

The influence of the Refugees on Age Structure in Immigration Municipalities in Vojvodina (Serbia)

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Abstract

A large number of civil war refugees migrated to Vojvodina in the period 1991-1996. Each of nine immigration municipalities received over 10,000 refugees. This article will try to prove that refugees changed age structure of these municipalities in the negative sense. Demographic indicators such as median age and age index are higher and unfavorable in municipalities which received the largest number of refugees than in non-immigration municipalities which received the smallest number. The most unfavorable indicators due to the arrival of refugees has Sombor municipality and the best indicators has Stara Pazova municipality. In period 1991-2002. Immigrating municipalities shows higher ageing of population then non-immigrating.

Key words: migration, Vojvodina, Serbia, demography, civil war

Introduction

The human suffering and adverse economic consequences inflicted by internal unrest and civil conflicts are evident to all. Wars produce large death tolls, disrupt human and physical capital accumulation, damage the environment, weaken institutions, limit political governance, and erode civil liberties. And their horrors uproot entire populations from their lands, mostly non-combatants. Since civil wars typically go on for many years, these exoduses have been common and on the rise in many parts of the world (Baez, 2011).

In the late 80-s and to the of the 90-s of the XX century the Balkan region is characterized by intensive migration of the population, and given their scope, intensity, types, causes and consequences of the twentieth century can reasonably be called a century of migration (Raduški, 2011). If we mentioned a large number of refugees in the early decades of the XX century in First and Second Balkan Wars 1912-1913, through First World War, the interwar period and especially during and after Second World War, then the previous statement is true, in the Balkans previ-

ous century characterized by very turbulent times and mass migration.

Civil war in former Yugoslavia lasted 1991-1995. During this 5 years the most population migrated from Croatia and Bosnia and Herzegovina to Serbia and smaller number in Montenegro. The civil war affected largely common population, especially in ethnically mixed municipalities of war-affected Croatia and Bosnia and Herzegovina. Goodhand and Hulme (1999) point out that '[i]n contemporary conflicts, "the community" represents the nexus of conflict action.' It is at the community level, they emphasise, where most of the physical violence and suffering occurs. Indeed, that is why current wars generate massive refugee movements, because forcible migration of particular groups or 'ethnic cleansing' of local communities has become a tool in establishing new ethnicised forms of statehood based on the politics of exclusion. Those who shape policies of international intervention in conflict zones, argue that the return of refugees is central to any sustainable and just peace agreement (International Crisis Group, 2003; Koser & Black,

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1999; Petrin, 2002). All such communities migrated in most cases in Serbian border municipalities with Croatia and Bosnia and Herzegovina (Djurđjević, 1999).

Protocol on the United Nation Status of Refugees gave us definition of refugees which says that “a refugee is a person who owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it” (UNHCR, 1996; UNHCR, 2012). If we apply this definition to determine number of refugees in Serbia after civil war, we obtain the result that according to the data of UNHCR, 1996 Serbia received 617,728 refugee. Of that number, 537,937 persons were internationally recognized refugees and 79,791 were other persons affect-

ed by war. Serbian Autonomous Province of Vojvodina received 48,3% of refugees received in Serbia. Vojvodina had 9 municipalities which received over 10,000 refugees in period 1990-1996: Subotica, Sombor, Bačka Palanka, Novi Sad, Sremska Mitrovica, Ruma, Indjija, Stara Pazova and Pančevo (Djurđjević, 1998). That is the largest immigration municipalities in Vojvodina.

Methodology and data

When we talk about the age of a population we think about the age of their members, or precisely on it's age structure. In the public and science is proven trend of ageing population in most countries in Europe, even in Serbia. By aging population implies an increasing proportion of elders in total population (Djurđjević, 2001). The largest three age group in population are young, maturely and old group. The best known classification based on relations between these three groups are Sundberg typology.



Figure 1. Immigrating and non-immigrating municipalities in Vojvodina
Cartography: Lazar Lazić

Table 1. Sundberg typology

Type of population	0-14 years	15-49 years	50 and more years
progressively	40%	50%	10%
regressive	26,5%	50,5%	23%
stationary	20%	50%	30%

Source: *Bevolkungsstatistik 1750-1990; toward Djurdjev, 2001.*

Table 2. Friganović, Rosset and United Nations typology

Types of population	0-19 years	60 and more years	65 and more years
<i>Friganović</i>			
youth	35% and more	8% and less	
on the verge of ageing	35% and less	8% and more	
ageing	Less than 35%	12% and less	
aged	Less than 35%	More than 12%	
old	30% and less	15% and more	
<i>Rosset</i>			
youth		Less than 8%	
on the verge of ageing		8-10%	
In the process of ageing		10-12%	
aged		12% and more	
<i>United Nations</i>			
youth			4% and less
maturely			4-7%
old			More than 7%

Source: *Friganović, 1978; Rosset, 1968 and United nations, 1956; towards Djurdjev 2001.*

If we look to other typologies, there were three which has more transitional types of population. The most common are Friganovic typology, Roset tipology and typology given by United Nations.

One way to incorporate a number of age of the entire population is calculation of arithmetic mean age (a): $a = \sum (x + n \div 2) \times n P_x \div P$ (in formula "x" is the beginning of the interval, "n" is size of the interval, and "P" is total population). Another way is to calculate median age (Me): $M_e = L + (P \div 2 - \sum f_i) \div f_{me} \times n$ ("L" is value of the lower limit of the median interval, $\sum f_i$ is number of population who is younger than median interval and f_{me} is number of population in median interval).

The good indicator of aging population is index of aging which represent relation between old and young population. Its values vary between 0,1 and 0,65 and critical value is 0,4. If index is bigger that critical value, the population is old (Djurdjev, 2001). Formula is $i = \frac{{}_{\infty}P_{60}}{_{19}P_0}$. The last two indicators that will be used in this article are coefficient of ageing ($k_s = \frac{{}_{\infty}P_{60}}{P} \times 1000$) and coefficient of youth ($k_m = \frac{{}_{19}P_0}{P} \times 1000$).

For calculating the dependence between the number of refugees and some demographic indicators the

Pearson Correlation will be used. This correlation is most common measure of correlation in statistics, which shows the linear relationship between two variables. Results are between -1 and 1. A result of -1 means that there is a perfect negative correlation between the two values at all, while a result of 1 means that there is a perfect positive correlation between the two variables. A result of 0 means that there is no linear relationship between the two variables (Hay, 2010). Cohen (1988) distinguished different size of correlations:

1. High correlation: 0.5 to 1.0 or -0.5 to -1.0
2. Medium correlation: 0.3 to 0.5 or -0.3 to -0.5
3. Low correlation: 0.1 to 0.3 or -0.1 to -0.3.

Age structure of the largest immigration municipalities in Vojvodina in year 1991.

According to the census 2011. Autonomous Province of Vojvodina has 1,931,809 inhabitants which is 99,183 less than in census 2002. The nine largest immigration municipalities has population of 995,498. In 1991. this nine municipalities has 57,408 less than 2011. although population growth was negative.

As we can see in table 3, average arithmetic mean age in immigrating municipalities is 1,37 while aver-

Table 3. Demographic indicators of immigrating municipalities in Vojvodina by 1991. population census

Name of municipality	Total population in 1991.	Arithmetic mean age (a)	Median age (M _e)	Age index (i)	Coefficient of ageing (k _s)
Bačka Palanka	58,835	1,36	36,4	0,42	112,2
Indjija	44,185	1,40	36,0	0,38	102,0
Novi Sad	265,464	1,35	35,8	0,38	97,7
Pančevo	125,261	1,41	35,2	0,36	97,5
Ruma	55,087	1,37	36,6	0,43	110,6
Sombor	96,105	1,27	38,1	0,53	130,4
Sremska Mitrovica	85,328	1,33	36,5	0,39	100,4
Stara Pazova	57,291	1,52	34,3	0,31	89,7
Subotica	150,534	1,32	37,2	0,51	128,9
Sum/Average	938,090	1,37	36,2	0,41	107,7

Source: Population Census 1991, Republican Statistical Service of Serbia, Bubalo Živković et al. 2008

age arithmetic mean age in Vojvodina is 1,34, which is not a big difference. Average median age is very high, 36,2, while in Vojvodina is almost 34,3. Average age index of immigrating municipalities is just crossed critical value and it is 0,41 while in all Vojvodina it is critical 0,70. Coefficient of ageing in immigrating municipalities is 107,7 ‰ while in Vojvodina it is very high, 182,5 ‰.

Age structure of the largest immigration municipalities in Vojvodina in year 2002.

According to population census in 2002. in nine immigration municipalities lived 996,179 people which is 58,089 more than in 1991.

Arithmetic mean age in immigration municipalities in Vojvodina (table 4.) is 1,09 (overall arithmetic mean age in Vojvodina is 1,11) which 0,28 less than in 1991. Average median age is 38,4 (overall median age in Vojvodina is 38,6) which is 2,2 more than in 1991. Average age index is deep over critical value (0,4) and

it's value is 0,94 (overall age index in Vojvodina is 0,95) which is 0,53 more than in 1991. In the end, coefficient of ageing is 210,2 ‰ (overall coefficient of ageing in Vojvodina is 214,4 ‰) which is 102,5 ‰ more than in 1991. In both census (table 3. and table 4.) the worst demographic picture has municipality of Sombor, and the best municipality of Stara Pazova.

Results and discussion

If there is an impact on the age structure of immigration municipalities by civil war refugees, it will be shown in comparison of demographic indicators of immigration municipalities at one side, and non-immigration municipalities (municipalities which received the smallest number of refugees – to 1000 people). The non-immigration municipalities in Vojvodina are: Ada, Bački Petrovac, Bela Crkva, Beočin, Kanjiža, Kovačica, Mali Idjoš, Nova Crnja, Novi Kneževac, Opovo, Senta and Čoka. The most of this municipalities are undeveloped and there was no strategy to received larger

Table 4. Demographic indicators of immigrating municipalities in Vojvodina by 2002. population census

Name of municipality	Total population in 2002.	Arithmetic mean age (a)	Median age (M _e)	Age index (i)	Coefficient of ageing (k _s) (‰)
Bačka Palanka	60,966	1,08	38,8	0,98	219,7
Indjija	49,609	1,10	38,3	0,95	216,6
Novi Sad	299,294	1,09	38,0	0,88	195,0
Pančevo	127,162	1,08	38,3	0,87	195,1
Ruma	60,006	1,11	38,4	0,95	216,3
Sombor	97,263	1,04	40,1	1,09	233,3
Sremska Mitrovica	85,902	1,12	40,0	0,95	214,3
Stara Pazova	67,576	1,14	34,3	0,80	188,5
Subotica	148,401	1,08	39,0	0,97	212,6
Sum/Average	996,179	1,09	38,4	0,94	210,2

Source: Population Census 2002, Republican Statistical Office of the Republic of Serbia

Table 5. Comparison of values of immigration and non-immigration municipalities

Demographic indicators	Immigration municipalities	Non-immigration municipalities	Difference
Arithmetic mean age (a) in 1991.	1.37	1.31	0.06
Arithmetic mean age (a) in 2002.	1.09	1.14	0.05
Median age (M _e) in 1991.	36.2	37.8	1.6
Median age (M _e) in 2002.	38.4	39.2	0.8
Age index (i) in 1991.	0.41	0.70	0.29
Age index (i) in 2002.	0.94	0.99	0.05
Coefficient of ageing (k _s) (‰) in 1991.	107.7	208.4	100.7
Coefficient of ageing (k _s) (‰) in 2002.	210.2	227.7	17.5

Source: Population Census 1991. and 2002, Republican Statistical Office of the Republic of Serbia

number of refugees. And that kind of strategy is very difficult to be made. It is expected that demographic indicators are unfavorable in this type of municipalities.

As it is shown on table 5. difference of arithmetic mean age in immigration and non-immigration municipalities in both census is 0.05-0.06. If we look difference in median age, it is smaller in 2002. by 0,8 which means that population was getting older more in immigration municipalities. That proves also values of age index. Difference between municipalities by this indicator is 0.24 smaller in 2002 which means that people who migrated in immigration municipalities during 1991-1996 maybe increased age index. It must be borne in mind that population growth rate is negative and life expectancy, analyzed municipalities would certainly have been exposed to aging population. Intensity is the only unknown. The last prove that influence of refugees led to additional aging of population in immigration municipalities is shown at in coefficient of ageing. Difference by this indicator got decreased by 83,2 ‰. If we look demographic indicators for Vojvodina Province, large number of refugees may even mitigate negative demographic processes because showed indicators have bigger values in municipalities in which there were not massive migration.

This demographic indicators shows that large number of refugees put additional pressure but in such difficult demographic situation. The higher population ageing means higher pressure on working-age population in future because of larger number of older population than in other municipalities. Fortunately, the most immigrating municipalities are more developed than average municipality in Vojvodina. Worse situation would be that larger number of refugees migrated to today non-immigrating border municipality. Despite this immigrating municipalities still can be carriers of economic development in Vojvodina.

In table 6. is shown Pearson correlation between to independent variables: number of refugees in immi-

Table 6. Correlations between number of refugees and difference in median age

		Number of refugees	Median age
Number of refugees	Pearson Correlation	1	-.072
	Sig. (2-tailed)		.854
	N	9	9
Median age	Pearson Correlation	-.072	1
	Sig. (2-tailed)	.854	
	N	9	9

grating municipalities and difference between median age in 1991. and 2002. for immigrating municipalities. It is clearly seen high negative correlations between this to variables. The higher the number of refugees in the immigrating municipality leads to smaller difference between median ages which means higher median age in 2002. The difference between median ages between two census in immigrating municipalities is smaller which means that large number of refugees negatively influenced on difference between median ages in two censuses.

Table 7. Correlations between number of refugees and coefficient of ageing

		Number of refugees	Coefficient of ageing
Number of refugees	Pearson Correlation	1	-.245
	Sig. (2-tailed)		.526
	N	9	9
Coefficient of ageing	Pearson Correlation	-.245	1
	Sig. (2-tailed)	.526	
	N	9	9

In table 7. is shown Pearson correlation between number of refugees in immigrating municipalities and difference between coefficient of ageing in 1991. and 2002. for immigrating municipalities. It is seen low negative correlation between this to variables. The higher the number of refugees in the immigrating municipality leads to smaller difference between coefficients of ageing which means higher coefficient of ageing in 2002. The difference between coefficient of ageing between two census in immigrating municipalities is smaller which means that large number of refugees negatively influenced on difference between coefficient of ageing in two censuses.

Conclusion

The arrival of a large number of refugees influenced on age structure of immigration municipalities. Immigrating municipalities are more developed than non-immigrating but still population ageing are higher and faster. It is proved that there negative correlation between number of refugees in one side and demographic indicators like median age and coefficient of ageing. Age structure of refugees was similar to population in immigrating municipalities in Vojvodina, and a large number of residents with bad age structure have influenced on slower population ageing. The negative demographic indicators shows that large number of refugees put additional pressure but in such difficult demographic situation but in some municipalities they maybe mitigated demographic situations. A number of refugees at the beginning of XXI century migrated to Vojvodina from Kosovo and Metohija, so it will be interesting to see their influence on age structure in immigrating municipalities.

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