POPULATION DYNAMICS AND POPULATION POTENTIAL IN THE KOŠICE (1999-2005)

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Abstract: *This paper describes the natural movement and migration movement in the city of Kosice in 1999 and 2005.The natural movement consists of natality and mortality. The migration movement comprises emigration and immigration. The result of migration and natural movement is the total movement of the population. This paper explains the changes in movement of inhabitants in the municipal units in Kosice and interprets growth or decrease of municipal parts of Kosice. We describe usage model of population potential in municipal units of Kosice in 2005.*

Key words: *population potential, natural movement, migration movement, total movement, population density, municipal units, size category of population*

INTRODUCTION

In the past the development of the number of population in Kosice was gradual with the history of the city having been marked by battles and conflicts; therefore Kosice stagnated in several and long periods. The faster growth of the city occurred at the turn of the twentieth century when in 1890 Kosice had 38,817 inhabitants and in 1900 it was already 47,178 inhabitants. Several factors such as disease, poor harvest, starvation and waves of emigration influenced the development of Kosice population. The most important period in the history of the city and its inhabitants was the period following the World War II. The development of the number of population was not gradual (between years 1869 and 2001). We could break it up into two basic phases. Since the population census in 1900 the number of population has increased every 10 years by about ten thousand inhabitants. At this period the number of inhabitants was influenced especially by World War II (from 1939 to 1945).

Second phase is the period from 1950 to 2001, which from the point of view of changes in number of inhabitants in Kosice, played an essential role. This stage was characteristic of steady increase in the number of inhabitants (from 1950 to 2001), whereby significant changes occurred between the years 1961-1980. Rapid increase of number of inhabitants was the consequence of socialist industrialization and localization of a large metallurgical factory – U. S. STEEL facility. Next population increase was incurred by urban development and residential construction followed by migration of population, especially from the rural communities to the city. Due to sufficiency of job opportunities more than 54,000 inhabitants immigrated to the city before 1970's. Total increase during this period

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was approximately five thousand inhabitants per year. Absolute increase between the years 1980-1991 presented 32,792 people. Total increase of the population compared to previous ten years reduced by over 19.1 %. At this time the number of inhabitants immigrating to Kosice was lower by 19,000 people when compared to 1970's. Natural increase had 60.2 % and migration increase 39.8 % share in total increase of population and in total increase of population in Kosice.

First half of 1990's were characteristic of termination of construction building, which influenced the natural as well as migration movement of the population in Kosice.

Migration decrease in Kosice was recorded from 2001 to present in 2007 (ŠÚ, 2007). Shortage of labour opportunities and high prices of real estate – all this incurred movement of population of Kosice to suburban zones close to the city.

SOURCE AND METHODOLOGHY

The purpose of the paper is to refer to nature and migration movement of population and its effect on individual municipal parts in Kosice (in years 1999 and 2005). The paper describes relationship between migration and natural movement as fundamental indicators of growth of municipal units in space and time. Good options for typology of regional units according to movement of the population presented by method used in England. This method was first employed by Webb and was used to evaluate the municipal parts. We used arithmetic mean within years 2004 and 2005 and applied model of population potential towards identification of individual elements of population. Movement of population was of interest of several geographers, for example Svecova (1998, 2001a, 2001b) orientated towards changes of migration movements of inhabitants and their flows in Slovak cities. Paulen (2001) reviewed migration movement of inhabitants in the cities of Nitra region. Dynamics of population was dealt with in articles of Kandracova (1993, 1995), Batorova (1999), Pavlikova (2000), Dubcova, Kramarekova (1999) and Olas (2000) as well. The issue of natural movement was the object of interest in articles by Podolak (1995) and Mladek (2001).

MOVEMENT OF POPULATION IN MUNICIPAL PARTS OF KOSICE IN THE YEARS 1999 AND 2005

The transformation process brought about profound changes in the political, economical and social sphere to which inhabitants reacted through alteration of their demographical behaviour. The aim of the paper is to point out changes in population dynamics of municipal parts of Kosice according to the size categories in years 1999 and 2005. At this stage the town was divided into twenty-two municipal parts. We have examined the following demographic characteristics: natural, migration and total increase – decrease of population in 1999 and 2005.

The external characteristic of population reproduction is the natural increase or decrease of population. The municipal parts of Kosice may be categorized into parts with natural increase or decrease of the population. Natural increase of the municipal parts decreased in the monitored period from 2.35 ‰ to 1.83 ‰. In 1999 natural increase was observed in up to fifteen municipal parts. Natural increase in 1999 was recorded in five municipal parts; seven municipal parts had natural increase from 5.0 ‰ to 10.0 ‰ and three parts

above 10.0 ‰. Natural decrease was observed in seven municipal parts, out of which three were in size category of over 20,000 inhabitants. Overall, four municipal parts had natural decrease from -5.0 ‰ to 0.0 ‰ and three had decline of more than -5.0 ‰.

The number of municipal parts with natural increase declined from fifteen in 1999 to fourteen in 2005. While in 1999 there were three municipal parts with natural increase over 10.0 ‰, on the other hand in 2005 only 2 remained. In all size categories the number of municipal parts with natural increase of less than 5.0 ‰ slightly increased, on the contrary the number of municipal parts with natural increase from 5.0 ‰ to 10.0 ‰ declined. The number of municipal parts with natural decrease of population increased from seven to eight.

While in 1999 the highest rate of natural increase was observed in the following size categories of municipal parts: 2,000 – 4,999 and 20,000 residents, on the other hand in 2005 the highest rate in size categories of urban parts were as follows: 200 - 499 and 5,000 – 9,999 population. The lowest rates of natural decrease were recorded in the following size categories: 1,000 – 1,999 and 2,000 – 4,999 inhabitants.

The lowest rates of natural decrease (in 2005) were observed in the following municipal parts: Barca (-20.3 ‰), Vysne Opatske (-12.1‰), Juh (-3.6 ‰), Kosicka Nova Ves (-3.3 ‰). The highest rates of natural increase (in 2005) were recorded in the following municipal parts: Lorincik (39.5 ‰), Lunik IX (28.3 ‰), Saca (9.7 ‰), Sidlisko Tahanovce (6.7 ‰).

Development of migration movement in Slovak Republic is connected with the developmental tendencies of the whole residential system in Slovakia as well as with structural-production trends in localization of production and non-production activities. Migration of population in the whole course of post-war period in territorial characteristics was characteristic of one-way orientation from urban to rural areas with the cities presenting significant migration centers due to the wide range of job opportunities and extensive construction building. After 1989 the extent and orientation of migration changed. There is a change of quantitative stagnation in the development of cities, which results in reduced intensity of migration movement of inhabitants. Modification of economic conditions led to reduction of construction building as well as slow development of real estate market.

In 1999 the rate of migration above 20.0 ‰ was recorded in six municipal parts with less than 4,999 inhabitants. In five municipal parts migration increase ranged from 0.0 ‰ to 10.0 ‰ and in two municipal parts from 10.0 ‰ to 20.0 ‰. Migration decrease in 1999 was present in 41.0 % of urban parts (9 municipal parts). Nearly 78.0 % share of municipal parts (7 MPs) with migration decrease of inhabitants was in the size category of up to 20,000 inhabitants. In 2005 the migration increase over 20 ‰ was recorded in just four municipal parts (in 1999 it was six municipal parts). The number of municipal parts with migration increase up to 10 ‰ increased from five to seven (in 2005). The number of municipal parts with migration growth from 10 ‰ to 20 ‰ did not alter during the monitored period. Migration decrease was observed in nine municipal parts just as in 1999. The most significant population decrease was observed during the whole period in the size category above 20,000 people. In Kosice this category includes housing estate complexes built from 1960's to 1980's. Inhabitants (especially the more solvent ones) left these residential areas and found new housing in the suburban zones of the city resulting in deconcentration into municipal parts of rural character, which were located

in the peripheral parts of the city (with rural pattern of the building-up and environment). Migration decrease in municipal parts during the monitored period declined from -2.63 ‰ (1999) to -2.40 ‰ (2005). The highest rate of migration increase (20.5 ‰) in 2005 was recorded in municipal parts of the following size category: 2,000 – 4,999 residents and the lowest rate (1.2 ‰) in municipal parts of the size category of 1,000 – 1,999 inhabitants. The lowest rate of migration decrease (-9.8 ‰) in 2005 was observed in municipal part of size category of 500 - 999 inhabitants. The lowest rate of migration decrease (2005) was recorded in the following municipal parts: Tahanovce (-59.2 ‰), Lorincik (-31.6 ‰), Sebastovce (-9.8 ‰), Dargovskych hrdinov (-9.0 ‰). The highest rate of migration increase (2005) was observed in the following municipal parts: Barca (38.4 ‰), Dzungla (28.5 ‰), Peres (27.6 ‰), Myslava (23.7 ‰).

The outcome of the present activity of natural and migration movement is the total increase or decrease of the population. We may state that in 1999 the majority of the municipal parts maintained the total increase of the population. Total decrease was evident in seven municipal parts, which belonged to size category above 20,000 inhabitants. Total increase over 10.0 ‰ (2005) was observed in eight municipal parts compared to ten municipal parts in 1999. Total growth in the monitored period decreased from -0.28 ‰ in 1999 to -0.57 ‰ in 2005 in the city. The most marked decline was recorded in municipal parts of the size category 500 - 999 inhabitants, from 27.8 ‰ in 1999 to -9.8 ‰ in 2005.

Tab. 1: *Movement of population in 1999 and 2005 in Kosice*

Size category municipal parts by number of inhabitants	Number of municipal parts		1999			2005		
			Nature movement	Migration movement	Total movement	Nature movement	Migration movement	Total movement
	1999	2005	in (‰), medial values of size category MP			in (‰), medial values of size category MP		
200 – 499	2	2	7,4	13,7	21,1	19,8	-1,6	18,2
500 – 999	3	1	3,1	24,7	27,8	0	-9,8	-9,8
1 000 – 1 999	4	6	-1,7	10,7	9	1	1,2	2,2
2 000 – 4 999	5	3	5,9	35,6	41,5	-7,7	20,5	12,8
5 000 – 9 999	0	2	--	--	--	19	10,2	29,2
10 000 – 19 999	0	1	--	--	--	-0,6	-3,5	-4,1
20 000 –	8	7	2,2	-5,7	-3,5	1,6	-4,6	-3
TOTAL	22	22	2,35	-2,63	-0,28	1,83	-2,40	-0,57

Source: Štatistickú úrad SR, 2006, 2000

Tab. 2: *Nature movement inhabitants of the municipal parts of Kosice in 1999 and 2005*

Size category municipal parts by number of inhabitants	Number of the municipal parts of Kosice in 1999 I. and 2005 II. with nature movement of the inhabitants									
	below - 5 ‰		from -5 to 0 ‰		from 0 to 5 ‰		from 5 to 10 ‰		above 10 ‰	
	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.
200 – 499						1	2			1
500 – 999			1			1	2			
1 000 – 1 999	2	1		1	1	2	1	2		
2 000 – 4 999	1	1		1	1	1	1		2	
5 000 – 9 999								1		1
10 000 – 19 999				1						
20 000 --			3	3	3	2	1	2	1	
TOTAL	**3**	**2**	**4**	**6**	**5**	**7**	**7**	**5**	**3**	**2**

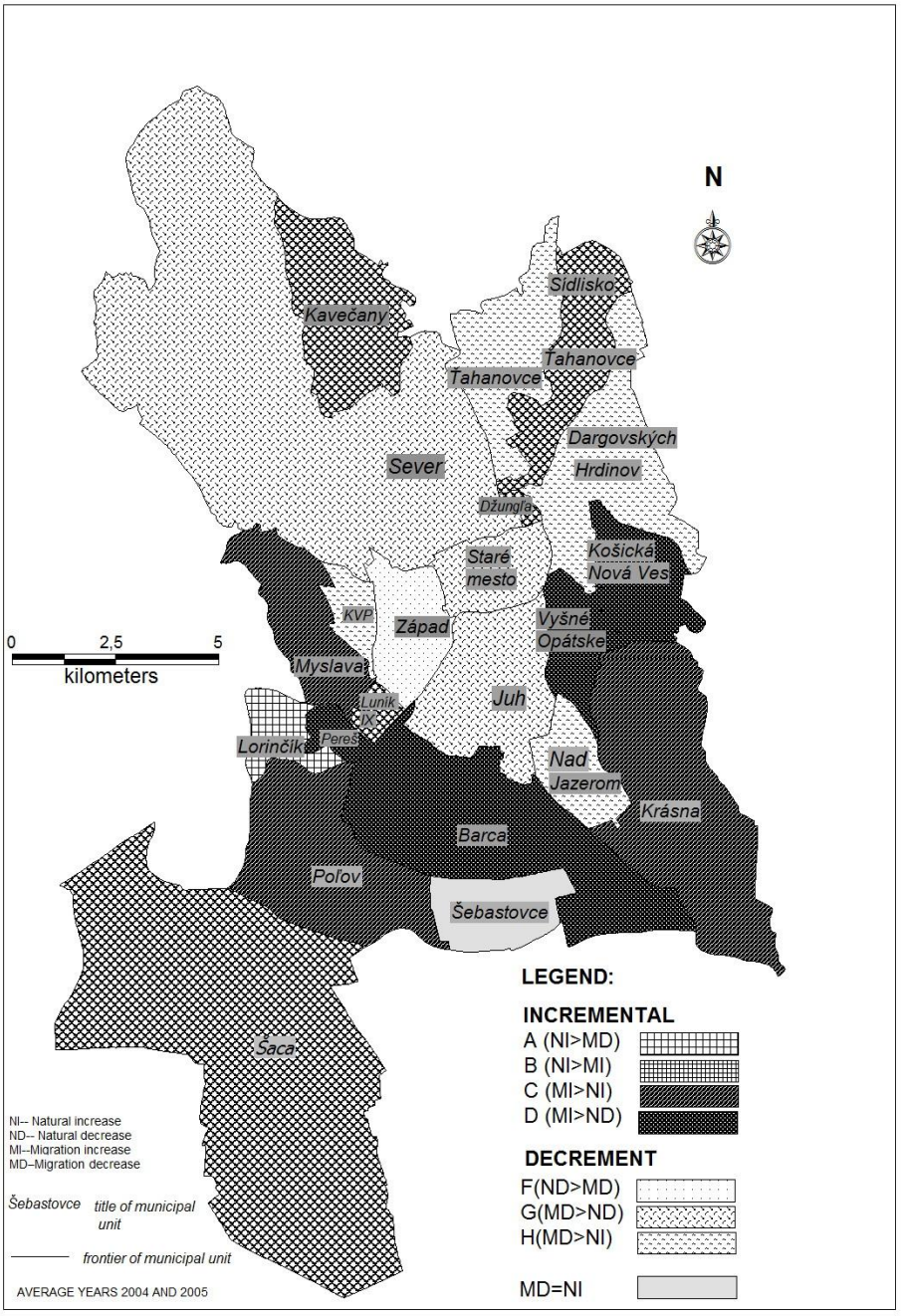
Source: Štatistický úrad SR, 2006, 2000

Tab. 3: *Total movement inhabitants of the municipal parts of Kosice in 1999 and 2005*

Size category municipal parts by number of inhabitants	Number of the municipal parts of Kosice in 1999 I. and 2005 II. with total movement of the inhabitants									
	below - 10 ‰		from -10 to 0 ‰		from 0 to 10 ‰		from 10 to 20 ‰		above 20 ‰	
	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.
200 – 499					1	1			1	1
500 – 999				1	1				2	
1 000 – 1 999		1		1	3	1	1			3
2 000 – 4 999						1	4	2	1	
5 000 – 9 999								1		1
10 000 – 19 999				1						
20 000 --	2	1	5	4		2			1	
TOTAL	**2**	**2**	**5**	**7**	**5**	**5**	**5**	**3**	**5**	**5**

Source: Štatistický úrad SR, 2006, 2000

Map 1: *Types of municipal units by total population change (average years 2004 and 2005)*



Source: Štatistický úrad SR, 2006, 2005

Tab. 4: *Migration movement inhabitants of the municipal parts of Kosice in 1999 and 2005*

Size category municipal parts by number of inhabitants	Number of the municipal parts of Kosice in 1999 I. and 2005 II. with migration movement of the inhabitants									
	below - 10 ‰		from -10 to 0 ‰		from 0 to 10 ‰		from 10 to 20 ‰		above 20 ‰	
	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.
200 – 499		1	1						1	1
500 – 999				1	1				2	
1 000 – 1 999		1			2	3	1		1	2
2 000 – 4 999			1		2	1		1	2	1
5 000 – 9 999						1		1		
10 000 – 19 999				1						
20 000 –	3		4	5		2	1			
TOTAL	**3**	**2**	**6**	**7**	**5**	**7**	**2**	**2**	**6**	**4**

Source: Štatistický úrad SR, 2006, 2000

Tab. 5: *Types of the municipal parts in Kosice according to nature and migration movement of the inhabitants (share within a years 2004 and 2005)*

Types of municipal parts	Municipal parts of Kosice	
	Number	Share in %
Incremental		
A (NI>MD)	1	4,5
B (NI>MI)	5	22,8
C (MI>NI)	3	13,6
D (MI>ND)	4	18,2
TOTAL	**13**	**59,1**
Decrement		
E (ND>MI)	0	0
F(ND>MD)	1	4,5
G(MD>ND)	3	13,7
H(MD>NI)	4	18,2
TOTAL	**8**	**36,4**
MD=NI	1	4,5
TOTAL	**22**	**100**

Note: NI – nature increase, ND – nature decrease, MI – migration increase, MD – migration decrease

Source: author

The lowest decline of the total increase was in category of 200 - 499 inhabitants, from 21.1 ‰ in 1999 to 18.2 ‰ in 2005. Whereas in 1999 all size categories except category with up to 20,000 inhabitants were characteristic of total population increase, in 2005 the total decrease in municipal parts was documented in the following size categories: 500 - 999, 10,000 – 19,999 and the category with over 20,000 inhabitants. The lowest rate of total decrease (2005) was recorded in the following municipal parts: Tahanovce (-53.29 ‰), Stare mesto (-10.17 ‰), Sebastovce (-9.76 ‰), Juh (-8.11 ‰). The lowest rate of total increase (2005) of the population was in these municipal parts: Lunik IX (41.45 ‰), Dzungla (28.51 ‰), Myslava (26.49 ‰), Peres (25.86 ‰).

Population development of municipal parts in Kosice has recently decelerated and we may observe stagnation of population in majority of municipal parts similar to the city of Kosice. The smallest decline of the population dynamics was documented in parts with up to 499 inhabitants. These parts had the highest population increase during the monitored period (from 7.4 ‰ in 1999 to 19.8 ‰ in 2005). Despite this, we observed migration decrease at the end of the period monitored (from 13.7 ‰ in 1999 to -1.6 ‰ in 2005). While till 1989 the direction of migration was aimed at the largest municipal parts of Kosice (housing estate complexes), at present the inhabitants have concentrated to the size categories of municipal parts with lower number of population, which offer them ecologically superior, safe and cheaper living.

Reasonable options for typology of regional units according to movement of the population are presented by method used in England. This method was first derived and used by Webb in order to analyze the population of England and Wales. The method was used to assess the area units. We used arithmetic mean for years 2004 and 2005.

The proportion of municipal parts with total increase of the population was 59.1 %. Total decrease of the population was recorded in 36.4 % of municipal parts. Special category is represented by the municipal part – Sebastovce, where identical natural and migration balance was documented. The largest number of incremental villages is of type B and D (nine parts altogether). For type B (five urban parts) have determining effect on the dynamics of population – migration increase. The third most numerous incremental type of municipal parts is type C (three parts), where migration increase of the population plays an important role being complemented with lower population increase. Out of the sample of villages characteristic of total decrease of population are the H and G groups the most numerous ones (seven units) with migration decrease of population playing an important role. Type G (three parts) combined with natural decrease and type H (four units) combined with natural increase. We were able to identify 13 incremental and 8 decrement municipal parts. Incremental parts were equally located. In the group of municipal parts with total population increase, the municipal parts are equally located (natural increase – 6 municipal parts; migration increase – 7 municipal parts). The findings indicate that in the largest number of municipal parts (7 MS), the migration decrease represents the decisive factor. Natural decrease is relevant in case of municipal part 1 only. If we regard the positive balance of both processes as the evaluation criteria, subsequently only 8 municipal parts meet the following criteria. We may consequently state that only four parts represent combination of natural and migration decrease.

DISTRIBUTION AND DENSITY OF POPULATION

One of the indicators of distribution of inhabitants in space is population density, which is considerably different in the area of the city. The territory of the city of Kosice obtained urban circuits with low population density. Average population density in the city is 968 inhabitants per square km and average population density in Slovakia is 110 inhabitants per square km (in 2005). The largest municipal part is Sever (54,665 square km), which has 364 inhabitants per square km. The most densely populated part is represented by municipal units KVP (12,737 inhabitants per square km) with 25,431 inhabitants. In terms of its area and number of urban circuits is the municipal unit Zapad densely populated as well. Urban parts with high population density are the following: Nad Jazerom (6,118 inhabitants per square km), Lunik IX (5,561 inhabitants per square km), Stare Mesto (4,727 inhabitants per square km). Considering its area and number of population the following municipal parts have low population density: Polov (86 inhabitants per square km), Saca (108 inhabitants per square km), Kavecany (111 inhabitants per square km), Sebastovce (121 inhabitants per square km).

We divided all urban circuits (in 2001) to the following size groups:

The size category of 1 to 100 inhabitants per square km includes overall 12.7 % urban circuits. Majority of urban circuits located in municipal parts: Polov (100 % from urban circuits), Krasna (60 % from UC), Sidlisko Tahanovce (33.2 % from UC) have no more than 100 inhabitants per square km.

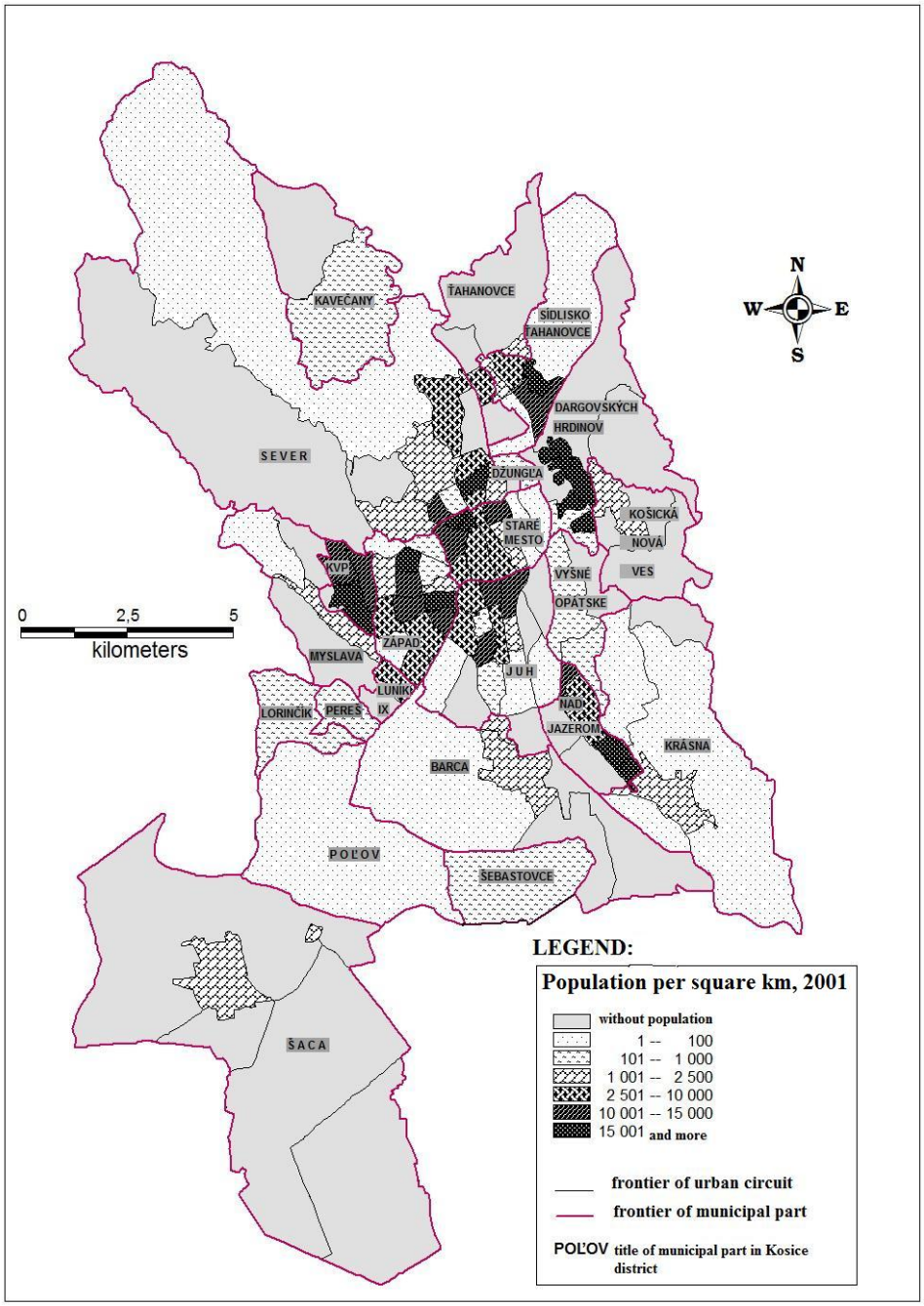
The size category of 101 to 1,000 inhabitants per square km includes overall 9.5 % urban circuits. The following urban circuits located in municipal parts have no more than 1000 inhabitants pre square km: Dzungla (100 % from urban circuits), Lorincik (100 % from UC), Peres (100 % from UC), Sebastovce (100 % from UC). Municipal parts of the first and second size group are represented by municipal parts located on the outskirts of the city and which at present are characteristic of deconcentration processes within the city of Kosice. These municipal parts became part of the city in the second half of the 20th century. Overall 12.7 % urban circuits belong to the size category with 1,001 to 2,500 inhabitants per square km**.** This size category has the highest representation of urban circuits in the following municipal parts: Barca (40 % from urban circuits), Saca (33.3 % from UC), Myslava (25 % from UC).

The size category with 2,501 to 10,000 inhabitants per square km includes 14.3 % urban circuits overall. This size category has the highest representation of urban circuits in the following municipal parts: Lunik IX (50 % from UC), Stare Mesto (36.3 % from UC), Nad Jazerom (25 % from UC). Within this size category, the urban circuits are located in downtown with housing estate character of construction building typical of the second half of the 20th century.

The size category with 10,001 to 15,000 inhabitants per square km includes 14.3 % urban circuits overall. This size category has the highest representation of urban circuits in the following municipal parts: Dargovskych Hrdinov (63.6 % from UC), KVP (40 % from UC), Nad Jazerom (38 % from UC).

An independent group is represented by municipal units without population, where logically the density of population is zero. They had 25.4 % share from total numbers of the urban circuits. This size category has the highest representation of urban circuits in municipal sections: Kosicka Nova Ves (75 from UC), Saca (66.7 % from UC), Tahanovce

Map 2: *Population density of Kosice by urban circuits*



Source: Statistický úrad SR, 2003

(60 % from UC). Majority of these urban circuits has industrial, storage or agricultural exploitation.

POPULATION POTENTIAL OF MUNICIPAL PARTS IN THE DISTRICT OF KOŠICE

As of 12/31/2005 the sum of all potentials (non-induced population potential) in municipal parts of Kosice was 1,243,391 (in 2005) inhabitants per kilometre (100 %). The share of individual municipal parts ranged from 1.988 % (UP Saca) to 7.943 (UP Zapad). High rate of population potential was documented in the following municipal parts: Sidlisko KVP (7.024 %), Juh (6.395 %). Stare Mesto (6.193 %), Lunik IX (5.390 %), Myslava (5.232 %). Large number of population was recorded in the following municipal parts: Sidlisko KVP, Juh, Stare Mesto, which are located in the centre of the city. From the practical aspect, it means that the municipal parts display low distance total from all others points of surveyed territory. Spatial parts like Lunik IX, Myslava have high population potential, which is related to other municipal parts in Kosice by its proximity. We may point out that in models of population potentials applied to the area of Kosice combination of factors is of high value: population and distance.

The distance markedly influences population potential in the following municipal parts: Lunik IX, Myslava and municipal parts with the lowest rate of population potential. The category of districts with the lowest rate of population potential (from 1.988 % to 2.973 %) includes municipal parts, which within the framework of the surveyed area have peripheral location and low number of population (Saca, Polov, Sebastovce, Kavecany, Krasna). Sums of values of the population potentials at age categories 0 - 14 years (15.723 %) and at age category of men 60+, women 55+ (19.085 %) presented approximately one third of the overall sum of population potential in the city (34.808 %). Higher population potential was observed in the following age categories: men 60+ and women 55+. Share of the population potential at age category 0 - 14 years in municipal parts ranged from 0.344 % (Saca) to 1.178 % (Zapad). Spatial parts with the higher rate of population potential at age category 0 - 14 years include the following municipal parts: Zapad (1.178 %), Sidlisko KVP (1.046 %), Juh (0.947 %) and Stare Mesto (0.915 %). The lowest rates were found in municipal sections Saca (0.344 %), Polov (0.431 %), Sebastovce (0.438 %) and Kavecany (0.468 %).

Shares of the population potential at age category: men 60+, women 55+ in urban parts ranged from 0.372 % (Saca) to 1.666 % (Zapad). From the spatial point of view, we obtain similar findings when compared to the population potential at the 0 – 14 years age category. Total sum of the population potential at age category of men 15 – 59 and women 15 – 54 presents a share of 65.19 % from total sum of population potential in the city. Shares of the population potential for the aforementioned age categories range from (1.272 %) in Saca to (5.105 %) in Zapad, whereas the highest rates were observed in municipal parts Zapad (5.105 %), Sidlisko KVP (4.687 %), Juh (4.021 %) and Stare Mesto (3.935 %). The lowest rates were found in Saca, Polov, Sebastovce, Kavecany (from 1.272 % to 1.896 %).

We may conclude that the rates of the population potential obtained by using the model to space of Kosice are affected by distance rather than the size of population with municipal parts Lunik IX (5,368 inhabitants) and Saca (5,096 inhabitants) representing

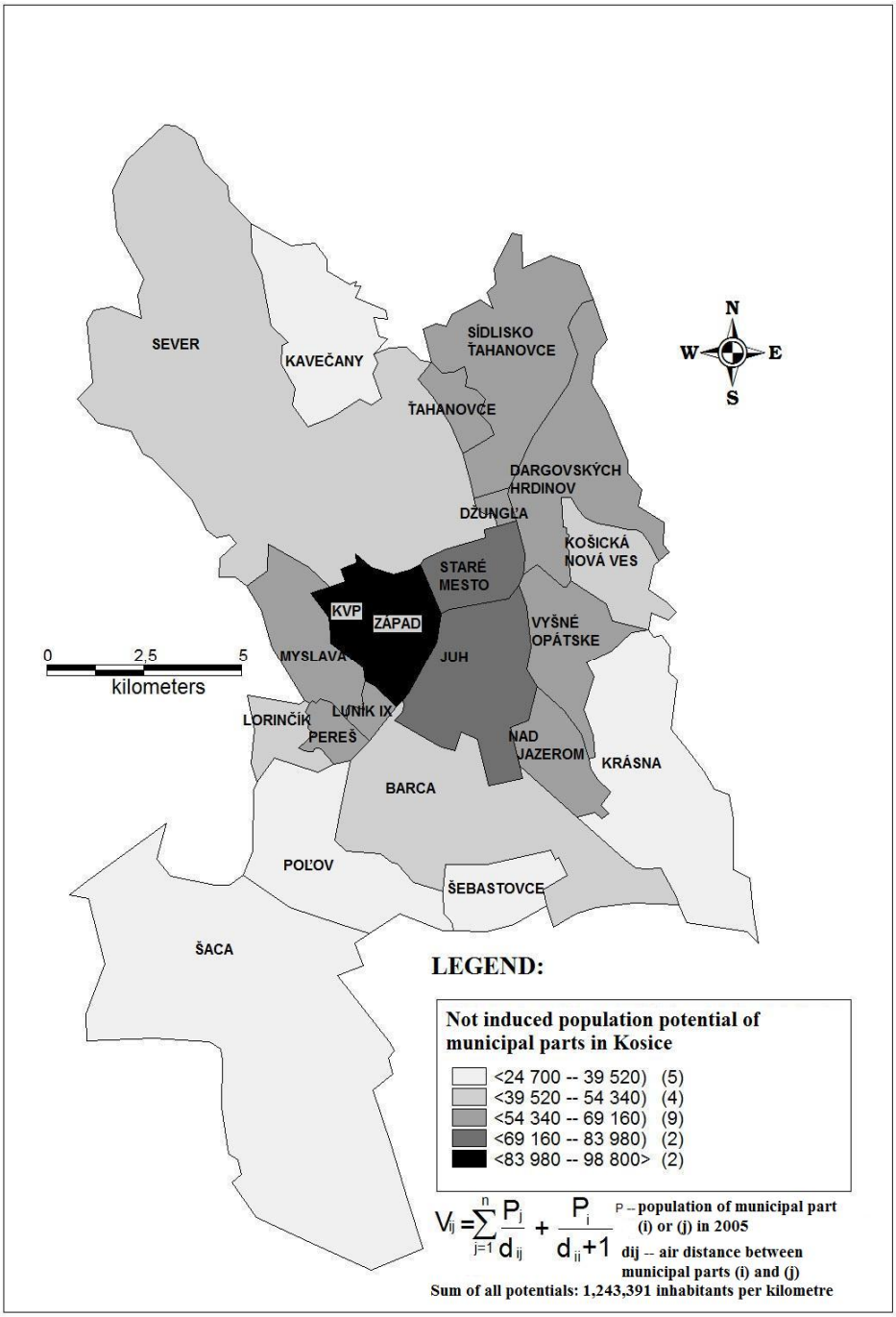
exemplary models. Both spatial units have approximately the same number of population, but impact of the distance results in different total population potential. In case of Lunik IX the total population potential is 67,004 inhabitants per kilometre and urban unit Saca has the population potential of 24,726 inhabitants per kilometre.

Change of rates of non-induced population potential in municipal parts within years 2005 and 1991 ranged from -4,568 to 8,265 inhabitants per kilometre. The highest decrease of rate of non-induced population potential (difference between 2005 and 1991) was documented in the following municipal parts: Zapad (-4,568 inhabitants per kilometre), Juh (-4,330 inhabitants per kilometre), Stare Mesto (-3,708 inhabitants per kilometre), Nad Jazerom (-3,154 inhabitants per kilometres). All aforementioned spatial units of Kosice are located in the centre of the city and all of them were characteristic of total decrease of inhabitants between years 2005 and 1991. These municipal parts have the highest number of permanent residents in the city.

The highest increase rate of non-induced population potential (difference 2005 and 1991) was observed in the following municipal parts: Sidlisko Tahanovce (8,265 inhabitants per km), Tahanovce (7,882 inhabitants per km), Kavecany (1,346 inhabitants per km), Peres (118 inhabitants per km). Besides Sidlisko Tahanovce all municipal parts are of rural character. Between years 2005 and 1991 total decrease of population was observed in all these parts. The highest rate of total increase of population was found in Sidlisko Tahanovce (10,315 inhabitants between 2005 – 1991), which was the consequence of the termination of buildings construction in the first half of 1990's. Tahanovce and Kavecany have high increase of non-induced population potential resulting from the close distance from the municipal part Sidlisko Tahanovce. This urban part affects by her "weight" (number of population) also others spatial units located in its neighbourhood. The second locality with significantly lower increase in non-induced population potential is located in the South-western part of the city and is characteristic of the following spatial units – Peres (1,118 inhabitants per km), Saca (848 inhabitants per kilometre), Lunik IX (inhabitants per kilometre), Lorincik (inhabitants per kilometre), Polov (inhabitants per kilometre). This population potential increase is associated with concentration of inhabitants within the city of Kosice. Non-payers and people of low socio-economic status were relocated from other municipal parts of the city to Lunik IX and Saca. Others municipal parts are of rural nature and with inhabitants from downtown migrating there the economic status improves.

Change of rates of induced population potential during the years 2005 and 1991 ranged in municipal parts from -2,747 to 7.869 inhabitants per kilometre. The highest decline of rates of the induced population potential (difference between 2005 and 1991) was documented in the following municipal parts: Lunik IX (-2,747 inhabitants per kilometre), Vysne Opatske (-2,440 inhabitants per kilometre), Sidlisko Tahanovce (-2,050 inhabitants per kilometre), Myslava (-1,668 inhabitants per kilometre). Therefore, through the changes in the rate of induced population potential the municipal parts, which are influenced by surrounding spatial units, emerge. The highest increase of rates of induced population potential (difference between 2005 and 1991) was found in the following municipal parts: Tahanovce (7,869 inhabitants per kilometre), Dargovskych hrdinov (1,245 inhabitants per kilometre), Kavecany (1,160 inhabitants per kilometre), Sever (579 inhabitants per kilometre). Region with positive rates of induced population potential is located in the

Map 3: *Not induced population potential in municipal units (31.12.2005*)



Source: Author

northern part of the city and is represented by municipal parts bordering with Sidlisko Tahanovce. Therefore, we may state that this spatial unit by its "weight" (number of population) influenced other urban parts directing them towards positive rates of induced population potential.

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CONCLUSION

The transformation process brought shining changing in the political, economical and social sphere thereupon inhabitants reacted amendment its demographical behavior. The aim on this topic is point out onto changes in movement population of the urban parts of the Kosice according to the size categories in years 1999 and 2005. At this stage itself town divided into twenty-two municipal sections. We have followed demographic characteristics: natural, migration and total increase – decrease residents in the year 1999 and 2005.

Values of all potentials (not induced population potential) in urban parts of the Kosice achieved 1 243 391 (in 2005) population per kilometre (100 %). Shares of the individuals urban parts itself were at intervals from 1.988 % (UP Saca) to 7.943 (UP Zapad). The highest values of population potential had following urban parts: Sidlisko KVP (7.024 %), Juh (6.395 %). Stare Mesto (6.193 %), Lunik IX (5.390 %), Myslava (5.232 %). Large number of population recorded urban parts like Sidlisko KVP, Juh, Stare Mesto that are located in the centre of town. Practically it means that have low value of distance from all others points of surveyed territory. Spatial units like Lunik IX, Myslava have high population potential, which is fixed nearness others urban parts. Perhaps we point out, that in models of population potentials applied in the area of Kosice has critical assignment combination factors: population and distance.

Population of the city according to urban circuits is located according to the western part of the town – primarily to urban parts: Zapad, KVP, Juh, Stare Mesto alongside the river Hornad especially in urban part Tahanovce and southern part, where river Hornad flows through the municipal part Nad Jazerom. The lowest density of population is in the northwestern part of Kosice, where the foothills (Volovske hills and Cierna Hora hills) are located. Accordingly, the lowest density of population is in the southern part of the city, which is situated in the fertile hollow basin (Kosicka kotlina). The area is ample in traffic and industrial areas (like U.S. Steel Kosice), which are combined with agricultural land.

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POPULAČNÁ DYNAMIKA A POPULAČNÝ POTENCIÁL KOŠÍC V ROKOCH 1999-2005

Zhrnutie

Populačný potenciál miest SR sa značne spomalil a vo väčšine miest dochádza k celkovému úbytku ich obyvateľstva vo všetkých veľkostných kategóriách. Podobne je tomu tak aj pri mestských častiach Košíc. Transformačný proces priniesol výrazné zmeny v politickej, hospodárskej a sociálnej sfére na čo obyvateľstvo reagovalo zmenou demografického správania sa. Cieľom tohto príspevku bolo poukázať na zmeny v dynamike obyvateľstva mestských častí Košíc podľa veľkostných kategórii v rokoch 1999 a 2005 ako aj ich populačný potenciál podľa jednotlivých vekových kategórií. Významné zmeny nastali v migračnom pohybe, čo sa prejavilo migračným úbytkom obyvateľov v mestských častiach, v ktorých sú lokalizované prevažne sídliskové monofunkčné areály. Naopak

vysoký migračný prírastok zaznamenávajú areály na okraji mesta, kde v súčasnej dobe prevažuje výstavba rodinných domov. Medzi týmito dvomi spomenutými regiónmi mesta dochádza v súčasnom období k dekoncentrácii obyvateľstva. Výsledkom prirodzeného a migračného pohybu je celkový pohyb obyvateľstva. Mestské časti Košíc môžeme rozdeliť na prírastkové (kde prevažuje migračný resp. prirodzený prírastok) a úbytkové (s prevahou migračného resp. prirodzeného úbytku). V Košiciach sme identifikovali 13 prírastkových, 8 úbytkových a 1 mestskú časť, v ktorej je vyrovnaná bilancia migračného úbytku a prirodzeného prírastku obyvateľov. Na základe rozmiestnenia mestských častí podľa celkového pohybu môžeme vyčleniť 2 základné oblasti:

1. Populačne depresná oblasť, pre ktorú je typický celkový úbytok obyvateľov (zaraďujeme tu mestské časti lokalizované prevažne v centrálnej časti mesta – Staré Mesto, Západ, KVP, Juh, Sever, Nad Jazerom, Ťahanovce, Dargovských Hrdinov).

2. Populačne rastová oblasť so zastúpením mestských častí s celkovým prírastkom obyvateľov (južný okrajový pás mesta s mestskými časťami – Myslava, Pereš, Luník IX, Lorinčík, Barca, Poľov, Šaca, Krásna, Vyšné Opátske, Košická Nová Ves. Na severe sú to mestské časti Kavečany, Džungľa a Sídlisko Ťahanovce.

Model populačného potenciálu, ktorý sme aplikovali na jednotlivé mestské časti Košíc môžeme vnímať ako ukazovateľ priestorového rozmiestnenia obyvateľstva, resp. skupín obyvateľstva, alebo ako prostriedok vhodný na posúdenie veľkosti interakcie medzi územnými jednotkami v sledovanom území, prípadne môžeme jeho hodnoty použiť ako vstupné dáta pre výpočet iných ukazovateľov, v ktorých sa populačný potenciál môže použiť ako „váha". Pre Košice sme skúmali populačný potenciál pre jednotlivé vekové kategórie, predproduktívnu, produktívnu a poproduktívnu ako aj zmeny hodnôt neindukovaného populačného potenciálu za roky 2005 a 1991. Na základe empirický výsledkov môžeme konštatovať, že najvyššie úbytky neindukovaného populačného potenciálu v sledovanom období vykazujú mestské časti, ktoré majú:

- centrálnu polohu v rámci mesta
- najvyšší počet trvalo bývajúceho obyvateľstva
- obyvateľstvo týchto mestských častí býva v rozsiahlych sídliskových komplexoch

Najvyššie prírastky v sledovanom období 1991 – 2005 neindukovaného populačného potenciálu majú mestské časti Sídlisko Ťahanovce, Pereš, Šaca, Luník IX.

- vysoké hodnoty neindukované populačného potenciálu v prípade Sídliska Ťahanovce sú ovplyvnené rozsiahlou výstavbou panelových bytov na konci 80. a začiatkom 90. rokov. Vplyv imigrácie mladých rodín a následné kladné hodnoty prirodzeného prírastku ovplyvnili pozitívne aj vývoj populačného potenciálu

- vysoké hodnoty neindukovaného populačného potenciálu v prípade Šace, Luníka IX a Pereša ovplyvnila predovšetkým dekoncentrácia obyvateľov z ostatných mestských častí Košíc do spomínaných častí -- Šace, Luníka IX a Pereša. Do mestskej časti Luník IX a Šaca bolo premiestnené obyvateľstvo z ostatných mestských častí Košíc, ktoré si neplnilo nájomné zmluvy voči mestu „tzv. neplatiči". Ostatné mestské časti sú vidieckeho charakteru a sťahuje sa do nich obyvateľstvo z „centra" mesta, ktoré sa vyznačuje vyšším ekonomickým statusom.

Populácia Košíc podľa urbanistických obvodov je lokalizovaná do západnej časti mesta – najmä do mestských častí Západ, KVP, Juh, Staré Mesto, pozdĺž toku Hornádu najmä v mestskej časti Ťahanovce a v južnej časti, kde Hornád preteká mestskou časťou Nad

Jazerom. Najmenšia koncentrácie populácie je v severozápadnej časti Košíc, kde zasahujú výbežky Volovských vrchov a Čiernej Hory. Taktiež je nízka koncentrácia obyvateľstva v južnej časti mesta, ktorá síce leží v úrodnej Košickej kotline, ale dominujú tu prevažne dopravné (areál letiska) a priemyselné plochy (U. S. STEEL Košice), ktoré sú kombinované s poľnohospodárskym využitím územia.

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