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Contents

ПОЗДРАВЕН ГОВОР НА ПРЕТСЕДАТЕЛОТ /PRESIDENT WELCOME SPEECH	v
Biljana APOSTOLOVSKA TOSHEVSKA	
ПОЗДРАВНИ ГОВОРИ / WELCOME SPEECHES	vii
Ana MILANOVIĆ PEŠIĆ	
PHYSICAL GEOGRAPHY	1
WATER REGIME AND DISCHARGES TRENDS OF THE RIVERS IN THE ŠUMADIJA REGION (SERBIA)	3
Ana MILANOVIĆ PEŠIĆ	
APPLICATION OF GEOSYSTEM APPROACH FOR LANDSCAPE FUNCTION ASSESSMENT AT THE LOCAL LEVEL	15
Julia VANTEEVA, Svetlana SOLODYANKINA	
ANNUAL AND SEASONAL VARIATIONS OF RIVER DISCHARGES IN THE SOUTH MORAVA RIVER BASIN (REPUBLIC OF SERBIA)	27
Marko LANGOVIĆ	
ANTHROPOGENIC INFLUENCE ON EROSION INTENSITY CHANGES IN THE KUTINSKA RIVER BASIN	37
Milena GOCIĆ, Nataša MARTIĆ BURSAĆ, Ljiljana STRIČEVIĆ, Mrđan ĐOKIĆ	
SPATIAL DISTRIBUTION OF THE ROCKS BY TYPE AND AGE ON THE TERRITORY OF NORTH MACEDONIA	45
Anita TODOROVA, Ivica MILEVSKI	
SOIL EROSION UNDER SIMULATED RAINFALL, UPPER PARȘETA CATCHMENT, NW POLAND	55
Mikołaj MAJEWSKI	
CHARACTERISTICS OF THE DISSOLVED MATTER BALANCE IN THE RÓŻANY STRUMIEŃ CATCHMENT IN POZNAŃ, POLAND, IN THE HYDROLOGICAL YEAR 2017	65
Maciej MAJOR, Maria CHUDZIŃSKA, Mikołaj MAJEWSKI, Małgorzata ZIĘBA	
REPRESENTATIVES OF THE HYDROLOGICAL HERITAGE OF HOMOLJE AREA (EASTERN SERBIA) - THE CURRENT STATE AND PERSPECTIVES	77
Đurđa MILJKOVIĆ, Ljupče MILJKOVIĆ, Mladen JOVANOVIĆ, Sanja KOVAČIĆ, Tin LUKIĆ	
VARIABILITY OF THROUGHFALL DEPOSITION IN THE PINE STANDS IN WESTERN POMERANIA, POLAND	89
Robert KRUSZYK	
THE IMPORTANCE OF EXTREME PROCESSES IN THE DEVELOPMENT OF THE WOLIN ISLAND CLIFFS COAST (POMERANIAN BAY - SOUTHERN BALTIC)	99
Marcin WINOWSKI, Andrzej KOSTRZEWSKI, Jacek TYLKOWSKI, Zbigniew ZWOLIŃSKI	
ENVIRONMENT	109
WATER POLLUTION AND POSSIBLE SOLUTIONS IN AP VOJVODINA (SERBIA)	111
Dejana JAKOVLJEVIĆ	
THE IMPORTANCE OF ECOTOURISM IN THE PROCESS OF IMPROVING ECOSYSTEM SERVICES IN SERBIA	123
Snežana ĐURĐIĆ, Sanja STOJKOVIĆ, Marija BELIJ	

PROTECTED AREAS IN THE REPUBLIC OF NORTH MACEDONIA THROUGH TIME AND THEIR PERSPECTIVE _____	133
Anita TODOROVA, Dragan KOLCHAKOVSKI, Olgica DIMITROVSKA	

GIS AND CARTOGRAPHY _____ **143**

SUBLIMATION OF GRAPHICATION AND GEOVISUALIZATION USING THE CARTOGRAPHIC METHOD _____	145
Jasmina M. JOVANOVIĆ, Dragica ŽIVKOVIĆ, Vladan GRBOVIĆ	

APPLICATION OF REMOTE SENSING FOR WILDFIRES BURN SEVERITY DETECTION - CASE STUDY OF TARA MOUNTAIN _____	157
Milan MILOVANOVIĆ, Miloš MANIĆ, Kristina KALKAN, Aleksandar RADIVOJEVIĆ	

MAPPING OF MARSHES AND WETLAND AREAS IN REPUBLIC OF N. MACEDONIA _____	165
Blagoja MARKOSKI, Ivan RADEVSKI, Svemir GORIN, Vladimir ZLATANOSKI	

SOCIO-ECONOMIC-DEMOGRAPHY _____ **179**

ANALYSIS OF CULTURAL ACTIVITIES OF THE SERBIA POPULATION BY TYPE OF SETTLEMENT _____	181
Ljubica RAJKOVIĆ, Vesna MILETIĆ STEPANOVIĆ	

MUNICIPALITIES IN NORTH MACEDONIA BY THE SCOPE OF WOMEN OF CHILDBEARING AGE _____	191
Marija LJAKOSKA, Mirjanka MADJEVIKJ, Biljana APOSTOLOVSKA TOSHEVSKA	

CONVERTING OFFICE BLOCKS TO AFFORDABLE HOUSING IN THE INNER CITY OF JOHANNESBURG: SOCIAL HOUSING OR A RUSE FOR INCLUSIVE HOUSING? _____	203
Nico KOTZE, Sanet CAROW	

SPATIAL DIFFERENTIATION OF THE AGE STRUCTURE OF A POPULATION IN BOSNIA AND HERZEGOVINA _____	215
Haris GEKIĆ, Aida BIDŽAN-GEKIĆ, Ranko MIRIĆ, Nusret DREŠKOVIĆ	

ETHNO DEMOGRAPHIC ASPECTS OF POPULATION AGEING IN EASTERN SERBIA _____	227
Aleksandar KNEŽEVIĆ, Nevena RADIĆ, Damjan BAKIĆ	

MIGRATION ON CROATIAN ISLANDS _____	239
Sanja KLEMPIĆ BOGADI, Sonja PODGORELEC	

AGE DIFFERENCES OF MARRYING COUPLES – THE CASE OF NORTH MACEDONIA _____	247
Marija LJAKOSKA, Mirjanka MADJEVIKJ	

SOME GEOGRAPHICAL AND DEMOGRAPHICALLY CHARACTERISTICS OF RUTHENIANS AND UKRAINIANS IN THE COUNTRIES OF FORMER YUGOSLAVIA _____	259
Milan LALIĆ	

VULNERABILITIES OF THE SMALL OPEN ECONOMIES: THE CASE OF NORTH MACEDONIA _____	271
Goran KITEVSKI, Dejan ILIEV	

MANAGING THE ECOTOURISM DEVELOPMENT: A CASE STUDY OF SERBIA'S NATURE RESERVE _____	279
Jovana BRANKOV, Tamara JOJIĆ GLAVONJIĆ, Željko BJELJAC	

THE ROLE OF INDUSTRY FOR ECONOMIC DEVELOPMENT OF SETTLEMENTS IN SOUTH BANAT'S DANUBE MUNICIPALITIES _____	289
Vojislav DEDANSKI, Danica ĐURKIN	

THE CONTRIBUTION OF DOMESTIC TOURISM TO THE BALANCED REGIONAL DEVELOPMENT OF SERBIAN PROVINCE OF VOJVODINA _____	299
Nikola TODOROVIĆ, Marina VESIĆ	

RECOMMENDATIONS FOR TOURISM DEVELOPMENT OF RURAL AREAS IN NORTH MACEDONIA	307
Nikola V. DIMITROV ¹ , Biljana PETREVSKA ¹ , Aleksandra TERZIĆ ²	
ANALYSIS OF TOURISM COMPETITIVENESS. THE CASE OF CULTURAL HERITAGE TOURISM IN NORTH MACEDONIA	317
Hristina DIMESKA TRAJKOVA	
SLOVAK CULTURAL HERITAGE IN VOJVODINA (SERBIA): MOTIVES, CONSTRAINTS FOR VISIT AND SUSTAINABILITY PERSPECTIVES	329
Sanja KOVAČIĆ*, Milica SOLAREVIĆ, Tatjana PIVAC, Ivana BLEŠIĆ, Tamara LUKIĆ, Đurđa MILJKOVIĆ	
FOREIGN TRANSIT TOURISM IN NORTH MACEDONIA: STATISTICAL ANALYSES AND DISCUSSION OF SALIENT ISSUES	341
Dejan ILIEV	
SPATIAL PLANNING	351
USE VALUE OF PRIMARY SCHOOL SPACE AS A POTENTIAL FOR LOCAL DEVELOPMENT OF MACRO REGIONAL CENTERS IN CENTRAL SERBIA	353
Vesna MILETIĆ-STEPANOVIĆ, Ljubica RAJKOVIĆ	
REGIONAL-GEOGRAPHICAL UNITS OF THE ADMINISTRATIVE SPACE OF KOSOVO AND METOHIJA	365
Bojana JANDŽIKOVIĆ	
ROLE OF SPATIAL PLANNING IN MANAGING MOUNTAIN AREAS IN SERBIA AND OTHER EUROPEAN COUNTRIES	373
Marijana PANTIĆ, Saša MILIJIĆ, Dejan S. DJORDJEVIĆ	
ANALYSIS OF THE DEVELOPMENT OF THE LEGISLATIVE FRAMEWORK FOR THE SPATIAL PLANS IN THE REPUBLIC OF NORTH MACEDONIA AS A BASIS FOR THE DEVELOPMENT OF THE LOCAL LEVEL	387
Zaklina ANGELOVSKA, Strahinja TRPEVSKI	
METHODOLOGY OF EDUCATIONAL GEOGRAPHY	399
THE IMPORTANCE OF THE PROJECT TEACHING FOR ACQUIREMENT OF GEOGRAPHICAL FUNCTIONAL KNOWLEDGE	401
Ivana ĐORĐEVIĆ, Ljiljana ŽIVKOVIĆ, Slavoljub JOVANOVIĆ	
PRINCIPLE OF NEW METHODS IN BILINGUAL TEACHING GEOGRAPHY: CASE STUDY - SREMSKA MITROVICA HIGH SCHOOL	411
Srđan TIMOTIJEVIĆ, Anđelija IVKOV DŽIGURSKI, Ljubica IVANOVIĆ BIBIĆ, Milica SOLAREVIĆ, Milena SEKULIĆ	
TRENDS IN EVALUATION OF GEOGRAPHIC KNOWLEDGE AND SKILLS IN THE REPUBLIC OF CROATIA	423
Biljana VRANKOVIĆ, Ružica VUK, Zoran CURIĆ	

ETHNO DEMOGRAPHIC ASPECTS OF POPULATION AGEING IN EASTERN SERBIA

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Abstract

The age structure of the population of Eastern Serbia is influenced by both components of population dynamics and inherited age composition, ie demographic inertia. The unfavorable age structure of the population of Eastern Serbia is the result of a long-term decline in fertility and its retention at a very low level, as well as specific socio-cultural patterns that are direct reflection on the model of reproduction for over a century. This paper examines the reasons and consequences of the current unfavorable demographic trends from the point of view of ethno demographic differentiation that points to the significantly unfavorable age structure of the Vlachs compared to the Serbian population. Demographic aging indicators such as average age, age group structure and ageing index unambiguously demonstrate the long-lasting and intense process of biological depopulation of the Vlach population, as well as the general demographic erosion of the population of Eastern Serbia that has become an irreversible process that can no longer be influenced by any measure of population policy.

Keywords: Age structure, Eastern Serbia, Vlachs, population dynamics, ethno demography

Introduction

Since the 19th century, territory of Eastern Serbia is characterized by a long-term decline of fertility and depopulation process, which has led to the early emergence of the aging process, which today represents one of the most significant demographic challenges in this area. As such a serious problem, especially from the perspective of the existence of a differential ethno-demographic development of the Serbian and Vlach populations, it is justified the scientific commitment to this topic. Continuity in adverse demographic trends, a low fertility rate that has lasted for more than a century, especially with big population emigration since the second half of the 20th century, has intensified the aging of the population, whose indicators imply irreversible demographic erosion of this part of Serbia. In scientific considerations, the influence of specific socio-cultural and general social norms of the ethnically heterogeneous population of Eastern Serbia occupies a special place in the study of demographic development. For example, the existence of marked differences in demographic trends between Serbian and Vlachs population of Eastern Serbia can clearly show the importance of ethno-demographic diversity, represented through historical and socio-cultural differences, for its overall demographic development. In the historical context, the territory of Eastern Serbia represented the contact place of different groups of people, and specific geographical position influenced its socio-cultural, economic and demographic isolation.

There are several divergent theories about the origins of Vlachs in Eastern Serbia. Most authors agree that Vlachs originate from the Romanized Thracian Tribals and Celtic Skordis. However, regarding the temporal framework of their migration to this territory, as well as the ethnonym of the word Vlach, there are huge scientific disagreements, ranging from the attempt of their complete Romanization and the establishment of equality in the Vlach and Roman ethnonyms, till emphasizing the importance of the frequency of migration during the Turkish period, by which was broken the continuity of the Old Balkan Vlachs with Eastern Serbia Vlachs (Knežević, 2010).

The characteristic ethno-demographic dichotomies of the Vlach and Serbian population in Eastern Serbia, as well as the early occurrence of the transition of fertility and depopulation in this area, have attracted a huge scientific attention. It should be noted that in 1866 Stevan Mačej pointed to the occurrence of fertility decline and depopulation in the Svrljig area. Numerous scientific works have focused on finding the reasons for the negative demographic tendencies in Eastern Serbia, especially by investigating the reasons for the intense decline and limitation of fertility in the Vlach population. On the other hand, there are the theories of Dragić M. (1974) and Vesić M. (1978) on the importance of infectious diseases spreading, primarily syphilis, in the 19th century precisely in those areas where fertility was the lowest. There is also the theory of Đorđević T. (1941), who points out that the population consciously has limited the fertility through the abortion so that limited agricultural land would not be divided and would not bring the misery and poverty to the family. He does not consider the phenomenon of birth limitation as an asocial behavior, but as socio-economic conditions in the agriculture. It is an indisputable fact that today there is an ethnic symbiosis between Vlachs and Serbs in this region, within which they increasingly accept Serbian socio-cultural heritage and language. This is supported by the fact that according to the results of contemporary censuses of Serbia, number and participation of the declared Vlachs is negligible, which was not the case in the censuses conducted in the Principality, that is, the Kingdom of Serbia, especially in the period 1850-1900. According to the census results from the 1866, Vlachs in the Principality of Serbia were the largest ethnic minority with a participation of about 10%, while at the beginning of the 20th century the population with Romanian native language in Serbia was about 120,000.

Data regarding the components of natural movement of the population from the end of 19th and the first half of 20th century indirectly indicate the existence of ethno-demographic diversity in the birth rate values of the studied region. The results showed that this region, together with the city of Belgrade, had significantly lower values than the national average. However, in Eastern Serbia there are areas populated by predominantly Vlach populations whose levels of natural increase were 1/5 lower than in the Pomoravlje area, which was predominantly populated by Serbs. During the inter-census period 1921 - 1931, the population of this area was increased by 17.4%, but more than half of the total growth was achieved only in the districts of Niš and Pomoravlje, where the participation of the Vlach population was negligible. The data at the lower territorial level allows us to determine that in some districts the growth rate was only a few percent, while in the Svrljig area already during the 1920s there were reports of population decline (Knežević, 2013). Therefore, the analysis of differences in demographic characteristics of the population by national or religious affiliation is of paramount importance in ethnically heterogeneous societies (Mihajlović, 2014). Through the work of many researchers it was pointed out the significant impact of ethnicity on fertility levels (Koytcheva&Philipov, 2008), mortality (Powers et al, 2006) or educational attainment (Spielauer, 2010). This shows that national or religious affiliation has an impact

both on the direct factors of the aging process (fertility and mortality) and on other socio-cultural characteristics of the population which can indirectly influence the intensification of the depopulation and ageing process. This influence is mainly manifested indirectly through the cross-social norms and codes that underlie the behavior of individuals within the family, local community or society as a whole (Radovanović, 2004).

The example of ethnic differentiation of Eastern Serbia clearly shows the impact of different social norms on the disparate demographic development of the Serbian and Vlach populations. Such differences in the components of population dynamics have a long term character; however, despite the reduction of socio-cultural differences and overall integration of the Vlach population into the Serbian ethnos, the differences are still present today. Therefore, we can say that in addition to demographics, the changes in the Vlach population were influenced also by some non-demographic factors, where the change in the attitude when declaring one's own nationality had a significant role. The ethnic flotation of Vlachs on the territory of Serbia represent a more recent phenomenon given that, based on the census statistics in the period 1834 - 1910, the population who spoke the Romanian mother tongue showed a hundred-year increasing trend without significant fluctuations in numbers. On the other hand, the censuses conducted during the period of socialist Yugoslavia recorded irregularities in the oscillation of the Vlach population and the reasons of their flotation were not easy to define and explain. Therefore, these data represent an unreliable basis for the further demographic research (Knežević, 2017). Therefore, the central question that challenges this paper is whether and how the restrictive reproductive model of the minority Vlach population have influenced the demographic trends of the majority Serb population in Eastern Serbia.

Methodology

This paper analyzes the ethno-demographic aspects of the Eastern Serbia population ageing. The standard indicators of population ageing such as average age, age groups, ageing index and more, are applied.

In this research, the data from census and vital statistics of the Republic Bureau of Statistics for the period from the sixties of the 20th century to the last conducted census in the Republic of Serbia, performed in 2011 was used. The vital statistics in the post-World War II period were subject to methodological changes, especially in the period 1965–1970, when the collection and publication of vital statistics data by nationality was suspended. This is especially important for all those national communities that have achieved certain demographic changes in the period, and especially for those who, during the time, have shown the flotation (Knežević, 2010).

The spatial scope of this research is 23 municipalities and cities Niš and Požarevac, or 6 districts, where Braničevo, Bor and Zaječar districts are fully included, while Pomoravlje, Niš and Rasina are only partially represented (Knežević, 2013). The complexity of defining Eastern Serbia's borders is supported by different opinions in the scientific world; they talk about what territory it really is and what Eastern Serbia's borders are. Thus Vasović (1965) considers Eastern Serbia as a special macro-region consisting of four mezo-regional environments, while according to Marković (1985) Eastern Serbia is a specific area that extends between Pomoravlje and the borders of Romania and Bulgaria. None of these regionaliza-

tions include Stig, Braničevo with transitional areas Danube towards the Pannonian Basin, then the Great and South Pomoravlje and Ponišavlje. In the broadest sense, classical regional geography considers Eastern Serbia as a region consisting of two parts, the Carpathian and Balkan regions of Serbia (Knežević, Vojković, 2015).

For this paper were used well-known methods of demographic analysis such as demographic, comparative and statistician method, as well as methods for considering of the directions and intensity of demographic aging. One of many contemporary methodological approaches to the study of demographic aging is certainly the stages of demographic age of G. Penev. This methodological approach to the study of the phenomenon of demographic aging of some space contains within itself all the characteristics of population dynamic. The advantage of this method is the existence of five different indicators (average age, participation of the population younger than 20 years, participation of population younger than 40 years, participation of population older than 60 years, and ageing index), by which should be avoided a wrong conclusion in case of a significant change in the age structure of the studied population and more precisely shown the vitality of the population. Based on the values of these indicators, populations according to the archived demographic age can be classified into seven different stages. Although this methodological approach more clearly indicates the level of population ageing, it cannot give us the answer to the question of the influence of specific demographic development of Vlach population on the Eastern Serbia population ageing process (Penev, 1995).

Therefore, it is necessary to develop a special methodological approach that can more precisely indicate the presence of the influence of the restrictive reproductive model of the minority Vlach population on the demographic trends of the total population of Eastern Serbia. Special attention should be paid to the problem of the ethnic flotant nature of the Vlach population within the census and vital statistics. The emergence of intense ethnic flotation from the 1953 Census to the present day, has a huge influence on the scientific precision regarding the actual number and participation of Vlachs in some municipalities. This consequently affects the possibility of examining the influence of the characteristic reproductive norms of the Vlach population on the demographic development of the majority Serbian population. A similar problem arises with the use of vital statistics data according to a nationality, since the hiding, in the case of Vlach, of real nationality during the vital events is even more expressed. This situation requires the development of an indirect methodological approach of measuring the demographic indicators of the Vlach population. The development of a methodological approach starts from the analysis of data from the 2002 Census according to the national characteristics of the population, which showed that the Vlachs make up the majority of the 42 settlements located within 10 municipalities of Eastern Serbia. Within these, 10 settlements from 8 different municipalities were selected, and compared to 10 settlements in the same municipalities, in which the Serb population has the majority¹. For the scientific precision, settlements with a similar number of residents were selected, and the data from the most recent 2011 census were used. With this approach should be shown whether there are discrepancies in the values of ageing indicators between the Serb and Vlach populations,

1 In this research we chose Vlach settlements Krivača (Golubac), Bukovska (Kučevo), Glogovica (Zaječar), Luka (Bor), Isakovo (Čuprija), Dubočane (Zaječar), Kladurovo (PetrovacnaMlavi), Brodica (Kučevo), Aleksandrovac (Negotin), Sige (Žagubica). Selected Serbian settlements are Vinci (Golubac), Kučajna (Kučevo), Koprivnica (Zaječar), Oštrej (Bor), Ostrikovac (Čuprija), Trnavac (Zaječar), Dubočka (Petrovac na Mlavi), Mišljenovac (Kučevo), Dupljane (Negotin) iKrupaja (Žagubica).

and whether the minority Vlach population has an impact on shaping the ethno-demographic development of the majority Serb population.

Problem of the research of ethno-demographic processes in a certain territory is also contributed by frequent administrative - territorial changes, which made the statistical comparison of the number of inhabitants at different territorial levels difficult. Thus, the biggest changes occurred in the 20th century, with the abolition of the districts, which represented territorial units that were valid until then, with the transition to municipalities since the 1961 census. Therefore, the period from the sixties of the 20th century provides adequate comparability of census data and does not require their subsequent reconciliation (Knežević, 2014). The application of subjective character in expressing nationality significantly influences the fluctuations in the number of certain ethnic groups, because official statistics collects and processes data regarding the “nationally declared” population, which does not represent an equal number of persons with the same ethnic origin (Knežević, 2011). Changes in the declaration of nationality have affected the quality and accuracy of the statistical records.

The central question that challenges this paper is whether and how the restrictive reproductive model of the minority Vlach population affected the demographic trends of the majority Serb population in Eastern Serbia, or, whether the differential fertility rates of the Vlach population affected the rapid ageing process in that population and that the reproductive norms could have been taken over by the majority Serb population.

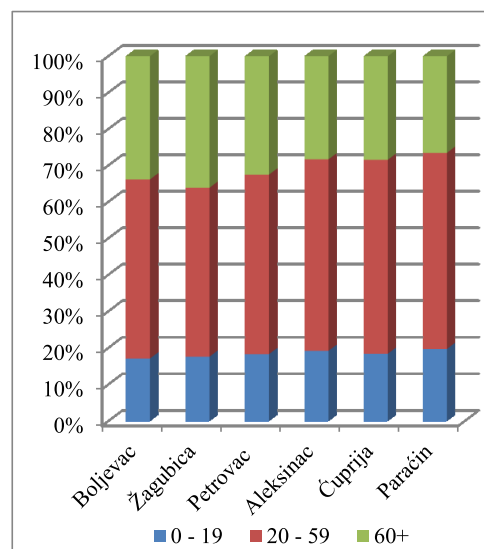
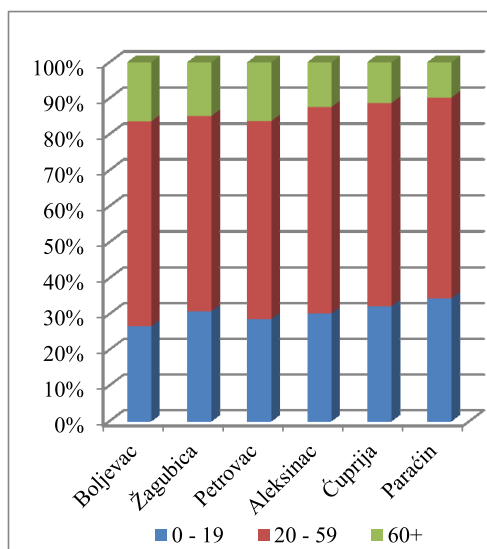
In this context, the expected result of this research is the existence of the influence of specific demographic development of the Vlach population on the demographic development of the total population, or the existence of a result that will prove that the reproductive model of the Vlach population has been accepted by the Serb population.

Results and discussion

Reproduction of the population insufficient for simple regeneration, negative rates of natural increase and demographic ageing of the population represent the most significant problems of demographic development of Eastern Serbia. It also needs to be considered the fact that it is a boundary territory whose ageing can cause additional geopolitical problems. Although the ageing process of the population is a normal process present worldwide (Turkulov et al, 2007), in 2011 the age structure of Eastern Serbia indicated a strong and continuous process of demographic ageing. Such an unfavorable age structure examines the economic sustainability of the territory.

Eastern Serbia stands out as location where the processes of depopulation and ageing began earlier than in the other parts of Serbia. Due to specific socio - cultural norms, which are especially expressed in the Vlach population in the form of birth control and introduction of a unique *system of one child* (Knežević, 2013). These factors influenced not only the depopulation of the studied area, but also the continuous decrease of the fertile contingent and unfavorable disproportion in the age structure in favor of the increasing old population. The population of the region of Eastern Serbia, in average, is 3.5 years older than the total Serbian population (45.7 years versus 42.2 years) and has over than 7% more inhabitants which are older than 60 years (24.7% vs. 31.8%). However, data regarding more intensive ageing compared to demographically aged Serbia conceal the existence of differences in

demographic development and intensity of population ageing between the Serbs and Vlachs of Eastern Serbia.



Graph1. Age groups of population of Eastern Serbia, by selected municipalities, 1961 Graph2. Age groups of population of Eastern Serbia, by selected municipalities 2011

Source: Republic Bureau of Statistics: Census of population 1961, Age and sex – results for settlements and Census of Population, Households and Dwellings 2011, Age and sex – results for settlements

The basic indicator of differences in the demographic development of two different national communities is the existence of differences in the intensity of population decline. Among the few municipalities with the most intensive population decline during the period 1961 - 2011, two of three are with the majority Vlach population (Boljevac and Žagubica). For the entire period 1961 - 2011, the region of Eastern Serbia experienced a decline of approximately 12%, within its 25 municipalities and cities only three experienced a population increase, while 1/3 of the municipalities lost about half of their population during the half-century. When analyzing the importance of ethno-demographic diversity on population movements, the results says that this region would certainly experience depopulation, and if we exclude the results for the four municipalities where Vlachs are the most concentrated, the decline would be lower, it would be about 7%.

Previously presented values indicate the existence and intensification of the demographic ageing process. Given the perceived differences between the Serbian and Vlach populations, we expect that the similar tendencies will emerge in indicators of the ageing process. To define the movement of the population ageing level, we used percent indicators of large age groups with an emphasis on the increase in the proportion of persons over 60 years. Data from the 1961 census showed that Eastern Serbia had a larger proportion of the old population than the average of the Republic of Serbia. Even then, significant intra-regional differentiation regarding the participation of the old people in the population was noticeable (Graph 1). In our analysis, data from the municipalities of Boljevac, Žagubica, Petrovacna Mlavi, Aleksinac, Čuprija and Paraćin were used. In the example of selected municipalities, it was shown that the ethnic diversity have a significant impact on the level of the ageing process. The municipality of Boljevac, which today has the most Vlachs population, had an eight percent lower number of young people comparing to than demographically the youngest

municipality in the area - Paraćin. According to the 2011 census, almost 32% of Eastern Serbia's population was older than 60 years. On the other hand, the number of young people from 0 to 19 years - 17.9% which is an indicator of a very progressive process of demographic ageing. Also, within the seven-stage scale of the demographic age stage, almost all of the municipalities of Eastern Serbia in 2011 are in the last, most unfavorable stage of the deepest demographic age. Also, the remaining four municipalities (Paraćin, Bor, Niš and Požarevac) are not distinguished by the positive values of the population ageing indicators, since they are at one stage before the deepest demographic age - the stage of deep demographic age.

Within the electoral districts, all municipalities experienced a doubling of the participation of the old population, while in the Paraćin municipality, the participation of persons over 60 years of age is tripled (Graph 2). Differences in the ageing process according to ethnicity were continued until the 2011 census, so that the two municipalities with the majority Vlach population have double more old population compared to the young population. In addition to the traditional forms of fertility restriction, a key cause of such disparities in the values of the participation of old people is the mass migration of Vlach population from the 1960s. In the period from 1961 to 2011, the migration balance of Eastern Serbia was negative and amounted -11163 inhabitants (Knežević, 2013). The actual number of persons who permanently left the studied region is actually much higher given that according to the 2011 census, 104493 persons were on temporary work and stay abroad, representing 11,37% of the total population of Eastern Serbia. In addition, the age structure of the migrant Vlach population is a major problem. Although the deterministic basis is that the migrant population is younger than the permanent population, in the example of Vlach, the difference is more than 15 years (Stanković, 2014). While the total Vlach population is one of the oldest nationalities in the territory of Serbia, the average age of its migrant population is approximately the national average for that type of population.

Figure 1. Population aging indicators in selected settlements with majority Serb and Vlach population, 2011

	Average age	Large age groups (%)			Ageing index
		0-19	20-59	60+	
<i>Eastern Serbia</i>	45,8	18,2	50,4	31,4	1,82
<i>Serbian settlements</i>	47,5	17,3	47,6	35,1	2,03
<i>Vlach settlements</i>	48,7	16,6	44,7	38,7	2,33

Source: Republic Bureau of Statistics, Population of the Republic of Serbia by sex and age, 2011

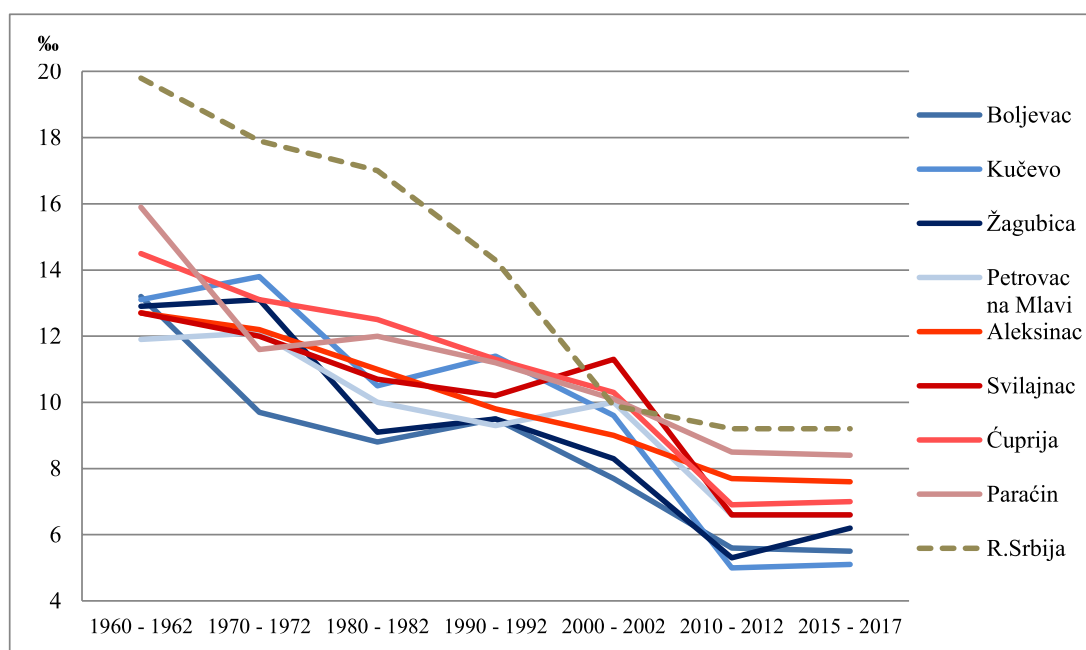
As it was pointed out in the methodological bases of this paper, the starting hypothesis and central question of the work is whether the restrictive reproductive model of the minority Vlach population has influenced the geographical trends of the majority Serbian population in Eastern Serbia. We could certainly come to a partial answer to that question by confirming the existence of a correlation between the values of the indicators of population growth and decline and the aging process, and the municipalities with the highest participation of Vlach population. The previous analysis was carried out at the municipal level, based on the date of census statistics of the participation of Serbs and Vlachs population. However, this type of analysis, due to the high flotation of the Vlach population, especially in the second half of the 20th century, can give a distorted picture of the cause-and-effect relationships of

demographic development and ethnic diversity. When trying to use the Vital Statistics data as a marker of the influence of the minority population on the demographic development of the majority, appears the problems of higher ethnicity hiding of Vlach population, this is why they cannot be used in the analysis.

For the above mentioned reasons, as a basic method of testing the central hypothesis, we will use the indirect inference method based on the data about demographic characteristics of the population of selected majority Serb and Vlach settlements, as detailed in the methodology. Due to specific socio-cultural norms, municipalities with a significant participation of Vlach population in continuity have a lower birth rate, and the fact that they were first to experience the processes of depopulation and demographic aging, clearly indicate an ethno-demographic impact in differentiated population development in an area such as Eastern Serbia (Figure 1). However, these data do not give us insight into whether the restrictive reproductive model of Vlachs had any effect on changing fertility norms, and later on the overall demographic development of the majority Serb population. Before analyzing the obtained results by using the indirect method, it should be emphasized that the Serb population of Eastern Serbia is predominantly populated by migrants from Kosovo and Metohija and Vardar, whose fertility norms were significantly higher than the Vlach's when immigrating to the studied area (Knežević, 2013). Further historical and demographic development of both ethnic groups caused different timelines and reasons for the beginning of the fertility transition, but during the time it was created the ethnic symbiosis and pervasion of cultural norms, and thus fertility models. However, a smaller number of papers dealt with the numerical demonstration of Vlach's influence on the demographic development of the Serbian population.

Indicators of demographic aging of selected Vlach and Serbian settlements of the municipalities of Eastern Serbia for 2011 shows that both the Serbian and Vlach populations are extremely old, and that the ageing process itself is extremely high today. In the case of settlements of both ethnicities, the participation of the young population is more than twice lower than the persons over 60, which clearly indicates that a possible process of intensive efforts to revitalize this area would be difficult and therefore impossible. When comparing the data of Serb and Vlach settlements, it can be concluded that there are differences and that the biggest are within the ageing index and participation of old population, while the difference between the young populations is significantly lower. From this it follows that the Serb population has significantly adopted the model of the demographic ageing of the Vlach population with very low participation of young people, while the existence of bigger differences in the participation of young people is actually a kind of demographic momentum, where a significant part of the middle-aged Vlach population had already entered the contingent of the old population, while in the case of Serbian, this process could be expected soon. The best proof of this is the complete homogenization of all Vlach settlements according to the participation of persons over 60 years of age, while in the case of Serb settlements this difference ranges from 29% in Kučajna to 42.8% of the total population of Dupljane. Central evidence of the impact of the restrictive reproductive model of the minority Vlach population on the demographic development of the majority Serb population is the existence of differences with respect to data for the whole of Eastern Serbia (Figure 1). The values of indicators of the ageing process in selected settlements, in which the Serb population constitutes the majority, are closer to the values of selected settlements in the same municipalities in which Vlachs constitutes the majority, than the total population of Eastern Serbia. This undoubtedly indicates that the minority Vlach population has an influence on the demographic development of the majority Serbian, which over time is increasingly accepting its type of

demographic development and within that also the socio-cultural specificities and norms of this minority ethnoses.



Graph 3. Birth rates in selected municipalities of Eastern Serbia, 1960 – 2017

Source: Republic Bureau of Statistics, Natural movement of population of the Republic of Serbia (data for municipalities), 1961 – 2010 and Municipalities and Regions in the Republic of Serbia 2011-2018

One of the key modifiers of the ageing process is the birth rate. Theoretical studies have shown that changes in reproductive standards and the rate of fertility were the decisive factor for changing the age structure of a population and causing the demographic ageing process of a population (Penev, 1997). This deterministic basis confirms the previously brought conclusion that the biggest influence of the minority Vlach population on the demographic development of the entire population was precisely through a specific, restrictive birth model, which was increasingly accepted by the Serb population over time.

The area of Eastern Serbia in the second half of the 20th century was affected by the process of biological depopulation, which indicated the beginning of the demographic transition. The decline in the overall birth rate in the period from 1960 to 2017 felt the entire Eastern Serbia region, however, some differences can be found among the selected municipalities. The cause of such early depopulation in this area also points to some different patterns of population behavior, such as the already mentioned “one child” system, which caused that the decline of birth rate first begin in those environments where the Vlach population is more numerous. It is not possible to know which of the factors had influence on the accelerated decline in birth rates in Eastern Serbia, but it can be observed a positive correlation of the declining birth rates in those municipalities where Vlachs represent a slightly bigger participation of the population (15 to 25%). The somewhat earlier onset of the fertility transition was particularly influenced by ethno-demographic factors and differences between ethnic, cultural, social, psychological, economic and other Vlach norms. During the time, there has been a decrease in birth rates between Serbian and Vlach municipalities. Also throughout the

whole period, it is noticeable that the Serbian municipalities significantly tend to the average birth rates of Vlachs population than the average birth rates for the entire Republic of Serbia (Graph 3). This is additional evidence of the influence of the ethno-cultural norms of the Vlach population on the Serb population. The results showed that a restrictive policy of limiting the birth of Vlachs has influenced on the processes of demographic ageing of the majority Serb population. An analysis pointing to the high intensity of the Vlach population's influence on the overall demographic development of Eastern Serbia is receiving particular attention, given that with an average age of 51.3 years and an aging index of 3.47, Vlachs represent one of the oldest nationalities in the territory of the Republic of Serbia. Such values indicate the irreversible process of Vlachs population development, and that no measure of population policy can influence the change of the trend.

Conclusion

Exploring the ethno-demographic characteristics of the population is a very complex task that requires a multidisciplinary methodological approach and finding additional data sources. This is especially pronounced when collecting demographic statistics by ethnicity. The cultural specificity of the Vlach population to conceal their nationality and frequent changes in declaring their ethnicity, caused that official statistics can only be considered correct with reserve, which affects the scientific precision in monitoring their demographic characteristics. Therefore, a special methodological approach of comparing the values of ageing indicators for ten Serbian and ten Vlach villages was used in the paper. In this paper, by using this methodological approach, the impact of restrictive reproductive norms of the minority Vlach population on the correction of the demographic development of the majority Serb population is demonstrated. The main influence in this was the retention of traditional socio-cultural norms of the civilization heritage. The preservation of such traditional norms is particularly specific for the Vlach population and has had a direct impact on the early onset of the fertility transition. One child system, traditional forms of abortion and contraception represent direct ways in which the Vlach population influenced their own reproductive norms, which during the time caused the process of biological depopulation of this area. Due to the long-term decline in fertility rates and their retention at a very low level, the population of Eastern Serbia today has a very unfavorable age structure with twice higher participation of the old compared to the young population.

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