstavljaju analitičku osnovu kreato-

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rima javnih politika prilikom utvrđivanja potreba i definisanja različitih mera i akcija namenjenih starijoj populaciji, među kojom obudoveli čine posebno vulnerabilnu kategoriju. Namera je da ovo istraživanje predstavlja inicijalnu osnovu i podsticaj za dodatna proučavanja, kako kvantitativna, tako i kvalitativna, demografa, ali i istraživača drugih profila (lekari, psihijatri, socijalni radnici, psiholozi, sociolozi i drugi).

Metodološke napomene i izvori podataka

Prilikom razmatranja bračne strukture stanovništva, mogu se primeniti dva pristupa. Prvi, koji se primenjuje u ogromnoj većini zemalja, je pristup koji bračni status posmatra s aspekta zakonskog bračnog stanja (*de iure* koncept). Drugi pristup je kada se status posmatra s aspekta stvarnog bračnog stanja (*de facto* koncept). U Srbiji su sve do 2002. godine, u svim popisima koji su obavljeni nakon Drugog svetskog rata, praćenja strukture stanovništva prema bračnom statusu vršena isključivo na osnovu zakonskog bračnog stanja pojedinca. U Popisu 2011. takođe je primenjen *de iure* koncept, ali su prvi put uključena i pitanja o faktičnom bračnom statusu, koja su se odnosila na lica koja su u zakonskom braku (da li žive u zajednici s bračnim partnerom ili su razdvojeni), kao i podaci o licima koja žive u vanbračnoj zajednici prema njihovom zakonskom bračnom statusu (RZS, 2013).

U ovom radu su pod obudovelim licima, tj. udovcima i udovicama, podrazumevana samo lica koja posle smrti bračnog partnera nisu sklopila novi brak (*de iure* koncept). Takva, tzv. uža definicija primenjena je i u svim ostalim evropskim zemljama (Eurostat, 2017), čak i u zemljama u kojima je zakonom predviđena mogućnost postojanja registrovane partnerske zajednice, odnosno mogućnost prestanka takve zajednice zbog smrti partnera – ukupno ih je 10, uglavnom skandinavske i zemlje Beneluksa (Eurostat, 2016). Treba napomenuti da su Popisom 2011. prvi put na teritoriji Srbije popisana lica koja su po zakonu smatrana obudovelim, ali koja žive u zajednici (vanbračnoj). Međutim, ne postoje popisna pitanja na osnovu kojih bi mogla biti izdvojena lica koja više ne žive u zajednici (vanbračnoj) zbog smrti partnera.

Rezultati istraživanja koji su objavljeni u ovom radu uglavnom su dobijeni na osnovu analize sekundarnih podataka o obudovelim licima u Srbiji u periodu od ranih 1980-ih do sredine druge decenije 21. veka. Kvantitativna analiza zasnovana je isključivo na zvaničnim podacima Republičkog zavoda za statistiku Srbije, a prvenstveno su korišćeni podaci četiri popisa stanovništva sprovedena između 1981. i 2011, ali s fokusom na poslednji. Takođe, korišćeni su i podaci vitalne statistike koji se odnose na sklapanje braka prema ranijem bračnom stanju. Uglavnom se radi o neobjavljenim

podacima koji su dobijeni od RZS-a, a na zahtev autora ovog teksta. U analizi su primenjeni uobičajeni metodi demografske i statističke analize koji se koriste prilikom istraživanja karakteristika i trendova promena pojedinih populacionih kontingenata.

Pored rezultata kvantitativnog istraživanja autora, u radu su navedeni i neki važniji kvantitativni i kvalitativni nalazi drugih autora u cilju potpunijeg opisa tendencija i karakteristika obudovelih lica u Srbiji. Posebno su značajni nalazi do sada neobjavljenih rezultata naučnog projekta *Istraživanje demografskih fenomena u funkciji javnih politika u Srbiji.*

Rezultati i diskusija

Srbija se u analiziranom periodu, počev od 1981, suočava sa značajnim povećanjem broja obudovelih i njihovog udela u ukupnom stanovništvu zemlje. Sve veći broj obudovelih svakako je jedna od najočiglednijih posledica intenzivnog starenja stanovništva. Međutim, uzroci povećanja broja udovaca i udovica mnogo su kompleksniji, a posledice, ne samo demografske, su brojne i tiču se mnogih aspekata društva.

Obudoveli nikad brojniji

U Srbiji je, prema rezultatima popisa stanovništva obavljenog 2011. godine bilo ukupno 716,8 hiljada obudovelih lica. U poslednje dve decenije 20. i u prvoj dekadi 21. veka, broj obudovelih kontinuirano se povećavao (tabela 1). On je u 2011. bio veći za približno 200 hiljada lica (ili za 37,5%) nego u vreme Popisa 1981. Povećanje broja obudovelih bilo je najintenzivnije u međupopisnom periodu 1991-2002, kada su u starost naglog povećanja rizika „ulaska" u udovištvo (sedma decenija života) pristizale relativno brojne generacije rođene tokom prve polovine 1930-ih.

Tabela 1.
Bračna struktura stanovništva Srbije (stari 15 ili više godina)

Bračno stanje	Broj stanovnika				Struktura (u procentima)			
	1981	1991	2002	2011	1981	1991	2002	2011
Ukupno	6145622	6294350	6321231	6161584	100,0	100,0	100,0	100,0
Neoženjeni/neudate	1196686	1248140	1540743	1719959	19,5	20,0	24,5	28,0
Oženjeni/udate	4216776	4223172	3820251	3396240	68,9	67,7	60,7	55,3
Udovci/udovice	521467	546890	684089	716843	8,5	8,8	10,9	11,7
Razvedeni/razvedene	188437	216001	252793	303970	3,1	3,5	4,0	5,0
Nepoznato	22256	60147	23355	24572				

Izvor: Konačni rezultati popisa stanovništva Srbije obavljenih između 1981. i 2011. godine. Za 1991. i 2011. podaci se odnose samo na popisano stanovništvo (ne raspolaže se zvaničnim procenama o bračnoj strukturi stanovništva koje je bojkotovalo tadašnje popise).

Napomena 1: Podaci nisu potpuno uporedivi zbog različitih definicija ukupnog stanovništva.

Napomena 2: Strukture u procentima se odnosi samo na stanovništvo poznatog bračnog stanja.

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Ujedno, to je i razdoblje kada je u Srbiju pristiglo nekoliko stotina hiljada izbeglica iz Hrvatske i Bosne i Hercegovine, među kojima je, posebno u prvom masovnijem izbegličkom talasu tokom prve polovine 1990-ih, udeo obudovelih, naročito udovica, bio veći nego kod „domicilnog" stanovništva (KIRS, 2001).

Istovremeno, ostvareno je i značajno povećanje opšte stope obudovelosti tj. udela obudovelih lica u ukupnom stanovništvu Srbije (stari 15 ili više godina). Prema rezultatima Popisa iz 2011. godine, stopa obudovelosti je dostigla 11,7%, što je znatno veći nivo nego prema rezultatima prethodna tri popisa. Međupopisni period 1991-2002. se izdvaja kao razdoblje najintenzivnijeg povećanja broja obudovelih i njihovog udela u ukupnom stanovništvu. Pored spomenutih neposrednih činilaca tako naglog povećanja (ulazak brojnih generacija u „rizičnu" starost, dolazak izbeglica), od značaja je bilo i ubrzano povećanje broja građana Srbije na radu i boravku u inostranstvu (Penev, Predojević-Despić, 2012), tj. populacionog kontingenta s potprosečnim udelom obudovelih, kao i promena koncepta ukupnog stanovništva (u 1991. to je stanovništvo u zemlji i inostranstvu, a 2002. to je stanovništvo u zemlji i lica koja su van zemlje kraće od godinu dana).

Sve manja privlačnost braka

Uprkos naglom povećanju broja obudovelih lica, ono se odvijalo sporije od povećanja preostala dva kontingenta lica koja nisu u braku, tj. od broja lica koja nisu nikada sklapala brak ili pak od povećanja broja razvedenih lica (tabela 1). Relativno najveće bilo je povećanje broja razvedenih (za preko 60%, sa 188 hiljada u 1981, na 304 hiljade u 2011, odnosno sa 3,1% na 5,0%). Istovremeno, apsolutno najveće povećanje ostvareno je u broju neoženjenih i neudatih koji je 2011. bio za 523 hiljade veći nego 1981. godine (1,72 miliona prema 1,20 miliona). Razlozi neujednačenog intenziteta povećanja brojnosti pojedinih kontingenata lica koja nisu u braku su različiti, ali se kao neposredni mogu izdvojiti dva najvažnija: starenje stanovništva i sve manje sklapanje braka, kako prvog tako i ponovnog.

Za razliku od broja lica koja nisu u braku, broj lica u braku je iz popisa u popis bivao sve manji. U periodu 1981-2011. broj oženjenih muškaraca i udatih žena smanjen je za 821 hiljadu, ili za jednu petinu. Istovremeno njihov udeo u ukupnom stanovništvu starom 15 ili više godina smanjen je sa 68,9% na 55,3%.

Popisni podaci ukazuju da je privlačnost formalne bračne zajednice u Srbiji sve manja. Takve promene u skladu su sa tendencijama koje su poslednjih decenija 20. veka prisutne širem Evrope, a ispoljavaju se kroz prekomponovanje braka i partnerskih odnosa (Bobić, 2003; Petrović, 2011). U Srbiji se to najupečatljivije ogleda ne samo kroz smanjenje broja

lica u braku, odnosno povećanja broja lica koja nisu u braku, već i preko smanjenja broja sklopljenih brakova u okviru sva tri relevantna kontingenta stanovništva (neoženjeni/neudate, obudoveli i razvedeni). Može se očekivati nastavak opadanja broja lica koja su braku, odnosno povećanje broja lica koja nisu u braku, uključujući udovce i udovice.

Sve je više udovaca, a još više udovica

Udovištvo je status kod koga su prisutne velike, a u odnosu na ostale grupe po bračnosti, i najveće razlike po polu, kao i po starosti. Obudovelost u mnogo većoj meri pogađa žene i stare. Konstatacija o kontinuiranom povećanju broja obudovelih i njihovom udelu u ukupnom stanovništvu Srbije podjednako važi za oba pola, a dinamika broja udovaca i udovica i stope obudovelosti muškaraca i žena uglavnom je vrlo izjednačena (tabela 2a).

Tabela 2a.
Bračna struktura stanovništva Srbije (stari 15 ili više godina), po polu

Bračno stanje	Broj stanovnika				Struktura u procentima			
	1981	1991	2002	2011	1981	1991	2002	2011
Muško - svega	2997537	3056883	3041667	2971868	100,0	100,0	100,0	100,0
Neoženjen	705916	735627	887084	988400	23,6	24,3	29,3	33,4
Oženjen	2107861	2107373	1901128	1693659	70,6	69,5	62,7	57,2
Udovac	113437	114398	146223	154459	3,8	3,8	4,8	5,2
Razveden	59891	74513	95279	122619	2,0	2,5	3,1	4,1
Nepoznato	10432	24972	11953	12731				
Žensko - svega	3148085	3237467	3279564	3189716	100,0	100,0	100,0	100,0
Neudata	490770	512513	653659	731559	15,6	16,0	20,0	23,0
Udata	2108915	2115799	1919123	1702581	67,2	66,1	58,7	53,6
Udovica	408030	432492	537866	562384	13,0	13,5	16,5	17,7
Razvedena	128546	141488	157514	181351	4,1	4,4	4,8	5,7
Nepoznato	11824	35175	11402	11841				

Izvor: Podaci popisa stanovništva i proračuni autora.
Napomena: Podaci nisu potpuno uporedivi zbog različitih definicija ukupnog stanovništva.

Za tri decenije, između popisa iz 1981. i 2011. godine, broj udovaca je povećan za 41 hiljadu lica (za 36,2%), dok je porast broja udovica bio višestruko veći (154 hiljade), ali s neznatno većim procentnim povećanjem (37,8%). Sledstveno, ostvarene su i neznatne promene vrednosti koeficijenta feminiteta obudovelih (sa 360 na 364 udovice na 100 udovaca) odnosno polne strukture tog kontingenta stanovništva (udeo udovica povećan je sa 78,2% na 78,5%) (tabela 3). Slično je i sa kreta-njem vrednosti stope obudovelosti. U 1981. udeo udovaca u ukupnom muškom stanovništvu (stari 15 i više godina) iznosio je 3,8%, dok je udeo udovica u

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ukupnom ženskom stanovništvu bio višestruko veći (13,0%). Trideset godina kasnije, vrednosti stope obudovelosti muškaraca i žena bile su značajno veće (5,2% odnosno 17,7%), a razlika po polu između vrednosti stope obudovelosti je u procentnim poenima povećana sa 9,2 na 12,5.

Tabela 2b.

Pokazatelji obudovelosti stanovništva Srbije (stari 15 ili više godina), po polu

Pokazatelj	Pol	1981	1991	2002	2011
Opšta stopa obudovelosti (%) (udeo u ukupnom broju lica starih 15 ili više godina)	sv.	8,5	8,8	10,9	11,7
	m.	3,8	3,8	4,8	5,2
	ž.	13,0	13,5	16,5	17,7
Udeo obudovelih u ukupnom broju lica starih 15 ili više godina koja su ikada sklopila brak (%)	sv.	10,6	11,0	14,4	16,2
	m.	5,0	5,0	6,8	7,8
	ž.	15,4	16,1	20,6	23,0
Indeks obudovelosti (broj obudovelih na 100 lica u braku)	sv.	12,4	12,9	17,9	21,1
	m.	5,4	5,4	7,7	9,1
	ž.	19,3	20,4	28,0	33,0

Izvor: Proračuni autora na osnovu objavljenih i neobjavljenih konačnih rezultata popisa stanovništva Srbije.
Napomena: Podaci nisu potpuno uporedivi zbog različitih definicija ukupnog stanovništva.

Da se fenomen obudovelosti tiče ponajviše žena potvrđuju i vrednosti nekih manje korišćenih pokazatelja, kao što su udeo udovaca/udovica u ukupnom broju lica koja su ikada sklopila brak, i indeks obudovelosti (tabela 2b). Vrednosti sva tri izabrana indikatora obudovelosti koje se odnose na žensko stanovništvo su tri do četiri puta veće nego za muško stanovništvo. Razlike po polu su najveće u slučaju indeksa obudovelosti (odnos je od 3,6:1 do 3,8:1), što je neposredno uslovljeno znatno većim udelom obudovelih među ženama i stalno većim udelom lica u braku među muškarcima (tabela 2a).

Prilično stabilna bila je i polna struktura kontingenta lica koja nikada nisu sklopila brak, kao i, očekivano, lica koja su u braku. Međutim, za razliku od obudovelih, muškarci su brojniji među licima koja nikada nisu sklopila brak, ali je njihov udeo u tom kontingentu opadajući. Za tri decenije, udeo muškaraca smanjen je sa 59,0% na 57,5% (tabela 3).

Kod razvedenih, polna struktura je mnogo sličnija onoj kod obudovelih – žene su brojnije. Ipak, promene koje su se odvijale u periodu 1981-2011. (kontinuirano i intenzivno povećanje broja razvedenih) rezultirale su sve manjom razlikom u broju muškaraca i žena, odnosno sve većim udelom muškaraca u kontingentu razvedenih lica (sa 31,8% na 40,3%).

Tabela 3.
Polna struktura stanovništva Srbije (stari 15 i više godina), po bračnom statusu

Pokazatelj	Bračni status	1981	1991	2002	2011
Koeficijent feminiteta (broj žena na 100 muškaraca)	Ukupno	105,0	105,9	107,8	107,3
	Neoženjeni/neudate	69,5	69,7	73,7	74,0
	Oženjeni/udate	100,1	100,4	100,9	100,5
	Udovci/udovice	359,7	378,1	367,8	364,1
	Razvedeni/razvedene	214,6	189,9	165,3	147,9
Udeo žena (%)	Ukupno	51,2	51,4	51,9	51,8
	Neoženjeni/neudate	41,0	41,1	42,4	42,5
	Oženjeni/udate	50,0	50,1	50,2	50,1
	Udovci/udovice	78,2	79,1	78,6	78,5
	Razvedeni/razvedene	68,2	65,5	62,3	59,7

Izvor: Proračuni autora na osnovu objavljenih i neobjavljenih konačnih rezultata popisa.
Napomena: Podaci nisu potpuno uporedivi zbog različitih definicija ukupnog stanovništva.

Udovice su brojnije od udovaca i ukoliko se taj kontingent posmatra po starosti. Popisni podaci potvrđuju da je udovica više nego udovaca u svim petogodišnjim grupama (15 − 75+), i da su vrednosti koeficijenta feminiteta obudovelih primetno veće kod mladih i sredovečnih, tj. kod starosnih grupa koje se odlikuju niskim odnosno ispod prosečnim stopama obudovelosti. Kod starih, udovice su takođe brojnije od udovaca, ali se njihov udeo u ukupnom broju obudovelih iste starosti gotovo po pravilu smanjuje sa starošću (tabela 4). Prema rezultatima popisa obavljenih u 21. veku smanjenje udela udovica u ukupnom broju obudovelih prisutno je počev od starosne grupe 20-24 (2002), odnosno starosti 30-34 (2011). Popisom iz 2002. maksimalno učešće udovica zabeleženo je u starosti 20-24 godine (91%) i zatim se s povećanjem starosti ono kontinuirano smanjivalo, i to do minimalne vrednosti od 76% (75+). Za 2011. godinu maksimalan udeo udovica izračunat je za starosnu grupu 30-34 (87%), a minimalan za grupu 75 ili više godina (75%).

Više od četiri petine obudovelih lica je starije od 60 godina

U savremenim mirnodopskim prilikama, i bez skorih oružanih sukoba s velikim ljudskim gubicima, najveći broj obudovelih su lica koja pripadaju starijim uzrastima. U Srbiji je, prema rezultatima Popisa 2011. godine, prosečna starost obudovelih lica iznosila 71,6 godina, dok je 84% obudovelih bilo staro 60 ili više godina, a 61% staro 70 ili više godina. Da je udovištvo prisutno, pre svega, kod starih, može se zaključiti i na osnovu prethodna tri popisa, ali je prosečna starost obudovelih tada bila primetno niža, a procentni udeli starih među ovim licima znatno manji (tabela 4).

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Tabela 4.
Starosna struktura i prosečna starost obudovelih u Srbiji, po polu

Starost (god.)	1981			1991			2002			2011		
	svega	muško	žensko	svega	muško	žensko	svega	muško	žensko	svega	muško	žensko
	Broj obudovelih											
Ukupno	521467	113437	408030	546890	114398	432492	684089	146223	537866	716843	154459	562384
Do 40	14541	2548	11993	14336	2773	11563	10893	1403	9490	5685	790	4895
40-59	126652	20007	106645	113955	20908	93047	116143	20661	95482	108507	18641	89866
60-69	121056	20532	100524	173875	31537	142338	189565	38482	151083	164556	31108	133448
70+	255364	69493	185871	240236	57621	182615	361423	84373	277050	438095	103920	334175
	Struktura obudovelih (u procentima)											
Ukupno	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Do 40	2,8	2,3	3,0	2,6	2,5	2,7	1,6	1,0	1,8	0,8	0,5	0,9
40-59	24,5	17,8	26,3	21,0	18,5	21,7	17,1	14,3	17,9	15,1	12,1	16,0
60-69	23,4	18,2	24,8	32,1	27,9	33,1	28,0	26,6	28,3	23,0	20,1	23,7
70+	49,3	61,7	45,9	44,3	51,1	42,5	53,3	58,2	52,0	61,1	67,3	59,4
	Prosečna starost (u godinama)											
	67,5	70,2	66,8	68,0	69,8	67,5	69,2	70,6	68,8	71,6	73,2	71,1

Izvor: Podaci popisa stanovništva i proračuni autora.
Napomena: Podaci nisu potpuno uporedivi zbog različitih definicija ukupnog stanovništva.

Veoma su primetne i razlike u odnosu na prosečnu starost ostalog stanovništva (celibateri, lica u braku i razvedeni, stari 15 i više godina), koje je, razumljivo, znatno mlađe od kontingenta obudovelih. Razlika između prosečnih starosti ta dva kontingenta je prema rezultatima sva četiri popisa iznosila više od 25 godina (od 25,5 u 1991. do 26,9 godina u 1981).

Da se obudovelost u Srbiji u periodu 1981-2011. prvenstveno odnosi na starije stanovništvo potvrđuju i podaci o specifičnim stopama obudovelosti (tabela 5). Po petogodišnjim starosnim grupama, udeli obudovelih se, bez izuzetka, povećavaju sa starošću. Takođe su izrazito stabilne vrednosti i stope obudovelosti po starosti, naročito kod stanovništva starog 60 i više godina. One su, prema rezultatima sva četiri analizirana popisa, vrlo niske kod mladog i mlađeg sredovečnog stanovništva – u intervalu od 0,0% za uzrast 15-19 godina (1991, 2002. i 2011) do 2,3% u grupi 40-44 godine (1981), zatim se ubrzano povećavaju kod stanovništva starijeg od 45 godina, da bi u starosti 55-59 godina iznosile oko 10% (od 11,6% u 1981. do 9,6% u 2011). Udeli obudovelih su najveći kod starih, i već od starosne grupe 60-64 stalno su preko 15%. Gotovo po pravilu, za svaku narednu petogodišnju starosnu kohortu, vrednost stope obudovelosti je veća za 10 procentnih poena. Kod najstarijih, 75 ili više godina, udeli obudovelih su najveći, i u sve četiri popisne godine iznosili su 57-58%.

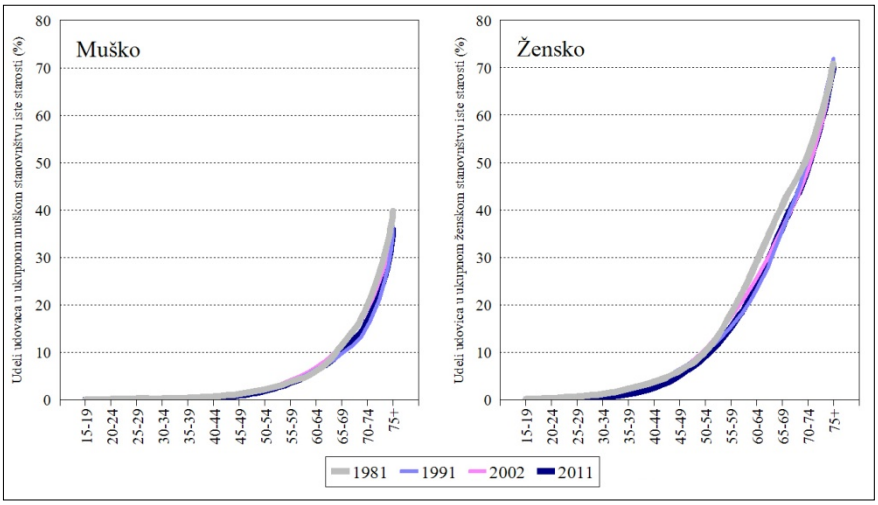
Tabela 5.
Stopa obudovelosti u Srbiji, po starosti (%)

God.	Ukupno	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
1981	8,5	0,1	0,2	0,4	0,7	1,3	2,3	3,7	6,3	11,6	18,6	27,8	37,3	57,9
1991	8,8	0,0	0,2	0,3	0,7	1,2	2,2	3,9	6,3	9,8	15,3	24,4	35,7	57,7
2002	10,9	0,0	0,1	0,3	0,6	1,2	2,2	3,8	6,6	11,1	16,9	25,0	35,8	56,9
2011	11,7	0,0	0,0	0,1	0,3	0,7	1,6	3,1	5,6	9,6	15,5	24,4	34,8	56,7

Izvor: Proračuni autora na osnovu objavljenih i neobjavljenih konačnih rezultata popisa stanovništva Srbije.
Napomena: Podaci nisu potpuno uporedivi zbog različitih definicija ukupnog stanovništva.

Spomenuti, tzv. rastući unimodalni tip starosnog modela obudovelosti stanovništva Srbije karakterističan je za oba pola (grafikon 1).

Grafikon 1.
Specifične stope obudovelosti u Srbiji po starosti (%), za oba pola



Izvor: Proračun autora na osnovu konačnih rezultata popisa stanovništva
Napomena: Podaci nisu potpuno uporedivi zbog različitih definicija ukupnog stanovništva.

Razlike koje postoje odnose se prvenstveno na visinu specifičnih stopa obudovelosti. One su kod svih petogodišnjih grupa višestruko veće kod ženskog stanovništva. Razlike su relativno najveće kod sredovečnog stanovništva (20-59 godina), a posebno naglašene kod mlađih sredovečnih (20-39) – stope su čak 6-7 puta veće kod žena nego kod muškaraca (2011). Međutim, to su ujedno i starosti kod kojih je udeo obudovelih vrlo nizak. Za muškarce one su stalno bile ispod 1%, a za žene od 1,2% (2011) do najviše 2,3% (1981). Kod starijih od 40 godina, relativne razlike u vrednostima specifične stope obudovelosti između žena i muškaraca su manje i opadajuće sa starošću, ali su apsolutne razlike rastuće (grafikon 1). Tako su 2011. godine, počev od starih 60-64 godine, stope obudovelosti žena

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bile četiri, zatim tri i po, pa tri, a za stare 75 i više godina „samo" dva puta veće od stopa obudovelosti muškaraca istih starosti. Međutim, apsolutna razlika u visini udela obudovelih između žena i muškaraca je za stare 60-64 godine iznosila 18 procentnih poena (24% prema 6%), za stare 70-74 godine 32 procentna poena (49% prema 17%), a za najstarije (75 i više godina) 34 procentna poena (70% prema 36%).

Zašto ima više udovica?

Značajno veći broj žena među obudovelima u Srbiji ishod je niza faktora, kakvi se nalaze u osnovi ovog fenomena i u ostalim evropskim zemljama (Stevens, 2002; Delbès *et al.*, 2006). Najpre, to je uslovljeno činjenicom da je žensko stanovništvo Srbije znatno starije od muškog, i sa znatno većim udelom starih (Penev, 2015). Zatim, to je duži životni vek žena, za približno 5 godina, kako u godinama uobičajenim za sklapanje prvog braka (20-35) (RZS, 2014), tako i duže očekivano trajanje života (OTŽ) udovica nego udovaca (tabela 6). Od važnosti je i nadalje dominantan tradicionalni model bračnosti po kome je mladoženja stariji od neveste (prosečno oko 3,5 godine, i to kako početkom 1980-ih tako i sredinom druge decenije 21. veka (RZS, 2016). I najzad, od značaja je i veća učestalost ponovnog sklapanja braka udovaca nego udovica.

Žene duže žive, a u osnovi kraćeg životnog veka muškaraca stoje brojni faktori. To su pre svega biološki, koji uključuju genetske, fiziološke, imunološke i druge specifičnosti. Od značaja su, međutim, i razlike u ponašanju, pre svega veća sklonost muškaraca ka rizičnim ponašanjima, ali i teže donošenje odluke da potraže pomoć u slučaju fizičkih, emocionalnih i mentalnih problema i teškoća, odlaganje odlaska kod lekara i započinjanja lečenja. Od uticaja je i to što su socijalni kontakti muškaraca obično oskudniji, što posledično znači i manju socijalnu podršku u situacijama kao što je bolest ili gubitak partnera. Stoga su muškarci češće usamljeni, što može da bude povezano i s većim narušavanjem psihofizičkog zdravlja, depresivnošću i drugim posledicama (Oksuzyan *et al.*, 2008; Seifarth *et al.*, 2012; Luy, 2003).

Biološki, kao i socijalni, kulturni, ekonomski i drugi faktori oblikuju različite uloge muškaraca i žena, pa i njihovu specifičnu vulnerabilnost. Posle gubitka bračnog partnera, većem riziku od smrti češće su izloženi muškarci (Shor *et al.*, 2012). Njihova emocionalna osetljivost je obično naglašenija i osećanje usamljenosti i izolovanosti snažnije. Često imaju manje izgrađene socijalne mreže pa su im manje i mogućnosti da se oslone na osobe koje bi im pružile potrebnu emotivnu podršku, a i skloniji su da u stresnim životnim situacijama pribegavaju nezdravim ponašanjima poput prekomernog konzumiranja alkohola i pušenja duvana (Martikainen, Valkonen, 1996).

Tabela 6.
Očekivano trajanje života u Srbiji, po polu, petogodišnjim starosnim grupama (50-84 godine) i bračnom stanju

Period	Bračno stanje	Muško				Žensko			
		50-54	60-64	70-74	80-84	50-54	60-64	70-74	80-84
1980-1982	Neoženjen/neudata	20,9	14,5	9,8	7,9	23,3	16,0	10,1	6,4
	Oženjen/udata	24,6	16,9	10,5	6,2	28,7	20,0	12,5	7,6
	Udovac/udovica	21,6	15,0	9,3	5,1	26,8	18,3	11,0	5,9
	Razveden/razvedena	19,1	13,4	8,5	4,9	26,0	17,7	10,7	5,9
1990-1992	Neoženjen/neudata	19,2	13,5	8,7	5,3	22,4	15,3	9,5	5,2
	Oženjen/udata	24,3	16,7	10,6	6,3	29,1	20,4	12,9	7,6
	Udovac/udovica	20,8	14,3	9,0	5,0	26,6	18,3	11,1	5,9
	Razveden/razvedena	18,5	12,9	8,3	4,9	26,1	18,1	11,3	6,7
2001-2003	Neoženjen/neudata	20,1	14,1	9,3	5,6	22,8	15,4	9,2	5,2
	Oženjen/udata	24,3	16,8	10,6	6,2	28,7	20,1	12,5	6,9
	Udovac/udovica	21,0	14,6	9,2	5,3	25,3	17,9	11,5	6,5
	Razveden/razvedena	18,2	12,5	7,5	4,3	24,8	16,7	9,9	4,9
2010-2012	Neoženjen/neudata	21,2	14,4	8,9	4,8	24,1	16,2	9,5	4,9
	Oženjen/udata	26,2	18,3	11,8	7,0	30,4	21,5	13,6	7,4
	Udovac/udovica	19,7	13,4	8,1	4,4	30,4	21,9	14,1	8,1
	Razveden/razvedena	20,0	13,3	8,0	3,9	25,6	17,3	10,0	4,7

Izvor: Neobjavljeni rezultati rada na projektu *Istraživanje demografskih fenomena u funkciji javnih politika u Srbiji – III 47006*, Ministarstva prosvete, nauke i tehnološkog razvoja Republike Srbije, dobijeni ljubaznošću dr Ivana Marinkovića, autora istraživanja.
Napomena: Indikatori su izračunati za trogodišnji period oko popisnih godina.

Rezultati najnovijih istraživanja diferencijalnog mortaliteta stanovništva Srbije pokazuju da udovci, uz razvedene, imaju najkraće očekivano trajanje života (tabela 6). Na primer, u periodu 2010-2012, za stare 60-64 godine očekivano trajanje života udovaca (13,4 godine) i razvedenih (13,3) bilo je kraće za jednu godinu od OTŽ-a neoženjenih muškaraca (14,4) i čak pet godina kraće od OTŽ-a oženjenih (18,3). Redosled prema dužini očekivanog trajanja života muškog stanovništva po kategorijama bračnog statusa uglavnom je identičan za sve petogodišnje grupe, počev od starosti 25-29 godina.

Kod žena, za razliku od muškaraca, nije primetna tzv. zaštitna uloga braka. To se naročito odnosi na udate žene i udovice, koje uglavnom imaju istu dužinu očekivanog trajanja života. Štaviše, prema tablicama smrtnosti za 2010-2012, polazeći od starih 50-54 godine, najduže OTŽ imaju udovice, nešto kraće udate žene, a znatno kraće razvedene i neudate. Rezultati za stare 60-64 godine pokazuju da udovice mogu da očekuju još 21,9 godina života, udate žene za oko pola godine manje (21,5), razvedene za 4,5 godina manje (17,3), a neudate žene za preko 5,5 godina manje (16,2). Rod-

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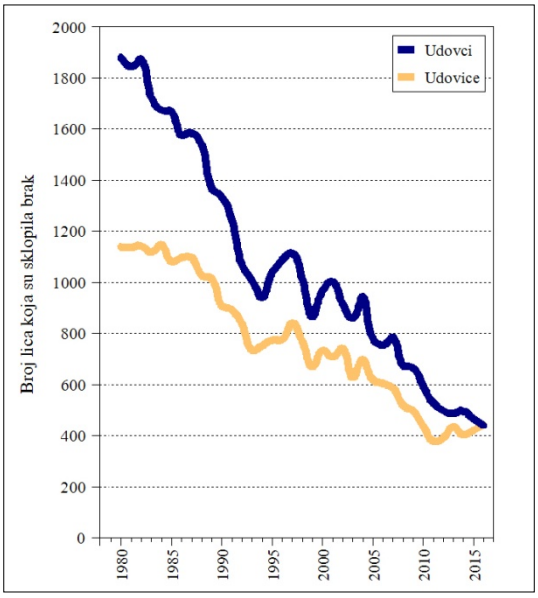
ne razlike su još naglašenije. Na primer, kod starih 60-64 godine, udovice mogu da očekuju da će živeti čak za 8,5 godina duže od udovaca (21,9 prema 13,4).

Velika razlika u dužini OTŽ između udovaca i udovica još jedan je činilac koji utiče na ukupno veći broj udovica nego udovaca. Promene ostvarene tokom prve decenije 21. veka (srednje trajanje života kod udovaca se skratilo, a kod udovica produžilo) uticale su na povećanje razlike u broju udovica i udovaca (tabela 1), odnosno zadržavanje vrlo visokog udela žena u ukupnom broju obudovelih (tabela 3).

Sve su ređa ponovna sklapanja braka obudovelih lica

U Srbiji već decenijama opada broj sklopljenih brakova, kako lica koja nikada nisu bila u braku, tako i razvedenih i obudovelih. Smanjenje je najveće među obudovelim licima, a posebno među udovcima. U Srbiji su 1981. bila sklopljena 57.563 braka, a 2016. godine 35.921, tj. za 38% manje. Gotovo identično smanjenje registrovano je među licima koja ranije nisu sklapala brak, dok je kod razvedenih to bilo manje intenzivno (29% kod muškaraca i 19% kod žena). Broj sklopljenih brakova kod udovaca bio je za preko 4 puta manji 2016. (440) nego 1981. godine (1.845), a kod udovica za dva i po puta manji (443 prema 1.137) (grafikon 2, tabela 7).

Grafikon 2.
Sklopljeni brakovi obudovelih u Srbiji, po polu, 1980-2016.



Izvor: Proračun autora na osnovu podataka iz *Demografske statistike* (odgovarajuće godine)

S obzirom na stalno povećanje broja obudovelih, smanjenje broja njihovih ponovo sklopljenih brakova rezultiralo je još izraženijim smanjenjem stope nupcijaliteta obudovelih, definisane u užem smislu kao udeo obudovelih lica koja su ponovo sklopila brak u ukupnom broju lica istog bračnog stanja. Kako ne postoje zvanične godišnje procene stanovništva Srbije prema zakonskom bračnom stanju, stopa nupcijaliteta obudovelih izračunata je samo za popisne godine. Tako je stopa nupcijaliteta udovaca 1981. (16,3‰) bila 4,8 puta veća nego 2011. (3,4‰). Vrednosti za udovice su znatno manje, ali je smanjenje takođe bilo vrlo ubrzano (sa 2,8‰ na 0,7‰) iako sporije nego u slučaju udovaca (tabela 7).

Tabela 7.
Sklopljeni brakovi i stopa nupcijaliteta obudovelih u Srbiji

	1981	1991	2002	2011	2016
	Broj sklopljenih brakova				
Ukupno – svega	57563	45145	41947	35808	35921
Obudoveli – svega	2366	1679	1333	785	764
Udovci	1845	1243	916	527	440
Udovice	1137	892	743	379	443
	Udeo sklopljenih brakova obudovelih lica u ukupnom broju svih sklopljenih brakova (%)				
Obudoveli – svega	4,1	3,7	3,2	2,2	2,1
Udovci	3,2	2,8	2,2	1,5	1,2
Udovice	2,0	2,0	1,8	1,1	1,2
	Sklopljeni brakovi na 1.000 starih 15 i više godina istog bračnog stanja				
Ukupno – muško	19,2	14,8	13,8	12,0	12,2
Ukupno – žensko	18,3	13,9	12,8	11,2	11,4
Udovci	16,3	10,9	6,3	3,4	/
Udovice	2,8	2,1	1,4	0,7	/

Izvor: Podaci popisa stanovništva i demografske statistike; proračuni autora.
Napomena: Podaci nisu potpuno uporedivi zbog različitih definicija ukupnog stanovništva.

Sve ređe ponovno sklapanje braka obudovelih lica, kao i vrlo niske vrednosti stope nupcijaliteta obudovelih, a naročito udovica, ukazuju da se povećanje brojnosti obudovelog stanovništva Srbije u periodu 1981-2011. u izvesnoj meri može objasniti i osobenostima njihovog bračnog ponašanja. Naime, vrlo niske stope nupcijaliteta obudovelih lica upućuju na neutralan uticaj ponovnog sklapanja braka na smanjenje broja udovaca, a posebno udovica, kao i na zadržavanje visokog udela žena u tom populacionom kontingentu.

Sklapanje novog braka među obudovelima, a naročito u poznim godinama, i naročito među ženama, nije česta pojava ni u drugim razvijenim zemljama. Brojne nacionalne studije, pokazale su da u vezi sa sklapanjem novog braka među obudovelima postoji pravilnost koja je vezana za pol i starost.

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U svakoj starosnoj grupi, veća je verovatnoća da brak sklopi udovac nego udovica, a sa povećanjem starosti, verovatnoća da obudoveli oba pola sklope brak opada. Takođe, što više vremena protiče posle gubitka partnera, sklapanje novog braka je sve ređe (Chamie, Nsuly, 1981; Smith *et al*., 1991; Stevens, 2002; Carr, 2004; Calasanti, Kiecolt, 2007; Bennett *et al*., 2013).

Strane studije pokazuju da na verovatnoću da obudovela osoba sklopi novi brak utiče veliki broj faktora. Od početnog, neophodnog uslova da postoji unutrašnja potreba i želja da se sklopi novi brak i procena da bi on doneo dobrobit, preko socioekonomskih, porodičnih i zdravstvenih prilika obudovele osobe, sve do raspoloživih mogućnosti da se upozna odgovarajući partner. Razlozi zašto udovice manje sklapaju brak su višestruki. S jedne strane, mogućnosti udovica da upoznaju odgovarajuću osobu i sklope novi brak su manje, jer su brojnije. S druge strane, njihova motivacija je slabija jer se bolje prilagođavaju životu bez partnera (Smith *et al*., 1991; van Grootheest *et al*., 1999; Wu *et al*., 2014). Istraživanja su potvrdila da žene obično poseduju razvijene veštine ostvarivanja značajnih bliskih emocionalnih veza, aktivnije su u pružanju podrške članovima porodice i drugim ljudima, to čine i posle smrti bračnog partnera, što im olakšava adaptaciju na udovištvo. Muškarcima je potrebno više vremena da prihvate gubitak, teže se prilagođavaju na samoću, a usamljenost, depresivnost i zanemarivanje fizičkog zdravlja su češće pratioci obudovelih muškaraca nego žena (Stroebe, Stroebe, 1983). To uslovljava i njihovu veću spremnost da sklope novi brak i češće to čine nego obudovele žene (Carr, 2004).

Kvalitativne studije stranih autora o stavovima obudovelih osoba poznijih godina prema sklapanju novog braka pokazale su bitne razlike između muškaraca i žena. Većina ispitivanih udovica nije želela novi brak ni romantičnu vezu. Iznosile su široku lepezu razloga. S druge strane, većina ispitivanih udovaca bila je vrlo zainteresovana da ostvari novu vezu ili brak, i uglavnom su iskazivali osećaj da ne mogu da žive sami i govorili o „sindromu prazne kuće" (Stevens, 2002; van den Hoonard, 2002; De Jong Gierveld, 2004; Calasanti, Kiecolt, 2007; Bennett *et al*., 2013; Carr, Boerner, 2013).

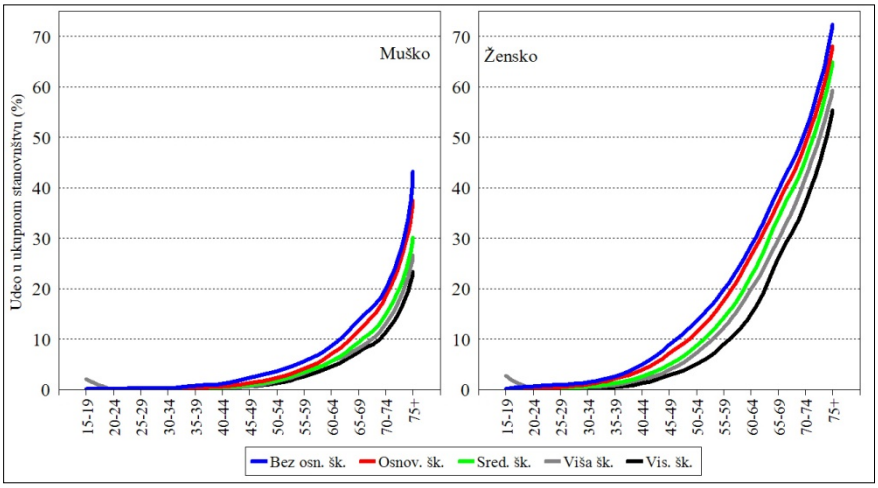
U nekim istraživanjima utvrđene su razlike prema obrazovanju u stopama sklapanja ponovnog braka među udovicama – viši obrazovni nivo praćen je nižim stopama sklapanja novog braka. Verovatno stoga što ima manje njima dostupnih muškaraca sa sličnim ili višim obrazovanjem, zato što muškarci s višim obrazovanjem mogu da odaberu žene svih obrazovnih nivoa, ali i zato što obrazovanije žene imaju manju potrebu da sklope novi brak, jer imaju veće mogućnosti da vode nezavisan i samostalan život (Smith *et al*., 1991).

Obudovelih najviše među neobrazovanima, a najmanje među najškolovanijima

Podaci Popisa 2011. ukazuju na jasnu starosnu i polnu diferenciranost bračne strukture stanovništva s obzirom na školsku spremu. Ona se odnosi na nejednake udele lica koja nikada nisu bila u braku, lica u braku, obudovelih i razvedenih lica posmatranih po nivou obrazovanja, i to po petogodišnjim starosnim grupama, kao i po polu. Postoji vrlo naglašena veza između udela pojedinih bračnih kategorija u ukupnom stanovništvu i dostignute starosti – s povećanjem starosti smanjuje se udeo celibatera, a povećava udeo obudovelih, dok se udeli lica u braku i razvedenih povećavaju do starosti od 45-54 godine, a kod starijih smanjuju sa starošću – ali i u visini učešća pojedinih kategorija s obzirom na bračni status i školsku spremu. I to, kako po starosti, tako i po polu.

Stope obudovelosti su najviše među najneobrazovanijima (bez završene osnovne škole), da bi s povećanjem obrazovnog nivoa, bez izuzetka, postajale sve niže dostižući minimalne vrednosti kod najškolovanijih (s visokom školskom spremom). To važi za oba pola i za sve relevantne starosne grupe (počev od starih 40-44 godina) (grafikon 3). Kao primer, navodimo vrednosti specifičnih stopa obudovelosti za tri starosne grupe: 60-64, 65-69 i 70-74 godine (tabela 8).

Grafikon 3.
Udeo obudovelih u Srbiji po starosnim grupama (%), prema školskoj spremi i polu, 2011.



Izvor: Proračuni autora na osnovu neobjavljenih konačnih rezultata Popisa 2011.

Najveće razlike su u vrednostima stope obudovelosti lica bez osnovne škole i onih s visokom školskom spremom, i to za sve tri starosne grupe. Za ukupno stanovništvo, stope obudovelosti izabranih starosnih grupa su za najneobrazovanije barem dvostruko veće nego za najobrazovanije.

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Prilikom razmatranja razlika u nivou obudovelosti muškaraca i žena po školskoj spremi treba ukazati i na rodne specifičnosti u pogledu udela lica u braku s obzirom na njihovu školovanost. Naime, kod muškaraca udeo oženjenih se povećava s povećanjem njihove školske spreme. Tako je kod svih uzrasta starijih od 30 godina udeo lica u braku najmanji među najneobrazovanijim, a uglavnom najveći među najobrazovanijim. Razlike su, kod pojedinih starosnih grupa, vrlo naglašene. Kod žena je situacija bitno drugačija – udeli udatih uglavnom opadaju s porastom obrazovnog nivoa, ali tek od grupe sa završenom osnovnom školom. Sledstveno, razlike u vrednostima indeksa obudovelosti muškaraca i žena s obzirom na školsku spremu su značajno naglašenije nego što je to slučaj s vrednostima stope obudovelosti (tabela 8). Međutim, treba naglasiti da kod oba pola vrednosti indeksa obudovelosti opadaju s povećanjem školske spreme.

Tabela 8.

Specifične stope obudovelosti po petogodišnjim starosnim grupama i indeks obudovelosti (60-74 godine) u Srbiji, po školskoj spremi i po polu, 2011.

Pokazatelj	Starost	Pol	Ukupno	Bez osnovne škole	Osnov. škola	Srednja škola	Viša škola	Visoka škola
Udeo obudovelih u ukupnom stanovništvu iste starosti (%)	60-64	sv.	15,5	22,1	18,8	13,3	12,2	8,9
		m.	6,1	8,6	7,0	5,6	5,5	4,5
		ž.	24,0	28,5	26,5	22,4	19,8	14,9
	65-69	sv.	24,4	31,9	26,8	20,3	17,1	14,2
		m.	10,3	13,7	11,6	9,4	8,2	7,4
		ž.	36,3	39,6	37,1	34,1	29,7	26,1
	70-74	sv.	34,8	42,0	35,9	27,7	24,8	20,1
		m.	16,6	20,0	18,5	14,8	13,0	11,3
		ž.	48,9	51,4	48,8	45,6	42,0	37,0
Indeks obudovelosti (broj obudovelih na 100 lica u braku)	60-64	sv.	21,3	32,2	26,2	18,0	16,2	12,0
		m.	7,4	11,2	8,5	6,7	6,6	5,4
		ž.	37,2	43,8	40,5	35,0	30,7	24,3
	65-69	sv.	36,5	51,3	40,8	29,1	23,6	19,5
		m.	12,7	17,5	14,2	11,5	9,7	8,9
		ž.	66,1	71,6	67,4	63,3	53,1	48,5
	70-74	sv.	59,9	79,0	62,6	43,8	37,7	29,5
		m.	21,4	26,7	24,2	18,9	16,1	14,1
		ž.	112,6	117,3	113,0	108,3	96,2	84,0

Izvor: Proračuni autora na osnovu objavljenih i neobjavljenih konačnih rezultata popisa stanovništva Srbije.

Razlozi diferenciranosti bračne strukture u zavisnosti od nivoa školske spreme su višestruki i pod uticajem različitih determinišućih činilaca, povezanih ne samo s modelom bračnog ponašanja (stupanje u brak, razlika u godinama bračnih partnera, raskid bračne zajednice), već i razlikama u nivou smrtnosti stanovništva prema školskoj spremi.

Povezanost obrazovnog nivoa i mortaliteta utvrđena je u mnogim evropskim zemljama. Smrtnost je veća u grupama s nižim obrazovanjem. To se objašnjava različitom distribucijom bihejvioralnih i materijalnih faktora u različitim obrazovnim grupama. Razlike se češće povezuju s materijalnim uslovima, koji neposredno utiču na nivo mortaliteta, ali i posredno, delujući na karakteristike ponašanja (Schrijvers *et al*., 1999). Istraživanja su pokazala da je i opadanje mortaliteta često bilo veće među osobama s visokim nego sa srednjim ili nižim obrazovanjem. Tako su se, na primer, u nordijskim zemljama tokom poslednje tri decenije 20. veka i relativne i apsolutne razlike u mortalitetu između pojedinih obrazovnih grupa povećavale (Shkolnikov *et al*., 2012).

Viši nivo obrazovanja, povezan s boljim socioekonomskim položajem, ima „zaštitni efekat" i na obudovelost. Među osobama s boljim obrazovanjem manja je verovatnoća da će obudoveti. Međunarodna poređenja pokazuju da svaka dodatna godina školovanja u izvesnoj meri smanjuje verovatnoću obudovelosti. Tako se može pretpostaviti da su mnogi obudoveli, zbog svog nižeg obrazovnog nivoa, bili u lošijoj finansijskoj situaciji i pre udovištva. Takođe, prosečna razlika u godinama između muža i žene je inverzna s obrazovnim nivoom, pa svaka dodatna godina školovanja smanjuje i razliku u godinama među supružnicima, što takođe smanjuje verovatnoću obudovelosti među osobama s visokim obrazovanjem (Biro, 2013).

U samačkim domaćinstvima najčešće žive obudoveli

Gubitak bračnog partnera najčešće znači i gubitak zaštitnog dejstva koje je brak imao, što ima poseban značaj u starosti, a naročito za muškarce. To posledično povećava i rizik od smrti, a najviše onih koje se mogu izbeći (Goldman, 1993; Lillard, Panis, 1996; Kolip, 2005; Jaffe *et al*., 2007).

Od sredine 20. veka, prosečna veličina domaćinstva u Srbiji se smanjuje; samo između 1991. i 2011. smanjena je sa 3,2 na 2,9 članova. Istovremeno, kontinuirano je povećavan broj i udeo samačkih u ukupnom broju domaćinstava (sa 365,4 hiljade ili 15,2% u 1991. na 555,5 ili 22,3% u 2011). Razlozi takve promene su mnogobrojni – promene porodičnih struktura, ubrzana transformacija modela bračnosti, smanjenje nivoa fertiliteta, itd. – ali najvažniji treba tražiti prvenstveno u intenzivnom starenju stanovništva. Takvom zaključku ide u prilog i stalno povećanje, inače vrlo visoke, prosečne starosti lica koja žive u jednočlanim domaćinstvima, sa

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60,0 (1991) na 61,9 godina (2011), kao i povećanje udela samaca starih 65 ili više godina, sa 44,5% (1991) na 50,1% (2011) (Predojević, 2006; Đurđev *et al*., 2015).

Rezultati Popisa 2011. u Srbiji potvrdili su postojanje veze između obudovelosti i života u samačkim domaćinstvima (tabele 9 i 10). Posmatrano po bračnom stanju, među samcima je najviše obudovelih lica, koja čine polovinu svih članova samačkih domaćinstava (tabela 9). Njihov udeo iznosio je vrlo visokih 50,5%, što je ipak nešto niže nego 1991. (53,1%).

Tabela 9.
Obudoveli samci u Srbiji (stari 15 i više godina), po polu, 2011.

	Svega		Muško		Žensko	
	Svega	%	Svega	%	Svega	%
Obudoveli (ukupno)	716843	100,0	154459	21,5	562384	78,5
Samci (ukupno)	555117	100,0	220274	39,7	334843	60,3
Samci (obudoveli)	278786	100,0	63104	22,6	215682	77,4
Udeo obudovelih samaca (%)						
- u ukupnom broju obudovelih	38,9		40,9		38,4	
- u ukupnom broju samaca	50,5		28,8		64,7	

Izvor: Proračuni autora na osnovu objavljenih i neobjavljenih konačnih rezultata popisa stanovništva.

Tabela 10.
Obudoveli samci u Srbiji, po starosti i polu, 2011.

	Broj obudovelih samaca			Struktura obudovelih samaca (%)			Udeo samaca u ukupnom broju obudovelih		
Starost	svega	muško	žensko	svega	muško	žensko	svega	muško	žensko
Ukupno	278786	63104	215682	100,0	100,0	100,0	38,9	40,9	38,4
Do 40	295	87	208	0,1	0,1	0,1	8,5	18,0	7,0
40-44	386	78	308	0,1	0,1	0,1	5,3	7,5	5,0
45-49	1442	261	1181	0,5	0,4	0,5	9,8	11,6	9,4
50-54	5068	831	4237	1,8	1,3	2,0	17,4	17,2	17,4
55-59	15333	2666	12667	5,5	4,2	5,9	26,7	25,3	27,0
60-64	29638	5437	24201	10,6	8,6	11,2	36,2	35,9	36,3
65-69	35053	6767	28286	12,6	10,7	13,1	42,3	42,4	42,3
70-74	55518	11453	44065	19,9	18,1	20,4	45,1	45,0	45,1
75+	136053	35524	100529	48,8	56,3	46,6	43,2	45,3	42,5

Izvor: Proračuni autora na osnovu objavljenih i neobjavljenih konačnih rezultata popisa stanovništva.

Obudoveli samci su bili znatno brojniji od samaca koji nikad nisu sklapali brak (28,0%) ili od onih koji su razvedeni (16,1%). Razlike su, i u ovom slučaju, vrlo naglašene, i to s obzirom na pol obudovelih samaca. Tako su, 2011. godine, udovci predstavljali „tek" nešto manje od 30% svih muška-

raca koji žive u jednočlanim domaćinstvima, dok je kod žena odgovarajući udeo udovica iznosio gotovo dve trećine (tabela 9). Tako velika razlika gotovo je isključivo rezultat izražene disproporcije u broju udovaca i udovica (1:3,4). Naime, prema Popisu 2011, udeli udovaca i udovica koji su živeli u jednočlanim domaćinstvima bili su gotovo identični (tabela 10).

Starosni sastav obudovelih lica koja žive u jednočlanim domaćinstvima odlikuje se izrazito velikim udelom najstarijih, a njihov broj se, po pravilu, povećava sa starošću. U 2011. godini, preko četiri petine obudovelih samaca su bile osobe stare 65 ili više godina, a gotovo svaki drugi obudoveli samac je bio star 75 ili više godina (tabela 10).

Starosni model samačkog života među obudovelima se najpre može okarakterisati kao rastući. Najmanji udeo samaca među obudovelima je kod svih petogodišnjih starosnih grupa mlađih od 50 godina (ispod 10% u svakoj), da bi se kontinuirano povećavao sa starošću i to, gotovo po pravilu, za po deset procentnih poena po petogodištu. Maksimalno učešće samaca od 42-45% je kod obudovelih starosti 65 ili više godina.

Posmatrano po polu, razlike u starosnoj strukturi obudovelih članova samačkih domaćinstava nisu posebno izražene. Kako među udovcima, tako i među udovicama, barem 4/5 su u starosti 65 ili više godina (85,2% odnosno 80,2%). Međutim, veći udeo najstarijih među udovcima koji žive kao samci nego među udovicama je tek u starosnoj grupi 75 ili više godina (56,3% prema 46,6%). Sumarno, u Srbiji su 2011. godine obudoveli samci bili stariji od obudovelih samica (prosečne starosti 73,7 odnosno 72,3 godine). Razlika je umerena, ali kod oba pola se radi o izrazito staroj populaciji.

Zaključak

Srbija se, sa udelom obudovelih u ukupnom stanovništvu od oko 12%, nalazi pri samom evropskom vrhu, a stopa obudovelosti muškaraca je najviša u Evropi. Stoga se nameće potreba detaljnijeg razmatranja dosadašnjih promena brojnosti i najvažnijih karakteristika kontingenta obudovelih. To posebno kada se ima u vidu da se radi, pre svega, o populaciji starih. U tom smislu, članak predstavlja jedan od retkih priloga koji se isključivo bavi obudovelim stanovništvom Srbije s demografskog aspekta.

U radu su na osnovu različitih demografskih pokazatelja analizirane promene u kretanju broja obudovelih, njihovoj starosnoj i polnoj strukturi, kao i obrazovna struktura, očekivano trajanje života, bračno ponašanje i zastupljenost samačkih domaćinstava među udovcima i udovicama. Rad se odnosi na period 1980-2016, s posebnim naglaskom na popisne godine. Broj obudovelih i njihovo učešće u ukupnom stanovništvu su se kontinuirano povećavali kod oba pola. Utvrđene starosne i polne specifičnosti

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obudovelih, preovlađujuće socioekonomske karakteristike sagledane preko obrazovne strukture, kao i odlike nupcijaliteta udovaca i udovica pokazuju sličnosti fenomena obudovelosti između Srbije i ostalih evropskih zemalja. Udeo obudovelih među starima je najveći, a 2011. godine u Srbiji je čak više od četiri petine obudovelih lica bilo staro 60 ili više godina. Prevaga udovica u apsolutnim i relativnim brojevima je kontinuirano višestruka. Sklapanje brakova obudovelih je sve ređe, naročito kod udovaca. Kada je reč o obrazovnoj strukturi, utvrđena je pravilnost da su stope obudovelosti najveće među neobrazovanima i da s porastom obrazovnog nivoa opadaju. Među licima koja žive u samačkim domaćinstvima najviše je obudovelih. Prema Popisu 2011, svaki drugi samac je bio obudovelo lice, pri čemu ih je oko 80% bilo staro 65 ili više godina.

Dobijeni rezultati, posebno u pogledu starosne i polne strukture, nivoa obrazovanja, veličine domaćinstva i nivoa smrtnosti, naročito udovaca, upućuju na zaključak o vulnerabilnosti kontingenta obudovelih lica. U radu su prikazani i nalazi iz relevantne strane literature koji ukazuju na najvažnije socijalne, psihološke, zdravstvene i druge rizike povezane sa obudovelošću, pre svega starih ljudi.

Može se pretpostaviti da će produženje očekivanog trajanja života učiniti da ljudi sve duže žive u paru, da će sa opadanjem privlačnosti braka biti i manje sklopljenih brakova, pa time i manje obudovelih, da će se obudoveli, da bi izbegli rešavanje pravnih pitanja vezanih za nasleđe i imovinu, sve češće odlučivati za život u vanbračnoj zajednici, a ne u novom braku. To su pojave zabeležene u nekim evropskim zemljama, ali je za Srbiju, ipak, izvesnija pretpostavka da će se ti procesi odvijati relativno sporo i da će, ujedno, biti nastavljeno povećanje broja udovaca i udovica. Kontinuirano povećanje broja obudovelih i njihovo veliko i rastuće učešće u ukupnom stanovništvu Srbije mogu, na makro planu, da prouzrokuju brojne socijalne, ekonomske, zdravstvene i demografske posledice koje bi, u narednim decenijama, mogle biti još izraženije, posebno zbog neminovnosti nastavka intenzivnog starenja stanovništva. Takođe, dobijeni rezultati istraživanja izneti u radu mogu kreatorima javnih politika da predstavljaju polaznu analitičku osnovu za definisanje mera i aktivnosti, posebno onih koje se tiču zdravstvenih, socijalnih i drugih institucija sistema usmerenih na stare, s fokusiranjem pažnje na obudovela lica, a naročito na udovce.

Značaj kontingenta obudovelog stanovništva Srbije, ne samo s demografskog gledišta, upućuje na potrebu detaljnijih kvantitativnih istraživanja, prvenstveno socioekonomskih karakteristika, porodične organizacije, ali i nivoa i specifičnosti morbiditeta i mortaliteta obudovelih lica. Uz to, ne bi trebalo zanemariti važnost dubinskih kvalitativnih istraživanja s jasno formulisanim teorijsko-konceptualnim okvirom.

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Literatura

BENNETT, K. M., ARNOTT, L., & SOULSBY, L. K. (2013). You're not getting married for the moon and the stars: The uncertainties of older British widowers about the idea of new romantic relationships. *Journal of Aging Studies* 27(4): 499–506. https://doi.org/10.1016/j.jaging.2013.03.006

BIRO, A. (2013). Adverse effects of widowhood in Europe. *Advances in Life Course Research* 18(1): 68–82. https://doi.org/10.1016/j.alcr.2012.10.005

BOBIĆ, M. (2003). Prekomponovanje braka, partnerstva i porodice u savremenim društvima. *Stanovništvo* 41(1–4): 65–91. https://doi.org/10.2298/STNV0304065B

BOYLE, P. J, FENG, Z., & RAAB, G. M. (2011). Does widowhood increase mortality risk?: testing for selection effects by comparing causes of spousal death. *Epidemiology* 22(1): 1–5. https://doi.org/10.1097/EDE.0b013e3181fdcc0b

CALASANTI, T., & KIECOLT, K. J. (2007). Diversity Among Late-Life Couples. *Generations* 31 (3): 10–17.

CARR, D. (2004). The Desire to Date and Remarry among Older Widows and Widowers. *Journal of Marriage and Family* 66(4): 1051–1068. https://doi.org/10.1111/j.0022-2445.2004.00078.x

CARR, D., & BOERNER, K. (2013). Dating after late-life spousal loss: Does it compromise relationships with adult children. *Journal of Aging Studies* 27(4): 487–498. https://doi.org/10.1016/j.jaging.2012.12.009

CHAMIE, J., & NSULY, S. (1981). Sex Differences in Remarriage and Spouse Selection. *Demography* 18(3): 335–348. https://doi.org/10.2307/2061001

DE JONG GIERVELD, J. (2004). Remarriage, unmarried cohabitation, living apart together: Partner relationships following bereavement or divorce. *Journal of Marriage and Family* 66(1): 236–243. https://doi.org/10.1111/j.0022-2445.2004.00015.x

DELBÈS, C., GAYMU, J., & SPRINGER, S. (2006). Les femmes vieillissent seules, les hommes vieillissent à deux. Un bilan européen. *Population & Sociétés* 419 (janvier): 1–4. link

DIGIACOMO, M., DAVIDSON, P. M., BYLES, J., & NOLAN, M. T. (2013). An Integrative and Socio-Cultural Perspective of Health, Wealth, and Adjustment in Widowhood. *Health Care for Women International* 34(12): 1067–1083. https://doi.org/10.1080/07399332.2012.712171

ĐURĐEV, B., ARSENOVIĆ, D., PENEV, G., ŠOBOT, A., STANKOVIĆ, B., & RADIVOJEVIĆ, B. (2015). Domaćinstva – broj i strukture. U V. Nikitović (ur.), *Populacija Srbije početkom 21. veka* (str. 264–292). Beograd: Republički zavod za statistiku Srbije. link

EUROSTAT (2016). Population by age, sex and legal marital status. Table (electronic resource). Luxembourg: Eurostat.

EUROSTAT (2017). Glossary: Marital status. Eurostat Statistics Explained (electronic resource). Luxembourg: Eurostat.

GOLDMAN, N. (1993). Marriage Selection and Mortality Patterns: Inferences and Fallacies. *Demography* 30(2): 189–208. https://doi.org/10.2307/2061837

GRUNDY, E. (2006). Ageing and vulnerable elderly people: European perspectives. *Ageing & Society* 26(1): 105–134. https://doi.org/10.1017/S0144686X05004484

JAFFE, D. H., MANOR, O., EISENBACH, Z., & NEUMARK, Y. D. (2007). The Protective Effect of Marriage on Mortality in a Dynamic Society. *Annals of Epidemiology* 17(7): 540–547. http://dx.doi.org/10.1016/j.annepidem.2006.12.006

KIRS (2001). *Registracija izbeglica u Srbiji, mart-april 2001*. Beograd: UNHCR, Komesarijat za izbeglice Republike Srbije, Visoki komesarijat Ujedinjenih nacija za izbeglice. link

KOLIP, P. (2005). The association between gender, family status and mortality. *Journal of Public Health* 13(6): 309–312. https://doi.org/10.1007/s10389-005-0129-7

LILLARD, L. A., & PANIS, C. W. A. (1996). Marital Status and Mortality: The Role of Health. *Demography* 33(3): 313–327. https://doi.org/10.2307/2061764

LUY, M. (2003). Causes of Male Excess Mortality: Insights from Cloistered Populations. *Population and Development Review* 29(4): 647–676. https://doi.org/10.1111/j.1728-4457.2003.00647.x

MARTIKAINEN, P., & VALKONEN, T. (1996). Mortality after the Death of a Spouse: Rates and Causes of Death in a Large Finnish Cohort. *American Journal of Public Health* 86(8):1087–1093. link

OKSUZYAN, A., JUEL, K., VAUPEL, J. W., & CHRISTENSEN, K. (2008). Men: good health and high mortality. Sex differences in health and aging. *Aging clinical and experimental research* 20(2): 91–102. https://doi.org/10.1007/BF03324754

PENEV, G. (2015). Struktura stanovništva prema polu i starosti. U V. Nikitović (ur.), *Populacija Srbije početkom 21. veka* (str. 130–165). Beograd: Republički zavod za statistiku Srbije. link

PENEV, G., & PREDOJEVIĆ-DESPIĆ, J. (2012). Prostorni aspekti emigracije iz Srbije. Tri „vruće" emigracione zone? *Stanovništvo* 50(2): 35–64. https://doi.org/10.2298/STNV1202035P

PERRIG-CHIELLO, P., SPAHNI, S., HÖPFLINGER F., & CARR, D. (2016). Cohort and Gender Differences in Psychosocial Adjustment to Later-Life Widowhood. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* 71(4): 765–774. https://doi.org/10.1093/geronb/gbv004

PHILIPOV, D., & SCHERBOV, S. (2016). Differences by union status in health and mortality at older ages: Results for 16 European countries. *Demographic Research* 35: 535–556. https://doi.org/10.4054/DemRes.2016.35.19

PETROVIĆ, M. (2011). Promene bračnosti i porodičnih modela u postsocijalističkim zemljama: zakasnela i nepotpuna ili specifična druga demografska tranzicija? *Stanovništvo* 49(1): 53–78. https://doi.org/10.2298/STNV1101053P

PREDOJEVIĆ, J. (2006). Domaćinstva i porodice. U G. Penev (ur.), *Stanovništvo i domaćinstva Srbije prema popisu 2002. godine* (str. 251–275). Beograd: Republički zavod za statistiku Srbije – Institut društvenih nauka / Centar za demografska istraživanja – Društvo demografa Srbije. link

RZS (2013). *Population: Marital status. Data by municipalities and cities*. 2011 Census of Population, Households and Dwellings in the Republic of Serbia, Book 5. Belgrade: Statistical Office of the Republic of Serbia. link

RZS (2014). *Complete life tables for the Republic of Serbia, 2010-2012*. Belgrade: Statistical Office of the Republic of Serbia. link

RZS (2016). *Demographic Yearbook 2015*. Belgrade: Statistical Office of the Republic of Serbia. link

SCHRIJVERS, C. T. M., STRONKS, K., VAN DE MHEEN, D. H., & MACKENBACH, J. P. (1999). Explaining Educational Differences in Mortality: The Role of Behavioral and Material Factors. *American Journal of Public Health* 89(4): 535–540. https://doi.org/10.2105/AJPH.89.4.535

SEIFARTH, J. E., MCGOWAN, C. L., & MILNE, K. J. (2012). Sex and Life Expectancy. *Gender Medicine* 9(6): 390–401. https://doi.org/10.1016/j.genm.2012.10.001

SHKOLNIKOV, V. M., ANDREEV, E. M., JDANOV, D. A., JASILIONIS, D., KRAVDAL, Ø, VÅGERÖ, D., & VALKONEN, T. (2012). Increasing absolute mortality disparities by education in Finland, Norway and Sweden, 1971-2000. *Journal of Epidemiology and Community Health* 66(4): 372–378. http://dx.doi.org/10.1136/jech.2009.104786

SHOR, E., ROELFS, D. J., CURRELI, M., CLEMOW, L., BURG, M. M., & SCHWARTZ J. E. (2012). Widowhood and Mortality: A Meta-Analysis and Meta-Regression. *Demography* 49(2): 575–606. https://doi.org/10.1007/s13524-012-0096-x

SMITH, K. R, ZICK, C. D., & DUNCAN, G. J. (1991). Remarriage Patterns Among Recent Widows and Widowers. *Demography* 28(3): 361–374. https://doi.org/10.2307/2061462

STEVENS, N. (2002). Re-engaging: New Partnerships in Late-Life Widowhood. *Ageing International* 27(4): 27–42. https://doi.org/10.1007/s12126-002-1013-1

STROEBE, M. S., & STROEBE, W. (1983). Who Suffers More? Sex Differences in Health Risks of the Widowed. *Psychological Bulletin* 93(2): 279–301. http://dx.doi.org/10.1037/0033-2909.93.2.279

STROEBE, M., SCHUT, H., & STROEBE, W. (2007). Health outcomes of bereavement. *Lancet* 370(9603): 1960–1973. http://dx.doi.org/10.1016/S0140-6736(07)61816-9

VAN GROOTHEEST, D. S., BEEKMAN, A. T. F., BROESE VAN GROENOU, M. I., & DEEG, D. J. H. (1999). Sex differences in depression after widowhood. Do men suffer more? *Social Psychiatry and Psychiatric Epidemiology* 34(7): 391–398. https://doi.org/10.1007/s001270050160

VAN DEN HOONARD, D. K. (2002). Attitudes of older widows and widowers in New Brunswick, Canada, towards new partnerships. *Ageing International* 27(4): 79–92. https://doi.org/10.1007/s12126-002-1016-y

WU, Z., SCHIMMELE, C. M., & OUELLET, N. (2014). Repartnering After Widowhood. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* 70(3): 496–507. https://doi.org/10.1093/geronb/gbu060

Goran Penev[*], *Biljana Stanković*[*]

Widowed Persons in Serbia: Change in Number and General Demographic Characteristics (1980-2016)

S u m m a r y

Widowed persons represent a vulnerable population group, especially because the loss of a spouse is usually a part of old people's experience. In old age, people are typically faced with multiple constraints, related to health, financial resources, family and other social relationships. Changes that accompany the death of spouse and widowhood are generally long-term and largely negative for many widowed persons.

With advanced population ageing, the share of the widowed in the total population is increasing, and this is also true for Serbia. With a crude widowhood rate of 11.7% in 2011, Serbia is at the very top of the list of European countries and has the highest widowhood rate of men (5.2%). However, widowhood primarily affects women, and 78% of the widowed in Serbia are widows.

This paper analyses the widowhood in Serbia from 1980 to 2016. The main objective is to describe the trends and characteristics of widowed persons in this period. This article is primarily based on the analysis of previously unpublished census results and vital statistics data.

In Serbia, in the period of 1981-2011, there was a continuous increase in the number of widowed persons and in 2011 it was 37.5% higher than 30 years before. Furthermore, the share of the widowed in the total population increased significantly (from 8.5% to 11.7%). Widowhood is considerably more present among women and the elderly. More than four fifths of the widowed are older than 60 years, and the values of all used demographic indicators of widowhood are three or four times higher in women. The authors mention the noticeable decrease in remarriage among widowed persons and a major decrease in the nuptiality rate of the widowed, especially among widowers. The observed educational structure of the widowed shows a higher percentage of persons with a lower educational level. Another significant finding was that the widowed represent half of the total number of people who live alone in one-person households. Among them, more than four fifths are 65 years old or older, and a full half are older than 75.

The authors concluded that further quantitative and qualitative studies of demographic, but also social, psychological, health and other aspects of the widowed in Serbia are needed. Additionally, these results can represent the analytical basis for policy makers to identify needs and define different measures and actions directed towards the elderly, among which widowed persons, and especially widowers, are particularly vulnerable categories.

Keywords: *widowhood, elderly, gender differences, one-person households, population ageing*

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PRIKAZI

XXVIII SVETSKA POPULACIONA KONFERENCIJA

Kejptaun, Južnoafrička Republika, 29. oktobar – 3. novembar 2017.

Međunarodna unija za proučavanje stanovništva (International Union for the Scientific Study of Population), ima 1.000 članova iz 121. zemlje, organizuje svake četvrte godine demografsku konferenciju na koju se pozivaju pre svega istraživači, ali i kreatori politika i lica koja rade na terenu. To je globalni demografski forum na kome se saopštavaju rezultati najnovijih istraživanja vezanih za populacione izazove i diskutuju moguća rešenja za njihovo ublažavanje. XXVIII svetska populaciona konferencija je održana u Kejptaunu, Južnoafrička Republika, od 29. oktobra do 3. novembra 2017. godine.

Skupu je prisustvovalo oko 1.900 učesnika iz preko 100 zemalja. Prema Biltenu Unije posvećenom konferenciji, na skupu je saopšteno 1.704 rada od 4.752 prijavljenih. Prvi put na konferencijama ovog tipa su dva recenzenta ocenjivala svaki rad. Radovi su selektovani na osnovu tako dobijene prosečne ocene. Oni su raspoređeni u 127 sesija izlistanih u okviru 19 tema. Najveći broj prihvaćenih radova (30) se odnosio na temu definisanu kao *Zdravlje, mortalitet i dugovečnost*, a najmanji broj radova (4) na temu pod nazivom *Kultura, religija, jezik i demografski relevantno ponašanje*.

Na konferenciji su pokrenute sledeće teme:

1. Starenje i međugeneracijski odnosi
2. Biodemografija
3. Deca i mladi
4. Kultura, religija, jezik i demografski relevantno ponašanje
5. Demografske metode i podaci
6. Obrazovanje i radna snaga
7. Fertilitet
8. Rod i stanovništvo
9. Zdravlje, mortalitet i dugovečnost
10. Istorijska demografija
11. HIV/SIDA i polno prenosive infekcije
12. Brak, porodice i domaćinstva
13. Migracije i urbanizacija

14. Stanovništvo i razvoj
15. Stanovništvo i ljudska prava
16. Stanovništvo i životna sredina
17. Seksualno i reproduktivno zdravlje
18. Prostorna demografija
19. Populacija i demografski izazovi Afrike

Na ovoj konferenciji je prvi put data mogućnost istraživačkim institucijama da organizuju sesiju na temu koja je njima specijalno bitna. To pravo su iskoristili, između ostalih, Gutmaher institut, Maks Plank institut i francuski Nacionalni institut za demografske studije. Na ovaj način je organizovano jedanaest dodatnih sesija.

Takođe, pre, za vreme i posle konferencije organizovano je pet treninga za učesnike konferencije koji su se ticali primene novih metodologija u demografiji.

Na otvaranju konferencije govorili su Anastasia Gage (predsednica Unije), Natalia Kanem (izvršna direktorka Populacionog fonda Ujedinjenih nacija), Pali Lehohla (direktor Statistike Južnoafričke Republike) i Tukufu Zuberi (profesor sa Univerziteta u Pensilvaniji). Sa otvaranja konferencije treba posebno izdvojiti poruke koje su učesnicima skupa uputili predsednica Unije i profesor Zuberi.

Anastasija Gage je istakla da očekuje da diskusija na konferenciji bude fokusirana na zapostavljena važna pitanja kao što su zapošljavanje starijih radnika, ostvarivanje potencijala vulnerabilnih grupa, lečenje HIV pozitivnih osoba i obolelih od SIDE, planovi vezani za kontinuirani rast gradskog stanovništva i zaštita zajednica od negativnog uticaja klimatskih promena.

Profesor Zuberi je istakao da je snaga Afrike u brojnosti njene populacije, ali da je potrebno značajno poboljšati kvalitet života ljudi. On je takođe dao pregled brzog razvoja demografije na ovom kontinentu i podvukao koliko je to značajno za sprovođenje odgovornih javnih politika u afričkim zemljama.

Devet sesija na programu je bilo posvećeno temama relevantnim za populaciju Afrike. *Dani Afrike* na programu konferencije otvoreni su sesijom "Afrički popisi stanovništva u 2020: da li će biti najbolji do sada", a završeni su plenarnom sesijom "Izazovi koji se tiču demografskih podataka vezanih za izveštavanje o ciljevima održivog razvoja Afrike".

Pre ove plenarne sesije koju je organizovao Nacionalni komitet oformljen za ovaj skup, održane su još tri plenarne sesije na konferenciji. Prvu plenarnu sesiju je organizovao Populacioni fond Ujedinjenih Nacija pod nazivom *Podaci za razvoj: Jačanje nacionalnih kapaciteta za demografske podatke*, a zatim je Unija organizovala dve debate: *Međunarodne migraci-*

je u XXI veku: Da li bi granice mogle biti otvorenije? i *Da li je nizak fertilitet dobar za porodicu, odnose među polovima i društvo?*

Čini se da je najvažnija poruka prve plenarne sesije da istraživači treba da ulože istu količinu energije da bi se rezultati do kojih su došli pretvorili u akcije, kao i u samo istraživanje. U taj proces je bitno da demografi uključe veći broj lica koja učestvuju u donošenju odluka, sve relevantne kreatore politika, eksperte iz srodnih disciplina i obrazovanu javnost.

U debati vezanoj za stepen otvorenosti granica za migrante učestvovala su četiri pozvana govornika. Dve govornice, Aris Ananta sa indonežanskog univerziteta i Alicia Adsera sa Univerziteta u Prinstonu, dobile su zadatak da govore u prilog većoj otvorenosti granica. Njihovi glavni argumenti su se odnosili na pozitivne strane spoljnih migracija za sve zemlje uključene u migratorni lanac, kao i da kapital i digitalno doba u kome živimo ne poznaju državne granice. Nasuprot, profesor Piter MekDonald (Univerzitet u Melburnu) i dr Blesing Mberu (Afrički centar za proučavanje stanovništva i zdravlja u Keniji) su branili stav o potrebi da granice budu zatvorenije za migrante u cilju efikasnijeg sprovođenja programa koji se tiču useljenika. U diskusiji koja je sledila najčešće se isticala potreba o dubljem izučavanju uzroka i posledica emigriranja/imigriranja na mikro i makro nivou.

Druga debata koju je organizovala Unija je bila najposećenija sesija na konferenciji. U razgovoru na postavljeno pitanje da li je nizak fertilitet dobar ili loš za porodicu, odnose između žene i muškarca i društvo, učestvovala su četiri pozvana panelista i veliki broj prisutnih. Iznosili su se uobičajeni argumenti za i protiv fenomena nedovoljnog rađanja pre svega iz demografskog, zdravstvenog i feminističkog ugla. U burnoj diskusiji korišćeni su u i lični primeri kao argumenti za izneseni stav, što je retko za naučni skup. Podjednaku podršku prisutnih na debati izraženu dužinom aplauza dobio je učesnik koji je otac desetoro dece i protivnik je kontrole rađanja i delegat koji je odrastao u porodici sa desetoro dece i zalaže se za nizak fertilitet.

Zatvaranje konferencije je obeležilo kratko obraćanje učesnicima Ane Gotje sa Holandskog interdisciplinarnog demografskog instituta koja je dobila specijalnu nagradu Unije i fondacije Matej-Dogan za komparativna istraživanja u demografiji. Nasuprot očekivanjima ona nije govorila o nalazima, dometima i ograničenjima istraživanja *Odnosi među polovima i odnosi među generacijama* čijim sprovođenjem rukovodi. Profesorka Gotje je govor povodom nagrade koju je dobila posvetila demografskom izazovu koji se tiče merenja i kvantifikovanja nove socijalne norme o dobrom roditeljstvu, odnosno očekivanjima savremenog društva od roditelja, testiranju definisane metodologije u različitim sredinama i grupama,

kao i boljem razumevanju uticaja ove norme na odluku parova o rađanju dece.

Unija je posle konferencije sprovela *online* istraživanje u cilju evaluacije skupa i u tome je učestvovalo preko 800 članova ove organizacije. Prema Izveštaju Unije o konferenciji, XXVIII svetska populaciona konferencija je predstavljala pozitivno iskustvo za veliku većinu učesnika. Utvrđen je viši udeo onih koji su naučni kvalitet konferencije ocenili sa najvišom ocenom u odnosu na relevantan udeo registrovan posle prethodnih svetskih konferencija održanih u Buzanu (2013. godine) i Marakešu (2009. godine). Gotovo 80% anketiranih je izjavilo da će preporučiti svojim kolegama učešće na narednoj svetskoj populacionoj konferenciji.

XXIX svetska populaciona konferencija će se održati 2021. godine, drugi put u Indiji, ovoga puta u Hajderabadu.

Mirjana Rašević

PORUKE DEMOGRAFA KREATORIMA JAVNIH POLITIKA U SRBIJI

Okrugli sto, Centar za demografska istraživanja Instituta društvenih nauka

Beograd, 14. novembar 2017.

Demografski izazovi su visoko pozicionirani u globalnom kontekstu, a istraživači iz sfere nauke o stanovništvu neizostavni konsultanti prilikom traženja odgovora na populacione probleme. Poslednjih decenija evidentna je pojačana zainteresovanost istraživača iz celog sveta, demografskih asocijacija i priznatih institucija za akutne populacione izazove, kao što su nedovoljno rađanje, demografsko starenje, migraciona pitanja i dr. Na skupovima i konferencijama se, između ostalog, raspravlja o determinističkoj osnovi niskog i nedovoljnog rađanja, eventualno novim rešenjima u populacionoj politici prema fertilitetu i mortalitetu, o konceptu aktivnog starenja i o migracionim izazovima.

Populaciona pitanja se u sve većoj meri prepoznaju kao prioritetna i na brojnim naučnim skupovima i političkim agendama u Srbiji. Centar za demografska istraživanja Instituta društvenih nauka iz Beograda organizovao je 14. novembra 2017. godine, u Velikoj sali instituta, okrugli sto pod nazivom *Poruke demografa kreatorima politika u Srbiji*. Motiv organizovanja ovog skupa proizilazi iz potrebe da se prikažu najvažniji rezul-

tati projekta *Istraživanje demografskih fenomena u funkciji javnih politika u Srbiji* u svetlu poruka donosiocima odluka. Projektni tim čine istraživači različitog profesionalnog profila iz tri akademske ustanove – Centra za demografska istraživanja Instituta društvenih nauka, Geografskog fakulteta i Fakulteta organizacionih nauka Univerziteta u Beogradu, analogno čemu je prikazan spektar različitih tema i oblasti, preciznije 14 sažetaka. S obzirom da su predstavljena najznačajnija postignuća projekta, u mogućnosti smo da steknemo uvid u krucijalne demografske odlike Srbije, u inovacije u istraživanjima i smernice za unapređenje analize demografskih podataka, ali i da sagledamo razvoj i perspektive nauke o stanovništvu u Srbiji.

Navedena pitanja kontinuirano privlače pažnju, ne samo naučne, već i najšire javnosti u Srbiji, stoga ne iznenađuje činjenica da su upravo ovi segmenti činili uvodni deo skupa. U javnosti se, u sve većoj meri, prepoznaje značaj uloge demografa u ispitivanju tendencija, determinističkog sklopa, implikacija i predviđanja populacionih izazova. Istraživači iz sfere nauke o stanovništvu konsultuju se i prilikom definisanja javnih politika, poput socijalne, penzione, obrazovne, zdravstvene i drugih. Značaj populacionog faktora za funkcionisanje države potvrđen je i formiranjem Kabineta Ministra bez portfelja zaduženog za demografiju i populacionu politiku (30.09.2016.).

Sve veća potreba za prisutnošću demografa u suočavanju sa populacionim izazovima inspiriše ih da konstantno tragaju za novim teorijsko-metodološkim saznanjima. U tom kontekstu, posebno su istaknuti: prospektivna starost kao metodološka inovacija prilikom proučavanja populacionog starenja; efikasnija povezanost i integracija demografije i informatike; prepoznavanje moći socijalnih mreža i interneta u cilju boljeg predstavljanja demografskog sadržaja i kao spone raznovrsnih aktera kako bi se unapredila demografska istraživanja. Takođe su predstavljene prednosti i nedostaci softverskih alata koji se trenutno primenjuju u Srbiji, zatim softverska rešenja koja su formirana tokom projektnog ciklusa, i na kraju preporuke u kom smeru je poželjno usmeriti edukaciju mladih demografa kako bi što uspešnije odgovorili na aktuelne potrebe prilikom analize demografskih podataka.

Aktuelni populacioni izazovi prisutni u Srbiji, poput nedovoljnog rađanja, depopulacije, intenzivnog demografskog starenja, negativnog migracionog salda i nepovoljnih pokazatelja smrtnosti stanovništva, mogu se oceniti kao jedan u nizu važnih motiva Vlade Republike Srbije da 26. decembra 2016. godine donese odluku o formiranju Saveta za populacionu politiku. U literaturi postoje različiti pristupi definisanju populacione politike. Međutim, ukoliko je percipiramo kao politički odgovor države na nepovoljne populacione trendove koji se sprovodi primenom mera u cilju do-

sezanja željene demografske situacije, jasno je da čini važan segment današnjice. U tom duhu, na okruglom stolu se postavilo pitanje zašto nam je potrebna nova paradigma populacione politike u Srbiji? Uporište za promenu dominantne paradigme pronalazi se u nedavno publikovanim rezultatima populacionih izgleda Srbije u 21. veku, koji su postavljeni kroz dva koncepta: posttranzicioni oporavak fertiliteta i model migracionog ciklusa. Tumačenje da nedovoljno rađanje ne mora nužno biti ekvivalentno negativnoj konsekvenci, kao i da društvo sve više valorizuje ulaganje u ljudski kapital, čini jednu drugačiju vizuru u percepciji niskog fertiliteta. Kao krucijalni preduslovi za budući demografski razvoj Srbije navode se: postavljanje realnih koncepata u strategijama, prepoznavanje značaja imigracionog faktora i ulaganje u ekonomski i obrazovni nivo populacije.

Promišljajući o novim rešenjima u politici prema rađanju, na skupu se diskutovalo da li ih je potrebno usmeriti u pravcu omogućavanja pojedincima da reprodukciju započnu u ranijim godinama života. Ovakav pogled u politici podsticanja rađanja u stranoj literaturi se definiše kao *tempo politike*. Skreće se pažnja da je značajno u kojoj starosti majke ostvaruju potomstvo i preporučuje se uvođenje ovog indikatora u sistem mera podsticanja rađanja.

Tokom poslednjih decenija širom Evrope, shodno promenama u fertilnom ponašanju i porodičnoj i bračnoj sferi, registrovano je povećanje udela vanbračnih rađanja. S obzirom da je aktuelna tendencija prisutna i u Srbiji, ova tema je predstavljena na skupu. Iako pripadamo grupi zemalja u kojima se ova pojava ocenjuje kao umereno prisutna, važno je proučavati vanbračni fertilitet sa demografskog aspekta i socijalnih konsekvenci, a i kako bi stekli inpute za definisanje adekvatnih mera socijalne i populacione politike. Kao značajno pitanje, imajući u vidu niz implikacija, nameće se sagledavanje zastupljenosti vanbračnih rađanja u okviru kohabitacija, odnosno kod samohranih majki. Rezultati analize pokazuju da je nizak i nivo rasprostranjenosti vanbračnih zajednica i procenat priznanja očinstva, što navodi na zaključak da je rađanje van braka zastupljenije među samohranim majkama.

Pažnja je posvećena i regionalnim razlikama u položaju žena u srpskom društvu, imajući u vidu da značaj unapređenja društvenog položaja žene ima važnih dodirnih elemenata sa fenomenom nedovoljnog rađanja. U tom kontekstu, ističe se neophodnost efikasnijeg usklađivanja roditeljskih i poslovnih obaveza, odnosno da je kod ovog izazova potrebna jasna podrška države. Rezultati regionalnih specifičnosti ženske populacije izloženi su u nekoliko tačaka, kroz prikaz polne, bračne, obrazovne i ekonomske strukture. Ovo pitanje tiče se i privatne i javne sfere, i za dostizanje adekvatnog nivoa neophodne su odgovarajuće politike, ali i promena stavova i shvatanja koji se tiču rodne ravnopravnosti kod oba pola.

Kako bi se formirao što precizniji uvid u aktuelnu demografsku situaciju i procese, na skupu su identifikovane i karakteristike mortaliteta stanovništva Srbije. Ukazano je na osnovne probleme u domenu smrtnosti stanovništva Srbije u evropskim okvirima, a to su: relativno visoke stope mortaliteta po starosti i nisko očekivano trajanje života pri živorođenju. Oslanjajući se na koncept „smrtnosti koju je moguće izbeći", istražen je značaj pušenja za smrtnost stanovništva Srbije. Pomoću *Peto-Lopez* metoda, moguće je kvantifikovati značaj i implikacije pušenja na zdravlje populacije. Prema procenama za period 2010-2012. godine, četvrtina ukupne smrtnosti kod muške populacije pripisuje se pušenju, dok je kod žena situacija povoljnija s obzirom da je za 9% smrtnih ishoda zaslužan ovaj faktor.

Poslednjih decenija, fenomen samoubistva se prepoznaje kao ozbiljan zdravstveni problem i reprezent mentalnog zdravlja populacije. Iz tog razloga, ovaj fenomen u Srbiji je sagledan tokom perioda 1950-2015. u svetlu uticaja opštih društveno-ekonomskih uslova. Rezultati ukazuju na rastuću tendenciju u kretanju broja samoubistava do početka 2000. godine, pri čemu su maksimalne vrednosti stope suicida bile zabeležene tokom 1990-ih, nakon čega je evidentno smanjenje i broja i opšte stope samoubistava. Kada se sagleda polna struktura, kako u Srbiji, tako i u većini zemalja u svetu, samoubistva su zastupljenija kod muškaraca. Na osnovu istraživanja, ustanovljeno je da je prevencija suicida moguća, pa se podvlači značaj donošenja nacionalne strategije za prevenciju samoubistava.

Migracioni izazovi se mogu svrstati među najvažnija i, uopšte uzev, intriganta pitanja na brojnim naučnim skupovima i konferencijama u Evropi i svetu. Migraciona dinamika, kako unutrašnja tako i spoljna, u određenoj meri se manifestovala na demografski profil Srbije. U tom pogledu, na skupu se, pre svega, diskutovalo o međunarodnim migracijama visokoobrazovanih kroz sagledavanje perspektive migracione politike u Srbiji. Navedene su metodološke barijere za potpunije istraživanje međunarodnih migracija, odnosno nepostojanje informacija o migracionim kretanjima između zemalja porekla i zemalja prijema, kao i o demografskoj strukturi migranata i njihovom teritorijalnom poreklu. Kao predlog za adekvatnije razumevanje migracija visokoobrazovanih lica navodi se implementacija kvalitativnih istraživanja. Na skupu su prikazani rezultati upravo jedne takve ankete sprovedene među visokoobrazovanim emigrantima poreklom iz Srbije u Kanadi i SAD, i niz predloga za eventualno rešavanje migracionih izazova.

Na okruglom stolu, predstavljeni su rezultati još dva istraživanja u sferi migracija. Prvo se odnosi na prisilne migrante sa prostora bivše Jugoslavije, a u drugom su ciljne grupe tražioci azila i iregularni migranti u Srbiji. Motiv za prikazivanje ovih rezultata predstavlja težnja da se sagleda nivo

socioekonomske integracije izbeglica, eventualne preporuke za njihovu integraciju, ali i monitoring i upravljanje migracionim tokovima. Analiza je pokazala da je politički odgovor u pogledu migracionih tokova neophodan. Potrebno je sprečavati ilegalne migracije i olakšati integraciju, koja zavisi od samih migranata i od društveno-ekonomskih mogućnosti u zemlji.

Proučavanje etnodemografskih karakteristika stanovništva tumači se kao važan segment, kako demografije, tako i drugih naučnih disciplina. Imajući u vidu da etnodemografski procesi, nastali usled kompleksnih i dinamičkih društvenih događaja u Srbiji, imaju značajnu ulogu na formiranje etničke karte, i ovoj temi je posvećena pažnja na skupu. Etnička heterogenost Srbije potvrđena je i rezultatima poslednje sprovedenog popisa stanovništva (2011), a nastala je dugoročnim delovanjem brojnih činilaca koji se mogu svesti na demografske i nedemografske. Flotantnost kod nekoliko etničkih grupa utvrđena je u gotovo svim popisima stanovništva Srbije (1948-2011), što se odražava na kvalitet dobijenih podataka i može dovesti do netačnih zaključaka. U tom kontekstu, njihova integracija u javne politike može imati šire društvene implikacije, što se posebno odnosi na manjinske zajednice koje u nedovoljnoj meri usmeravaju svoje zahteve za realizovanje osnovnih ljudskih i građanskih prava.

Dugi niz godina u fokusu interesovanja stručne i šire javnosti su mogućnosti ublažavanja aktuelnih prostorno-demografskih disproporcija Srbije i eventualne smernice delovanja. Tema ublažavanje prostorno-demografskih razlika Srbije takođe je podstakla diskusiju na okruglom stolu imajući u vidu niz alarmantnih demografskih izazova sa kojima se suočava stanovništvo Srbije. Decenijski negativne tendencije prirodnog obnavljanja stanovništva, stihijski migratorni tokovi i neuravnotežen regionalni razvoj, šalju poruku donosiocima odluka o neophodnosti sprovođenja efikasnih mera usmerenih na lokalni nivo. U procesu pronalaska mogućnosti ublažavanja prostorno-demografskih razlika, uobličeno je i realizovano više istraživačkih zadataka, koji su predstavljeni na skupu. Činjenica je da je prisutna prostorna neravnomernost – s jedne strane se nalazi beogradska aglomeracija, a s druge ostatak Srbije. Treba istaći da, iako je prestonica percipirana kao moćan pol koncentracije stanovništva i delatnosti, i njen demografski potencijal slabi, jer se populacija Grada Beograda od 1992. godine ne obnavlja prirodnim putem. Predlaže se širok spektar mogućih pravaca delovanja u narednom periodu u cilju uspostavljanja ravnomernijeg teritorijalnog razmeštaja stanovništva.

Na prethodno razmatranje se nadovezuje i završna tema ovogodišnjeg skupa, koja se odnosi na značaj i ulogu urbanih centara u procesu podsticanja ravnomernijeg regionalnog razvoja Srbije. Smatra se da bi implementacija policentričnog modela razvoja, odnosno promovisanje gradova

srednje veličine kao fundamentalnih nosilaca ravnomernijeg regionalnog razvoja, pružila efikasne rezultate. Kao prioritet, nameće se organizacija državne teritorije na principima demetropolizacije i decentralizacije, kako je i precizirano Prostornim planom Republike Srbije iz 1996. godine. U okviru ove problematike, prilikom ocenjivanja funkcionalnog značaja gradskih naselja, dnevne migracije se izdvajaju kao značajan okvir dometa uticaja urbanih centara.

Imajući u vidu populacione izazove sa kojima se Srbija suočava, kao poželjna tendencija u narednom periodu može se, pre svega, izdvojiti uspostavljanje konzistentne i efikasne povezanosti između istraživača u sferi nauke o stanovništvu i donosilaca odluka. S obzirom na značaj koji vremenski činilac ima u demografskim procesima, svako odlaganje reakcije produbljuje populacione probleme. Stoga se kao imperativ nameće traženje adekvatnog odgovora celokupnog društva Srbije, posebno akademske zajednice i relevantnih političkih aktera.

Ivana Magdalenić

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- *Članci iz časopisa:*

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TODARO, M. P., & SMITH, C.S. (2012). Economic Development (11th ed.). Boston: Mass Addison-Wesley.

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LUTZ, W., SANDERSON, W., & SCHERBOV, S. (2001). The end of world population growth. *Nature* 412 (6846): 543–545. DOI: 10.1038/35087589

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  - *Research reports, working papers:*

MULDER, T. J. (2002). Accuracy of the U.S. Census Bureau National Population Projections and Their Respective Components of Change. Washington DC: US Census Bureau, Population Division (Working Paper 50/02).

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