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POPULATION AGING: CASE STUDY OF HUNTERS IN WESTERN BAČKA REGION

Abstract: This paper is based on the research of hunting as a dominant recreational activity of the population in Western Bačka region, i.e. the influence of four demographic tendencies: fertility, mortality, and the mean age of population, on the number and the age structure of the hunting associations' members in the municipalities of Apatin, Bač, Odžaci and Sombor. The article demonstrates that the mean age of members of these associations parallels the mean age of overall population.

Key words: demographic transition, population ageing, recreation trends, hunting, Western Bačka Region, Vojvodina Province, Serbia.

Извод: Овај рад се базира на проучавању лова као доминантне рекреативне активности становништва Западне Бачке, односно утицаја четири демографска тренда: наталитета, морталитета, природног прираштаја и средње старости становништва на број и старосну структуру чланова ловачких удружења општина Апатин, Бач, Оџаци и Сомбор. Резултати истраживања показују да се просечна старост ловаца, чланова ловачких удружења Западне Бачке, паралелно повећава са повећањем просечне старости становништва Западне Бачке.

Кључне речи: демографска транзиција, старење популације, лов, Западна Бачка, Војводина, Србија.

Introduction

Population ageing features almost all modern societies. It does not only imply the increase of mean population age but also causes numerous qualitative changes in life quality, or in leisure time organization. The impact of social groups on recreation behaviour and preferences is well recognized (Stokowski, 1990).

In the last few years there has been great interest in natural areas at the world tourism market. About 75% of the total world tourism demand, which is over 2.5 billion of participants, is engaged in such sort of outdoor activities (Marić, 2003). People increasingly direct their travels towards calm, recreation,

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organic food, unpolluted air and water in search of quality relaxation they are deprived of in their everyday life, especially in stressful urban environment, where they live surrounded by noise and smog (Maletin, 2005). On the other hand, rural population has less choice of activities to take part in during their leisure time (especially indoor activities), as compared to urban population choice of activities such as cinema, theatre, sports events, bowling, skating, etc.). Therefore, and also for traditional reasons, hunting is a prominent leisure time activity in rural environment.

The most dominant activities of hunters, members of hunting associations in Western Bačka (urban and rural population), are oriented towards game protection and breeding (game breeding points, vet care, optimum fund maintenance, transport of game into hunting grounds, etc.), achieving favourable conditions for game within hunting grounds (for example: feeding plots, drinking holes, salting points, game shelters, Dragin, 2005).

Basic features of hunting as recreation activity in Europe. According to data from 2005, Federation of Hunting and Conservation Associations of European Union (*FACE*) there is about seven million registered hunters in Europe (table 1). European hunters have a long history behind them (from survival activities to leisure time and sport activities). Comparing the basic features to rules of hunting, as well as the ratio of hunters to overall population of a country, it is possible to identify several different areas (Pinet, 1995):

a) *Latin area and Ireland* – hunting is more frequently practiced among rural population and in the middle class (primarily interested in small game). Generally observed in Spain, France and Italy, the ratio of hunters to overall population is 1:55 on average, whereas in Ireland the ratio is 1:12 (Department of Economic and Social Affairs, 2006; FACE, 2005).

b) *Scandinavian area* – hunting is a spontaneous leisure activity across all social classes and equally practiced among both urban and rural population with the ratio of 1:24 on average.

c) *Anglo-Saxon area* – large numbers of hunters still reside in this region (1:76). Hunting tradition is closely linked to former land ownership and it is mainly considered a sports activity. Stylish shooting and group hunts are particularly appreciated among higher class –land owners. Rural population and middle class are mostly practicing chase and small game hunting.

d) *Slovenia, Croatia, Bosnia and Herzegovina, Bulgaria, the Check Republic, Slovakia, Hungary, Serbia and Montenegro* – there are similar natural-geographical and hunting characteristics (types of hunting, hunting seasons, hunters' code of conduct, etc.) in these countries. The countries have experienced deep political, economic and social changes abandoning the socialistic system in the last two decades. Their ratio of hunters to overall population ranges from 1:78 (Bulgaria) up to 1:184 (Hungary). Observed separately, Western Bačka is in this class according to the criteria, although its ratio is higher. Due to the unavailabil-

ity of the census data in Western Bačka for 2005 (presently being processed by the Republic Bureau of Statistics), the census data for 2004 were used (Table 2).

Table 1. The ratio between number of hunters and overall population.

COUNTRY	Area in thousand[a] (km^2)	Population in thousand[b]	Hunters[c]	Hunters in overall population (%)	Hunters/ Overall population
Albania	28.7	3,563	17,000	0.5	1:210
Austria	83.8	8,184	115,000	1.4	1:71
Belgium	30.5	10,364	20,000	0.2	1:518
Bosnia and Herzegovina	51.1	4,025	50,000	1.2	1:81
Bulgaria	110.9	7,450	95,000	1.3	1:78
Croatia	56.5	4,495	55,000	1.2	1:82
Cyprus	9.0	780	45,000	5.8	1:17
Czech Republic	78.8	10,241	110,000	1.1	1:93
Denmark	43.0	5,432	165,000	3.0	1:33
Estonia	45.2	1,332	15,000	1.1	1:89
Finland	338.0	5,223	290,000	5.6	1:18
France	544.0	60,656	1,313,000	2.2	1:46
Germany	356.9	82,431	340,000	0.4	1:242
Greece	131.9	10,668	270,000	2.5	1:40
Hungary	93.0	10,006	54,500	0.6	1:184
Ireland	70.3	4,015	350,000	8.7	1:12
Italy	301.3	58,103	750,000	1.3	1:78
Latvia	64.6	2,290	25,000	1.1	1:92
Lithuania	65.3	3,596	25,000	0.7	1:144
Luxembourg	2.5	468	2,000	0.4	1:234
Malta	0.3	398	15,000	3.8	1:27
Netherlands	41.5	16,407	30,000	0.2	1:547
Norway	323.8	4,593	190,000	4.1	1:24
Poland	312.7	38,635	100,000	0.3	1:386
Portugal	92.1	10,566	230,000	2.2	1:46
Romania	237.8	22,329	60,000	0.3	1:372
Serbia and Montenegro	102.2	10,829	96,000	0.9	1:113
Slovakia	49.0	5,431	55,000	1.0	1:99
Slovenia	20.2	2,011	22,000	1.1	1:91
Spain	504.8	40,341	980,000	2.4	1:41
Sweden	449.9	9,001	290,000	3.2	1:31
Switzerland	41.3	7,489	30,000	0.4	1:250
United Kingdom	244.1	60,441	800,000	1.3	1:76
TOTAL	4,958.7	521,793	6,988,500	-	-

[a] Fernández (Ed., 1998);
[b] Department of Economic and Social Affairs (2006);
[c] FACE (2005)

e) *Germany* (1:242) *and the Netherlands* (1:547) form the last area. Hunting practice calls for high income. Regulations and management aspects of hunting used in many European countries originated in this area (Ibid).

Table 2. Hunters and overall population ratio in Western Bačka in 2004.

Area (km^2) [a]	Population [a]	Hunters [b]	Hunters in overall population (%)	Hunters/ Overall population
2,304	177,320	2,752	1.6	1:64

[a] RSOS (2006);
[b] Hunting Associations' records (Hunting Association of Serbia).

Study background

Research by Li, Zinn, Barro and Manfredo (2003) showed that geographic region, population growth, declining residential stability, urbanization and ageing are related to participation in outdoor recreation.

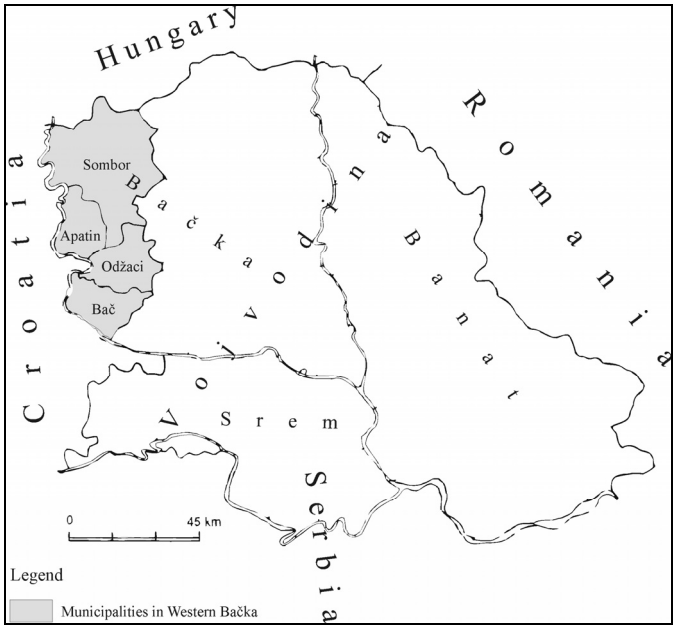

Figure 1. Position of Western Bačka in Vojvodina Province.

Due to demographic changes there is prominent trend of population ageing in Serbia which reflects in numerous changes within a society. The whole Serbia and Vojvodina Province, with the exception of the municipalities in Southern Serbia with dominating Muslim and Albanian population, has been

facing the problem of generation replacement. The decreasing number of birth rate and increasing mortality rate result in the below replacement level of reproduction. The birth rate fluctuates around 10 per thousand in Serbia (in Vojvodina Province the birth rate is slightly over than the average) within the last ten years.

During the same period mortality rate increased well above 10 per thousand in Serbia and in Vojvodina Province too. Subtraction of these rates results in negative growth rate of population, Negative natural growth has been the feature of Vojvodina Province since the 1980s and of Serbia since the 1990s (Statistical Office of Vojvodina Province (SOVP), 1982; Republic Statistical Office of Serbia (RSOS), 1987; RSOS 1991-2004).

Initial hypothesis of this paper is that the mean age of members of hunting associations parallels the mean age of overall population.

In order to establish the relationship between the level of hunt presence as leisure pursuit among the population and population ageing in the same area, age structure variation of overall population, number and age structure variations of members of hunting association were analyzed in the municipalities of Apatin, Bač, Odžaci and Sombor.

Our focus of interest was the area of Western Bačka – north western part of Vojvodina Province, i.e. north western part of Serbia (Figure 1).

Population study and sampling

In order to obtain the ratio of hunters to population in Western Bačka (only municipalities of Sombor, Apatin, Odžaci and Bač), with the aim of avoiding accidental fluctuations, the sample data has complied from the hunting associations records for 1981 and 2002, the same years when the population censuses were conducted in Serbia. The main reasons for such choice of the data analysis were the deep political, economic, and social crises with prominent migrations and negative natural growth in the last decade of the 20th century in Serbia. Consequently, those changes had impact on demographic transition and hunting as a leisure activity of the population.

The hunters' number and age structure were observed for 1981 and 1985 in order to confirm or undermine the trends of 1980s (dominant cohorts, annual increasing trend of hunters' number).

Natural growth and age structure of the population were observed for the period 1971-2002. The longer interval in comparison to hunters was chosen for better observation of negative demographic trend and its consequences concerning hunters.

Basic methods used in the paper are statistical data processing (tables and graphs), analytical technique and comparative methods (transverse and cohort).

Variables and measurement Within the analysis of overall population (natural growth) all age groups have been included to obtain general picture (Table 3 and 4).

Within the analysis of number and age structure variations of hunting association members in the municipalities of Apatin, Bač, Odžaci and Sombor (1981, 1985 and 2002) only 16 age groups (aged 15-94) have been analyzed and compared. As there is not a single hunter aged over 94 in the observed period, thus the age groups 95 and over have been excluded from the data analysis. Although the population through age 18 (maturity age) takes part in various jobs concerning hunting (foresting, game transport, game feeding aid, building feeding plots, water holes, etc.) they are not considered hunters. However, from the age of 15 and over they participate more intensively in hunting activities (as escorts) and they are recorded in hunting associations as members. Therefore, the age group 15-19 has been analysed (Table 5).

The comparative analysis (both transverse and cohort) of overall population and hunters in Western Bačka (1981 and 2002) has been conducted on 12 age groups, ages 20-24 and up to 75+. The data on the age group 75+ compile the observed categories (overall population and hunters) within age groups 75 and over (75-79, 80-84, 85-89, etc.), as they were officially recorded as one group in census statistics for 1981. Population up to 20 years of age in overall population and hunters has been excluded from the comparative analysis for obtaining real data purposes, since there are only indications of this segment in hunters data (Table 6 and 7; Graph 1 and 2).

Demographic Analysis. Changes in crude birth rate, mortality and natural growth, average age dynamics and population age index have been analyzed in order to establish the changes in age structure of overall population in the municipalities of Western Bačka in the period 1971-2002. Crude birth rate, crude death rate and natural growth rate were calculated according to the formula n=N/P*1000, where n represents birth rate, N – the number of live births per year for which rate is calculated, and P – the population number in middle calendar year for which birth rate is calculated. Mortality rare is calculated according to the formula j=n-m, where j represents natural growth rate, n – crude birth rate, and m – mortality rate. In the analysis of population average age census data for 1981 and 2002 on gender and age structure were used. Furthermore, analytical indicators used in the analysis were average age and index of ageing. Index of ageing was calculated according to the formula (1):

$$i = \frac{{}_{\infty}P_{60}}{{}_{19}P_{0}} \tag{1}$$

where i represents index of ageing, ${}_{\infty}P_{60}$ – population older than 60, and ${}_{19}P_{0}$ – population younger than 19. Average age of population is calculated according to the formula (2):

$$a = \frac{\sum (x + 0{,}5) * V_x}{\sum V_x} \tag{2}$$

where *a* represents average population age, x – age, and V_x – number of population aged x years (Djurdjev, 2000).

The total number of hunters, their age structure and average hunters' age were observed within hunting associations.

Results

Demographic transition of the population in Western Bačka – changes in natural population growth. The municipality of Sombor, the largest one in Western Bačka, recorded the lowest decrease of birth rate in the period 1971-2002. Apart from being the largest municipality Sombor is also one of the three largest centres in Bačka. Unquestionably, it attracts younger population and influences the birth rate to decrease less than in other three municipalities. Death rates in all four municipalities are constantly increasing and have exceeded 15.0‰, even 16.0‰ in the municipalities of Sombor and Bač. The opposite directions of these two movements resulted in a negative natural growth. Its first occurrence was recorded in 1980s in the municipality of Sombor, where also the highest death rates were recorded, influenced by urban lifestyle and stress. In the last decade of the 20th century, natural growth rates were around -5.0‰ in all four municipalities (Table 3).

Table 3. Birth rate (n), death rate (r) and natural growth rate (j) for the period 1971-2002. (per thousand)

Municipality	Rate	1971/80.	1981/90.	1991/2001.
Apatin	n	14.2	12.2	10.5
	m	10.0	11.4	15.7
	j	4.1	0.7	-5.3
Bač	n	13.1	12.7	11.8
	m	10.9	12.3	16.4
	j	2.2	0.5	-4.7
Odžaci	n	13.7	12.8	10.4
	m	9.4	11.6	15.9
	j	4.3	1.2	-5.6
Sombor	n	13.4	11.8	10.7
	m	11.4	13.0	16.2
	j	2.0	-1.2	-5.5
Western Bačka	n	13.6	12.4	10.8
	m	10.4	12.1	16.1
	j	3.2	0.3	-5.3

Analysis of the data taken from statistics DEM-1 and DEM-2 for 1971, 1981, 1991 and 2002; Federal bureau of Statistics (FSO), 1973 and 1991; SOVP, 1982; RSOS, 2003a.

The changes that we observed in population natural growth influence the changes in population age structure. The youngest population in 1971 was that of the municipality of Odžaci where a large number of immigrants settled after the WW II (Djurdjev, 1995), mainly from Southern Pomoravlje (about 60% of overall immigrants in that period), Lika and northern part of the Adriatic coast (about 30%). The population of the municipality of Bač is somewhat older, because significantly fewer colonists settled there. There is over 90% of the immigrants from Croatia in the municipality of Apatin, mainly from Lika region. Significantly fewer immigrants settled in the municipality of Sombor that being one of the reasons for the oldest population there. Average age was constantly increasing in those municipalities by 2002. Thus the largest centres (Sombor and Odžaci) have the oldest population (Table 4).

Furthermore age index in constantly increasing, proving the initial hypothesis on population ageing (Table 4).

Table 4. Average age and age index of population age in Western Bačka for the period 1971-2002.

Municipality	Average age				Index of ageing			
	1971	1981	1991	2002	1971	1981	1991	2002
Apatin	33.4	35.6	38.1	40.7	0.43	0.52	0.75	1.11
Bač	33.5	36.0	37.9	39.8	0.41	0.51	0.78	0.98
Odžaci	33.3	36.4	38.4	41.0	0.39	0.56	0.79	1.09
Sombor	35.2	36.8	38.6	41.0	0.56	0.61	0.81	1.09
Western Bačka	34.3	36.4	38.4	40.7	0.48	0.58	0.79	1.08

Analysis of the data taken from statistics DEM-1 and DEM-2 for 1971, 1981, 1991 and 2002; FSO, 1973 and 1991; SOVP, 1982; RSOS, 2003a.

Besides the population age structure changes, there were changes in migrations. Explicitly, migrations have occurred mainly from rural into urban settlements from 1970s up to the present. Negative changes in population age structure and migrations to urban settlements result in rural areas slowly becoming unpopulated. Furthermore Western Bačka was characterized as the destination for refugees in the period between the last two censuses. However, the refugees did not influence the age structure changes on a large scale in this part of Vojvodina Region.

Such changes in overall population consequently were almost identically transferred to overall hunters in all four municipalities – decrease in number and changes in age structure.

Changes in number and age structure of hunting association members in Western Bačka. The increase in overall hunters in 1985 as compared to 1981 in Western Bačka (members of hunting associations) was 25.9%. It was observable within almost all age groups (20-84).

Equalized standard of living in Serbia during 1980s also encouraged and motivated population to participate in this form of consumptive recreation (Table 5).

Table 5. Members of hunting associations in Western Bačka according to their age cohorts in 1981, 1985, 2002.

1981.			1985.			2002.		
cohorts	Age groups	LU*	cohorts	Age groups	LU*	cohorts	Age groups	LU*
1891-1887	90-94	0	1895-1891	90-94	0	1912-1908	90-94	2
1896-1892	85-89	1	1900-1896	85-89	1	1917-1913	85-89	5
1901-1897	80-84	3	1905-1901	80-84	8	1922-1918	80-84	20
1906-1902	75-79	17	1910-1906	75-79	33	1927-1923	75-79	45
1911-1907	70-74	63	1915-1911	70-74	76	1932-1928	70-74	114
1916-1912	65-69	79	1920-1916	65-69	106	1937-1933	65-69	158
1921-1917	60-64	147	1925-1921	60-64	237	1942-1938	60-64	183
1926-1922	55-59	271	1930-1926	55-59	348	1947-1943	55-59	260
1931-1927	50-54	325	1935-1931	50-54	366	1952-1948	50-54	460
1936-1932	45-49	382	1940-1936	45-49	350	1957-1953	45-49	394
1941-1937	40-44	294	1945-1941	40-44	332	1962-1958	40-44	354
1946-1942	35-39	294	1950-1946	35-39	546	1967-1963	35-39	262
1951-1947	30-34	374	1955-1951	30-34	480	1972-1968	30-34	170
1956-1952	25-29	278	1960-1956	25-29	294	1977-1973	25-29	125
1961-1957	20-24	84	1965-1961	20-24	113	1982-1978	20-24	75
1966-1962	15-19	11	1970-1966	15-19	11	1987-1983	15-19	9
Total number of hunters								
2623			3301			2636		

Anlaysis of the data taken from Hunting Associations' records (HAR) "Apatin" - Apatin, "Bač" - Bač, "Mostonga" - Odžaci and "Western Bačka" - Sombor (Hunting Association of Vojvodina (HAV), 1981 and 1985);
Anlaysis of the data taken from HAR "Apatin" - Apatin, "Bač" - Bač, "Mostonga" - Odžaci and "Western Bačka" - Sombor (Hunting Association of Serbia (HAS), 2002);
* LU – number hunting associations' members by cohorts/age groups.

The overall hunters decreased in 2002 as compared to 1985 for 20.2%, (almost to that in 1981). The share of age groups 40-54 and 65-94 (Table 5) has increased in this type of recreation activity which perfectly fits in the type of recreation, and also supports the fact that average age of the population in the study period has increased (Table 4).

Decreasing trends in the number of hunters in 2002 as being compared to 1985 reflect drastically smaller share of younger population – age groups 15-39 years (Table 5).

Comparative study of cohorts and average age of overall population and hunters. Although the same share (in per cents) was not recorded for overall

population and hunters' cohorts in Western Bačka in 1981, it is obvious that in both study cohorts the highest share occurs within age groups 30-34 and 45-49 (Figure 2). However, the age pyramid of overall population is more pillar like, i.e. showing almost equal share of different age groups, than that of hunters. The results suggest that middle aged population prevails among hunters' cohorts.

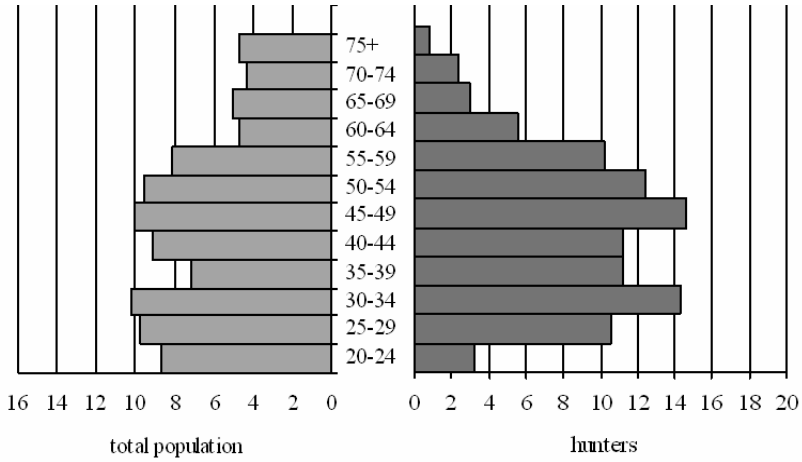

Figure 2. Age pyramid of overall population and hunters in Western Bačka in 1981 (in per cents)

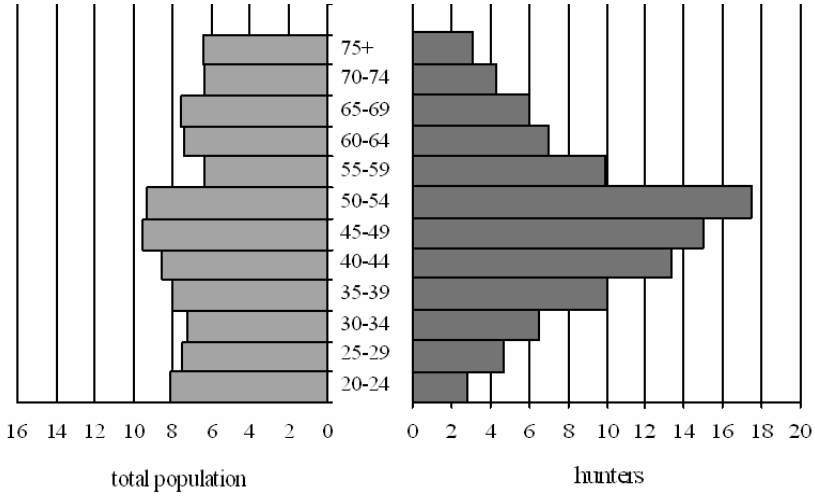

Figure 3. Age pyramid of overall population and hunters in Western Bačka in 2002 (in per cents)

The relationship between overall population and hunters' cohorts is almost similar to that in 1981. However, the dominating share of age groups

45-49 and 50-54 is observed for 2002 (Figure 3). Furthermore, among hunters the share of cohort 50-54 is significant – the second maximum in 1981. The dominating cohorts within overall population are 45-49 and 50-54 age groups for 2002 – the third and second maximums in 1981. (*Baby boomers* – the population born in the first decade after the WW II).

Besides, there is a decreasing share of younger cohorts in the age pyramid of overall population and hunters in 2002, and also increasing share of older cohorts. This analysis has once again confirmed that the mean age of members of these associations parallels the mean age of overall population.

Table 6. Impact of smaller cohorts and changed preferences on the number of hunters in Western Bačka in the period 1981-2002.

Age groups	Overall population[1]	Hunters[2]	Hunters in overall population (%)	Overall population[2]	Hunters[2]	Hunters in overall population (%)	Growth/decrease in the period 1981-2002 (%)		Impact in the period 1981-2002 (%)	
	1981			2002			Overall population	Hunters	Variations of overall population	Changed preferences
75+	7,147	21	0.3	9,901	82	0.8	+49.1	+73.2	67.1	32.9
70-74	6,600	63	1.0	9,674	114	1.2				
65-69	7,806	79	1.0	11,698	158	1.4				
60-64	7,073	147	2.1	11,413	183	1.6				
55-59	12,240	271	2.2	9,641	260	2.7	-7.6	+15.4	...	All
50-54	14,620	325	2.2	14,390	460	3.2				
45-49	15,200	382	2.5	14,604	394	2.7				
40-44	13,855	294	2.1	13,038	354	2.7				
35-39	10,739	294	2.7	12,264	262	2.1	-12.8	-38.4	33.3	66.7
30-34	15,533	374	2.4	11,145	170	1.5				
25-29	14,840	278	1.9	11,528	125	1.1				
20-24	13,265	84	0.6	12,453	75	0.6				
Total	138,918	2,612	1.9	141,749	2,623	1.8	-	-	-	-

[1] Data analysis from the Census: source SOVP, 1982; RSOS, 2003a.
[2] Data analysis HAR in Western Bačka (HAV, 1981; HAS, 2002).

Data analysis of hunters' share in overall population in 1981 by cohorts, i.e. age groups, shows the highest share during the second half of their

forties. Significant share is also observed at the beginning of their thirties, then during forties, and fifties up to the first half of their sixties. This period overlaps with working age of the population, because hunting is the accompanying activity of business people and as such included in business cooperation activities. Certain changes occurred in 2002. Absolute and relative values of the number of hunters decreased in all age groups up to the end of their thirties. The increased share of hunters was observed among population in their forties and fifties, the groups with the highest share of hunters in 1981.

The hunters' share also increased among the older population. The number of hunters and the population number are interdependent in the age groups 20-40 and 60-75 and even in older age groups. When the decrease in population occurred, the number of hunters decreased, and vice versa. It is mostly influenced by changing preferences in younger population. However, the changes of population number and increase of average age population have the highest impact on older population. But, changing preferences influenced the number of hunters with 100% at the average age (40-60 age groups, Table 6).

In order to better perceive the impacts of overall population ageing on hunting as outdoor recreation activity of residential population in Western Bačka, compatible values of that demographic factor were analysed and compared. More accurately, overall population comprises all cohorts, while hunting associations comprise only of cohorts 15 and over. Furthermore, the cohort 15-19 was excluded from the analysis, because its share in hunting associations is less than 0.5%. Therefore, the average age values for both overall population and hunters were calculated on compatible sample (aged 20 and over).

Table 7. Average age of overall population aged 20 and over and hunters in Western Bačka in the period 1981-2002.

Municipality	Average age			
	1981.		2002.	
	Overall population [1]	Hunters [2]	Overall population [1]	Hunters [2]
Apatin	45.4	43.4	49.1	49.6
Bač	45.6	42.4	49.0	46.4
Odžaci	45.9	44.7	49.4	50.1
Sombor	46.4	43.9	49.1	50.2
Western Bačka	46.1	43.8	49.2	49.4

[1]Data analysis of gender and age structure in Censuses 1981 and 2002; SOVP, 1982; RSOS, 2002;
[2] Data analysis HAR in Western Bačka (HAV, 1981; HAS, 2002).

Average population age increased for 3.1 years and average hunters' age for 5.6 years in the study period in Western Bačka. A higher average hunters' ageing was the most prominent in Sombor and Odžaci, which are urban centres with higher population densities.

The remarkable fact is that the average hunters' age was lower than the average population age in all municipalities in 1981, but twenty years late the situation reversed. The average population and hunters' age values are almost equal in Western Bačka in 2002, compared to 1981 (Table 7). Firstly, one of the reasons was the decrease of younger population and secondly changing preferences as seen in Table 6.

Discussion

In this study of social trends and outdoor recreation, we compared natural movement of population in Western Bačka and frequency of hunting pursuit among residential population. The most prominent political, economic and social instability in Serbia during 1990s stand for the impact factors of hunting association members decrease in Western Bačka. War and sanctions caused the whole range of demographic and social disturbances. Low standards of living caused by rapid decrease of economic power of the population (inflation), unemployment caused by economic failure of the state, etc. had demotivating effects on the population in recreation pursuit.

However, the significance of population ageing is gradually growing. This demographic factor is determined by the birth rate decrease, and population migrations. Relocation can disrupt social groups involved in recreation. These groups may not be replaced. As a result of these changes, participation in some activities may be reduced (Li, Zinn, Baroo, & Manfredo, 2003).

There is an emigration trend within the working age population in the area of Western Bačka due to the crises from the past. However, the inevitable trend of modern societies, also observed in this area, is the relocation of younger population to larger towns for education reasons (secondary schools, faculties) or for greater possibility of employment.

The trends are the same in all four municipalities in Western Bačka. We found the average age of overall population being over 40 in 2002, and about 36 in 1981. Age pyramids of the population for the period 1981-2002 appeared pillar like due to the decrease of population in younger cohorts and increase in older cohorts. The decrease of population was perceived within cohorts 35-39 and 60-64 in 1981. That population was born during the WW I and WW II. Afterwards there was the increase of population in several subsequent cohorts. Less population was perceived even after 20 years, thus there was less population in cohort 55-59. Compared to 1981, the total number of hunters increased in 1985 in all municipalities in Western Bačka.

Then in 2002 it decreased below the value recorded in 1985 and further decrease below the value recorded for 1981 was in the municipalities of Sombor and Odžaci.

There is an alarming fact of population ageing observed on the example of hunters in Western Bačka. The age groups 25-59 were the most represented in 1981 with the domination of age groups 30-34 and 45-49. The age groups 50-55 and 25-29 showed domination in the municipalities of Sombor and Bač respectively. Four years later the highest representation switched to age groups 25-64, with the domination of age group 35-39. The domination of age group 30-34 was recorded in the municipalities of Sombor and Bač. The following decade and a half (2002) brought further population ageing. The domination of age groups 35-59 was observed in the total number of hunters in hunting association of Western Bačka, with the maximum share of hunters aged 45-54, more precisely those aged 50-54.

The emphasis should be paid upon the fact that compared to 1981 and 1985, in 2002 the age groups 15-39 were less represented among hunters in Western Bačka, whereas the representation of age groups 65-90 was significant. Contrary to 1981, the age group 90-94 was represented in 2002.

Baby boomers cohorts showed the highest share in the total number of hunters in all municipalities in Western Bačka for the years 2002(1948-1952) and 1985 (1947-1951). They also occupied the most dominant position in the municipalities of Bač and Sombor, and the second dominant position in the municipalities of Apatin and Odžaci. The available records of hunting associations in Western Bačka illustrate that the active age of large *Baby boomers* cohorts is over thus causing the decrease in hunting pursuit. On the other hand, young rural population relocates to towns, most frequently chosen destinations are Novi Sad and Belgrade, thus diminishing the base for filling the final stage cohorts in Western Bačka. The effect is the increase in average hunters' age, which became higher than average population age in 2002 (on compatible sample aged 20 and over).

Management Implications and Need for Future Research. It remains unknown whether similar researches, based on impact analysis, relationship between natural movement of population and changes in hunters' age structure (residential population) have ever been conducted in Serbia.

Results suggest that there is principal impact of demographic transition (negative changes in birth rate, death rate, natural growth and migrations) on the level of engagement of the local population in outdoor recreation activities, particularly hunting.

Research findings may assist further study of the impact of demographic trends in Serbia, especially from population aspect, in different spheres of demographic elements and in various population activities respectively. The aspect of ageing population, as a prominent trend in Serbia, needs to be studied

as well as recreation activities which are dominant in older cohorts, and certainly investigate outdoor recreation trends of younger population.

The purpose of this study was to at least support a timely adaptation to negative demographic trends, unless they could be reverse.

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СТАРЕЊЕ ПОПУЛАЦИЈЕ: СТУДИЈА СЛИЧАЈА НА ПРИМЕРУ ЧЛАНОВА ЛОВАЧКИХ УДРУЖЕЊА ЗАПАДНЕ БАЧКЕ

Резиме

Повећање просечне старости становништва у Србији је све израженији. У све четири општине Западне Бачке трендови су истог карактера. Утврдили смо да је просечна старост укупне популације на том простору у 2002. години преко 40 година, а само 20 година раније је била око 36. Резултати указују на доминантан утицај демографских транзиција (негативне промене у наталитету, морталитету, природном прираштају и миграцији популације) на степен присутности рекреативних активности, у овом случају лова код локалног становништва. Старење популације Западне Бачке на примеру ловаца је алармантно. У 1981. најприсутније су старосне групе 25-59 година, са доминацијом група 30-34 и 45-49, а у општини Оџаци и 50-55, односно у општини Бач 25-29 година. Већ четири године касније, највеће учешће имају старосне групе 25-64 година, са изразитом доминацијом групе 35-39 година, а у општинама Сомбор и Бач и 30-34 година. Након нешто више од деценије и по (2002) старење популације је још уочљивије. Код укупног броја ловаца у ловачким удружењима Западне Бачке је доминантан удео старосних група 35-59 година, са максималним учешћем ловаца старости 45-54 година, поготово 50-54 година. Кохорте *Baby boomers* имају највећи удео у укупном броју ловаца у свим општинама Западне Бачке у 2002. (1948-1952) и у 1985. години (1947-1951). У 1981. такође су најдоминантније у

општинама Бач и Сомбор, док су на другом месту по учешћу у укупном броју ловаца у општинама Апатин и Оџаци. Како евиденција која постоји у ловачким удружењима Западне Бачке показује да многобројне кохорте *Baby boomers* излазе из биолошки активног периода, тако слаби и бројност оних који се баве ловом. Са друге стране, млади из села одлазе у градове, најчешће Нови Сад и Београд, па је база за попуњавање излазећих кохорди Западне Бачке све мања. Директна последица је повећање просечне старости ловаца, која се у 2002. не само изједначила са просечном старости популације (у компатибилном узорку старости 20 и више година), него је и нешто већа. Резултати истраживања могу помоћи даљим проучавањима последица демографских трендова у Србији, нарочито са аспекта популационих транзиција, како у различитим сферама демографских елемената, тако и у погледу многобројних људских активности. Оваква проучавања помоћи ће да се на време прилагодимо негативним демографским трендовима, ако већ не можемо да их преокренемо.