

Original article

## The regional differentiation of the demographic movements in the Republic of Macedonia

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### ABSTRACT

The Republic of Macedonia covers an area of 25,713 km<sup>2</sup> and according to data from the census conducted in 2002, it has a population of 2,022,547 inhabitants. In the past, the Republic of Macedonia was characterized by some significant demographic changes, including a decline in the average annual rate of population increase. The enhanced immigration movements and sudden decline in the rates of natural population increase have led to changes in distribution of the population and to a spatial differentiation in the population. The long period of transition in the country has been reflected in the spatial development of the country and its demographic processes and to relocation of the population. The different natural-geographical characteristics, unequal regional development potentials, unequal economic development, and demographic characteristics have led to changes in the demographic situation of certain regions. The regions that continually lose part of its population clearly differ from these regions that are characterized by an increased population which is leading to a greater concentration of people in certain location. Further decades with a declining birth rate, followed by a change in the values of population increase, together with migration movements, particularly from the rural and less developed economic regions, has resulted in a decline in the population. The different zones of depopulation and concentration in a simple way express the complex relationships in the population composition.

KEY WORDS: emigration, immigration, regionalization, spatial development, Macedonia

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### 1. Introduction

The overall socioeconomic events in the Republic of Macedonia had a major impact on the numerical dynamics of the population and its characteristics. The long process of transition had a particular impact as well as the "fragile" economy, which had its "recovery" period because of the interruption or the reshaping of the economic relations with the countries of the former Yugoslavia. This was followed by the events in Kosovo in 1999 and the conflict in Macedonia in 2001, which caused a spatial displacement of the population. It should be emphasized that emigration and working abroad (called *pechalbarstvo* in Macedonian) is not unusual for the Macedonian people. Thus, in terms of an extended transition, high unemployment of over

30%, and a range of social problems and ethnic tensions, migration was implied and understood as the ultimate necessity, in order to open new life opportunities, or as was shown by PULJIZ (1977) "the awareness of the external opportunities: encourages aspirations, and then, it encourages the potential migrants of walking a world distance; and when one goes, emigration takes place along the tracks of family, neighbourhood, friendship; it goes "from the Know to the Know", as the Irish say, and so, the tradition of emigration occurs.

In the period from 2002 to 2013, despite the positive net migration in international migration, Macedonian citizens participated with only 15% of the total immigrated population, but with 27% of the total emigrated population (Tab. 1).

Table 1. Migration movements of the population of the Republic of Macedonia in the period 2002-2013  
(source of data: www.stat.gov.mk)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Internal migration	9117	11058	11495	11411	10740	9438	8964	7785	7276	7612	8334	7915
International migration												
<b>Immigrated</b>	1257	1145	1381	1491	3273	2181	1609	1857	2715	3211	3787	3991
Citizens of the Republic of Macedonia	723	567	543	524	545	366	219	259	303	349	396	490
Foreigners with temporary residence	534	578	838	967	1029	861	557	1000	1356	1747	2072	1941
Foreigners with an extended stay	-	-	-	-	1699	954	833	598	1056	1115	1319	1560
<b>Emigrated</b>	141	144	669	1300	1108	240	751	792	1007	1290	1415	1041
Citizens of the Republic of Macedonia	81	122	656	1282	1073	224	740	769	923	1143	1330	945
Foreigners	60	32	13	18	35	16	11	23	84	147	85	96
<b>Net migration</b>	1116	1001	712	191	2165	1941	858	1065	1708	1921	2372	2950

If we add the changes in the natural increase of the population, the situation is even more dramatic. Namely, in the second half of the last century, the population natural increase rate worldwide as well as in our country has faced the tendency of decline. In the Republic of Macedonia, it decreased from 26.3‰ in 1948 to 13.6‰ in 1981, to 4.8 ‰ in 2002, and for the period 2002–2013 it decreased by 2.4‰. In particular, the greatest decline in the population natural increase can be noticed by the eightieth year of the last century onwards. The reasons are numerous, from economic, demographic, social and medical to personal, but the fact is that its dynamics, combined with emigration, unfavorably affects the population dynamics of the Republic of Macedonia. In the period from 2002 to 2013 the population natural increase is negative in Pelagonia (-2.6‰) and in the Eastern Region (-0.8‰), and the highest value is found in Pollog (4.7‰) and the Skopje region (4.8‰). These last two regions are experiencing the greatest change in the population number of 4.6 or 5.9%, which is two to three times the total change in the number of the population noticed in the Republic of Macedonia. The increase of the population number in Skopje and the Polog region has a different background. In the Skopje region, the positive net migration and the positive population natural increase indicate a typical immigration area with a high volume for the reproductive population, while in the Polog region, because of net negative

migration, the increase is largely based on the biodynamics of the population. In particular, this reproductive pattern, typical for Albanian, Turkish and Roma population is the basis for the population increase in the North east region, because, the population natural increase from 2.9‰ is due to the expanded model of natural increase in the municipalities Kumanovo and Lipkovo, where the Albanian population represents a relatively high share in the total population of the region (APOSTOLOVSKA TOSHEVSKA & MADJEVIKJ, 2013).

According to demographic movements, the total population in the Republic of Macedonia has experienced some changes. In 1994, for the first time, the Republic of Macedonia, faced a reduction of the total population number that was largely due to the new methodology used in the conducted census, according to which the total population does not include Macedonian residents that stayed abroad for more than one year during the census. Following the same methodology, the census was conducted in 2002 and according to this census data, among all the official censuses from 1921 to 2002, this was the smallest annual increase with only 9,577 inhabitants, i.e. an overall increase in the population of 76,615 inhabitants (STOJMILOV, 2005). Thus, a total of 2,022,547 inhabitants lived in the Republic of Macedonia in 2002. According to the population estimates for 2013, the country recorded 2,064,032 people, or an increase of 41485 people compared to 2002. The reasons for this

low increase (except the new methodology used while the conduction of the census) is the continued decline in the population natural increase and the increased wave of emigration abroad of an enlarged number of Macedonian citizens.

## 2. Study area and methods

In this article, the area was divided into regions based on demographic aspect, and special areas were defined based on the application of mathematical calculations, which considered the emigration or immigration characteristics and their subtypes (Tab. 2). The Republic of Macedonia has had a

positive migration balance for years, mainly due to the immigration of foreigners on a temporary or extended stay, and basically, the domestic population emigration, this paper focuses only on the analysis of the migratory movements of the citizens of the Republic of Macedonia.

The analysis was made using the FRIGANOVIĆ typology (1972-1973), modified by the Clark method. According to this typology, all types of migratory movements of the population can be put down in eight categories determined by the dynamics of the population natural increase and the flow of the migration movement of the population.

Table 2. Types of general population movements based on population natural increase and net migration by Friganović, according to a modified Clark model (source: Vojković, 2007)

Emigration types (E)		
E1	Increase established by the census, positive p.n.i., negative n.m.	Emigration
E2	Decline established by the census, positive p.n.i., negative n.m., the p.n.i. rate is higher than the rate of population decline	Depopulation
E3	Decline established by the census, positive p.n.i., negative n.m., the p.n.i. rate is lower than the rate of population decline	Emphasized depopulation
E4	Decline established by the census, negative p.n.i., negative n.m.	Disappearing
Immigration types (I)		
I1	Increase established by the census, positive p.n.i., positive n.m.	Expansions by immigration
I2	Increase established by the census, negative p.n.i., positive n.m., the increase rate is higher than the rate of p.n.i.	Regeneration caused by immigration
I3	Increase established by the census, negative p.n.i., positive n.m., the increase rate is lower than the rate of p.n.i.	Poor regeneration caused by immigration
I4	Decline established by the census, negative p.n.i., positive n.m.	Very poor regeneration caused by immigration
Note: p.g. – population natural increase; n.m. – net migration		

Due to changes in the administrative-territorial organization, it was necessary to note the spatial and temporal component in the data analysis, particularly in terms of their full comparison. In terms of the lack of data on one of the demographic dynamic components (natural or mechanical) it was necessary to access the problem using the indirect calculation method. For determination of the net migration in the municipalities, for the period 1971-1981, the life-statistical method was used because of the absence of particular data for the calculations. It was similarly proceeded for several municipalities in the last analysed period (part of the municipalities belong to the Skopje region).

For the purpose of this research, we made an analysis of the change in number of the population, the net migration and the population natural increase, for the eight statistical regions of the Republic of Macedonia according to the NUTS3 classification, for each municipality in the period 2002-2013, according to the NUTS4 classification and the corresponding administrative-territorial

organization for the period 1971-1981. Due to changes in the administrative-territorial organization of the country, special attention is given to net migration and the population natural in the period 2002-2013 year.

In the Republic of Macedonia, according to the administrative-territorial organization of 2004, a total number of 84 municipalities were determined, and with the changes in 2013 their number was reduced to 80 municipalities. In the analysed period from 1971 to 1981, the administrative organization consisted of thirty municipalities.

The analysis is based on census data (1971, 1981 and 2002) and population estimates for 2013, and vital statistics and migration statistics published by the State Statistical Office of the Republic of Macedonia. In the year 2013, data were used based on estimates of the population number because, a population census has not been conducted since 2002 in the Republic of Macedonia.

The computer package ArcGIS. was used for the preparation of the cartographic figures.

### 3. Results and discussion

The net migration and population natural increase occur as indicators of the socio-economic changes and have different values for each of the municipalities. Based on the analysis of the population natural increase and the migration movement, we can discern a trend in the number

of the population in this particular area. The detailed analysis indicates some significant differences in terms of population development between the regions and municipalities and their grouping into several migration types. The regional differentiation of the demographic movements in the Republic of Macedonia in the 1971-1981 and 2002-2013 periods shown Figs 1-5.

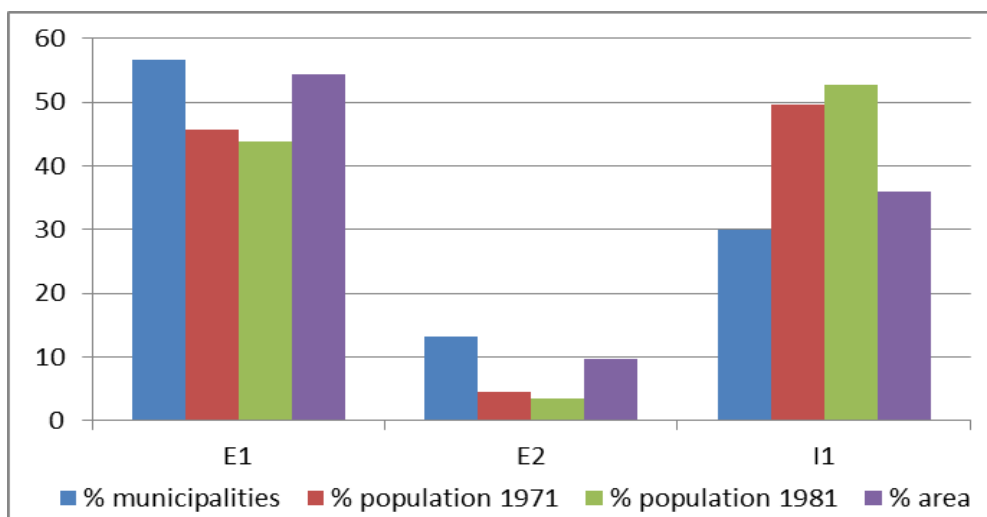


Fig. 1. Distribution of municipalities, population and area according to migration intensity in the period 1971-1981 (data calculated by the authors, according to SSORM data)

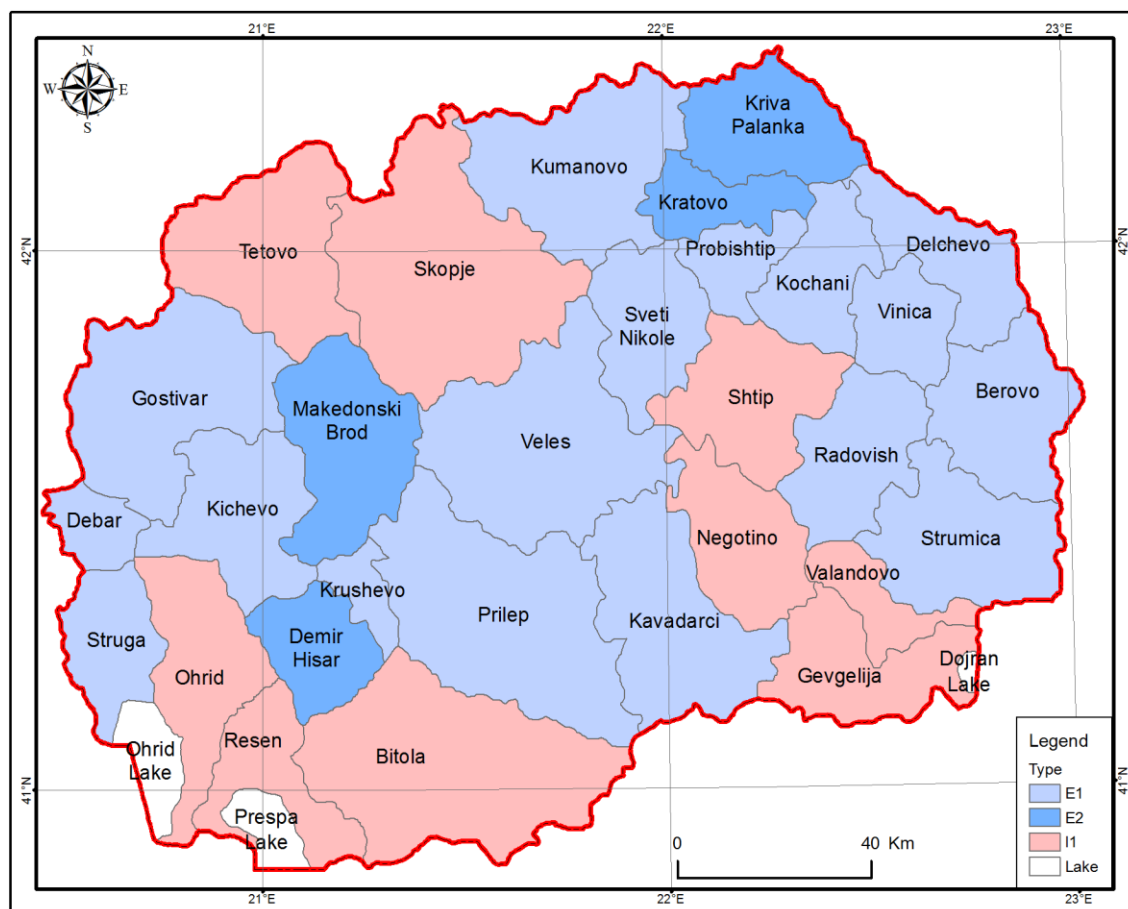


Fig. 2. Migration types by municipalities in the period 1971-1981 (calculated by the authors, according to SSORM, map author, Gorin)

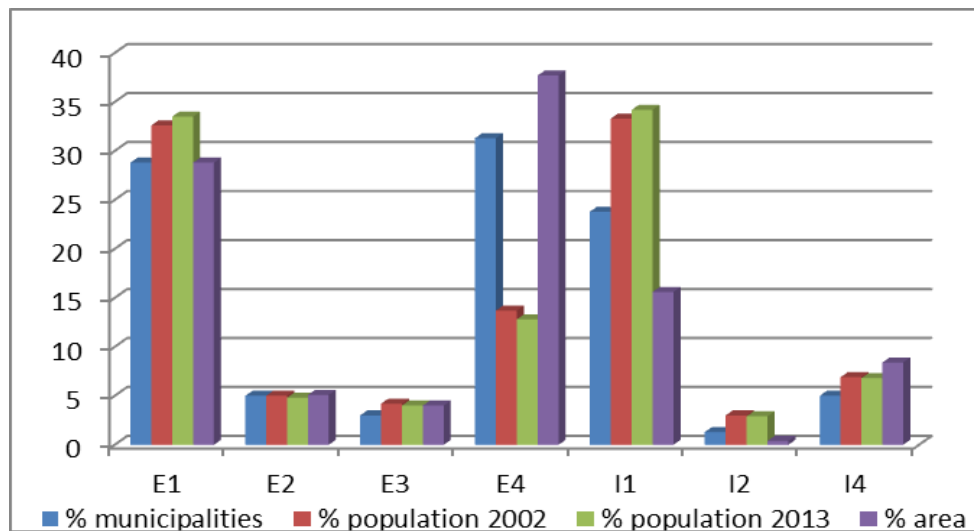


Fig. 3. Distribution of municipalities, population and area according to migration intensity in the period 2002-2013 (calculated by the authors, according to SSORM data)

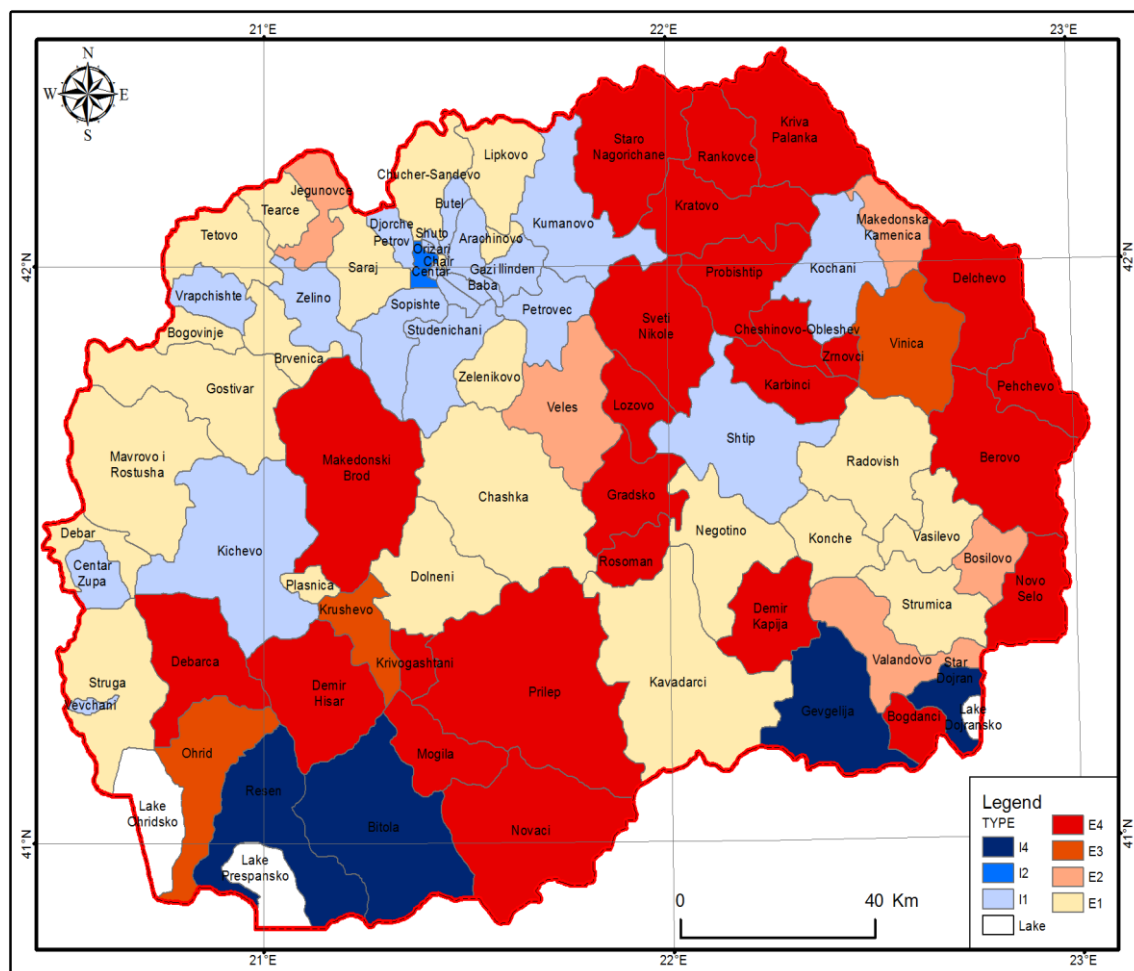


Fig. 4. Migration types, by municipalities in the period 2002-2013

(calculated by the authors, according to SSORM, map author, Gorin)

The population has moved to other regions and municipalities, or outside the country, for various reasons (employment, marriage, family reasons, unfavorable living conditions, etc.), which has led to negative net migration and emigration characteristics for most of the municipalities in the Republic of Macedonia, and this represents a significant portion

of the total number of the population. Areas with an emphasized emigration cover 75.6% of the total territory of the Republic of Macedonia and 55.3% of the population lived in these areas in 2013. For more than three decades emigration areas developed into an area with a strong emphasized emigration characteristic indicating emigration consistency.



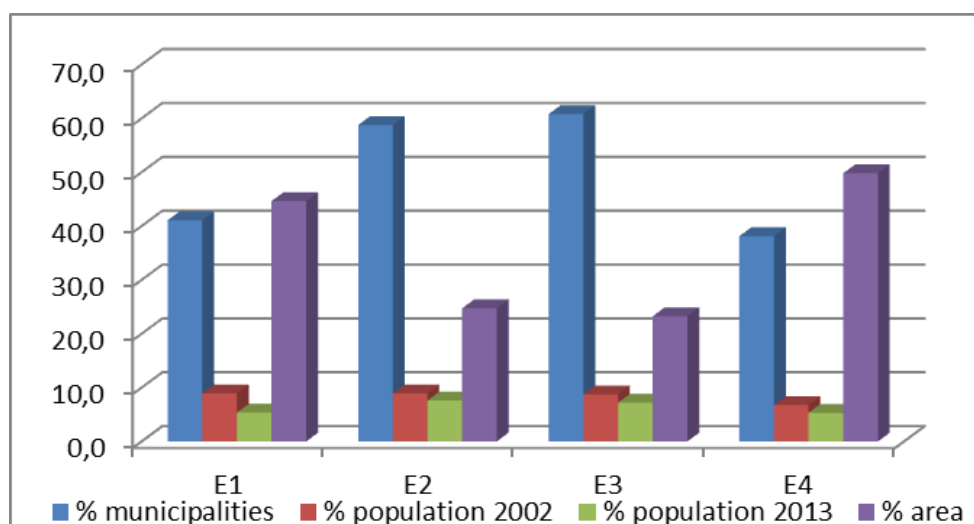


Fig. 5. Distribution of municipalities, population and area according migration intensity, I subtypes, Emigration type (calculated by the authors, according to SSORM data)

The internal migration movements are evident at all times, mainly from rural to urban settlements, from one city to another. A large scale internal migration flow was recorded in the sixties and seventies of the last century, as a result of the economic development of the country. This was a time of initiation of a large migration mass from the rural areas to the cities and obvious population growth of urban settlements. According to vital-statistical method, in this period, the rural areas marked a negative net migration of over 17,5000 people (DASKALOVSKI, 1998). In the period 1971-1981, this wave of internal migration was less intense, primarily because most of the rural population had already moved from the villages to the cities. Emphasized migratory movements were recorded in the Skopje valley mainly to the capital Skopje. In particular, in 1966, one third of the industrial plants in Macedonia were located in this area (UZUNOV, 2001), and the trend of industrial construction continues to today. The indicators suggest that, nearly half of the total investment in capital assets in the industry was realized in Skopje Valley in the last few years, while the industry in the Skopje region employs one third of the total number of industrial workers in the Republic of Macedonia (APOSTOLOVSKA TOSHEVSKA, 2009).

Significant internal displacement is recorded at the beginning of the 21st century, when the conflict between Macedonian security forces and Albanian separatists, caused the population of Tetovo, Skopje and Kumanovo region to move. According BORNAROVA & JANEVSKA (2012), the number of the population involved in this kind of migration movements was around 76,000.

Most of the international migratory movements happened in the period after 1964, until the mid-

seventies of the last century. Initially the migrations started as departures for temporary work abroad, and later became permanent migration. *"But the continued drain of the population in the Republic of Macedonia continued. From 1989 to 1994, about 50,000 inhabitants<sup>1</sup> left the country, and in the last decade of the last century, especially after 1990, the existing economic and political circumstances were the reason for the emigration of around 200,000 migrants"* (BORNAROVA & JANEVSKA, 2012). The most attractive destinations for migrants are Western European countries and USA, Canada and Australia. According to EUROSTAT data for the period from 1998 until 2011, 170,000 citizens of the Republic of Macedonia migrated to just three European countries: Germany, Italy and Switzerland (MITKOVSKA, 2014). It is argued that the attractiveness of places increases with the successive fulfillment of these factors; but on the other hand, the more factors a migrant seeks to fulfill for his or her destination selection, the fewer the possible choices (NIEDOMYSL, 2010).

Emigration of the young and the working population of reproductive age, along with changes in the age structure of the population and the increase of the participation of the population in the mature and old age were accompanied by declining in the birth rates and population natural increase. In some of the regions and municipalities, the number of deaths exceeded the number of births for a long period of time. Particularly alarming is the situation with the emigration of young, educated and qualified people whose intense emigration began sometime after 1990. Somewhere at the beginning of the 21st century, it is estimated

<sup>1</sup> Strategy for Demographic Development of the Republic of Macedonia, 2008-2015

that 15,000 to 20,000 people who had completed their university education remained abroad (JANEVSKA, 2003). That is more than 15% of the total number of population over 15 years with a university education in the country<sup>2</sup>. Between 1995 and 2000, the number of scientists and engineers decreased by more than 70%<sup>3</sup>. The globalization and the modern trends in promoting and gaining new experiences and knowledge certainly imposed the need of free movement, which is considered as a normal phenomenon, even including the outflow of experts, however *"the free circulation must be a two way street because only then can it be considered a normal phenomenon..... a brain drain is unfortunately a one way street"* (ŽUPANOV, 1997).

From a demographic point of view, the situation in the areas affected by emigration is not favorable because most of the municipalities belong to the E4 type that is characterized by net negative migration and also a negative population natural increase, which leads to a reduction in the total number of people living in these areas and means that these areas are in the process of a population extinction. In particular, over one third of the territory of the Republic of Macedonia is on the edge of population sustainability (E4), almost half of the area characterised by its emigration indicators is in this subtype. Most of the municipalities are in Pelagonija, East and Northeast regions of the Republic of Macedonia.

The second place, according their participation is the E1 type the municipalities that have a net negative migration, but the natural component of the large dynamics still has a positive value and provides an increase in the number of population. In terms of the current features of the biodynamic of the Macedonian population some of the municipalities can easily progress to the E4 subtype. The high rate of the population natural increase in municipalities, mainly inhabited by ethnic Albanians compensates the number of migrants, but considering the general trend of decreasing in the birth rate, it is reasonable to expect a negative progression to higher emigration subtypes. The distribution of the population in the period 2002-2013 has not changed much and most of the population is concentrated in the municipalities of emigration type E1.

Immigration areas are the areas in the country that attract the population because of the high

level of development compared to other areas. In these areas the number of immigrants is much higher than the number of emigrants, which leads to a net positive migration. They have grown out into areas with a higher population concentration, and so are 30.1% of the municipalities which cover 24.4% of the total area of the Republic of Macedonia and 44.7% of the total number of the population living in the country (Fig. 6). This group of municipalities changes, depending on the natural increase in the population rate and the change in the total population number.

The analysis of the immigration subtypes indicates that most of the municipalities and most of the population are located in the zones of type I1. Most of the municipalities are around or within the territorial scope of the capital Skopje. With a net positive migration, a positive population natural increase and continuous increase in the number of the population are 22.6% of the municipalities in the country (Fig. 7). In the municipalities of the immigration type, the growing number of the population in large part occurs because of the high number of immigrants.

In the Republic of Macedonia, 11.4% of the municipalities are characterized by a net positive migration, but a large decline in the fertility rate is noted, and during the analysed period, these municipalities are characterized by a negative population natural increase (Fig. 8).

With an unfavorable demogeographic development, an extensive emigration, negative population natural increase and reduced number of the population are affected municipalities with a small number of population, with the head office of the municipality settled in a rural settlement, but this characteristic is also inherent for municipalities with a greater number of population, where the head office of the municipality is a bigger urban settlement.

In the period 2002-2013, most of the regions belong to the emigration type (Fig. 9). The situation in the Eastern region is alarming because its demographic indicators, net migration and population natural increase it belongs to type E4. The Northeast, Polog and Southeast region are among the subtype E1 and the Southwest and Vardar region are subtype E2. The only region characterised by immigration flows is the Skopje region. Its municipalities belonging to the subtype I1 occupy only 4.5% of the territory of the Republic of Macedonia, but in 2013 absorbed even a fifth of the population in the country. This only confirms the epithet of the distribution of population in the Republic of Macedonia that is how it is said "developed head with under developed extremities".

<sup>2</sup> Migration profile of the Republic of Macedonia in 2008, The Government of the Republic of Macedonia, 2009

<sup>3</sup> UNESCO project Piloting Solutions for Alleviating Brain Drain in South Eastern Europe through the migration profile of the Republic of Macedonia in 2008, The Government of the Republic of Macedonia, 2009

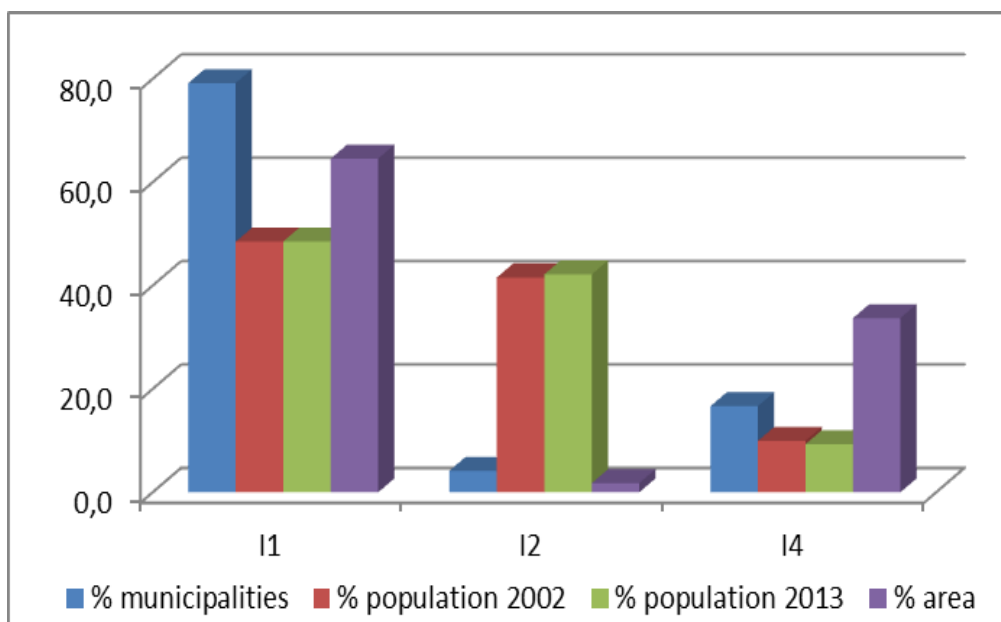


Fig. 6. Distribution of municipalities, population and areas in the immigration areas, in % (calculated by the authors, according to SSORM data)

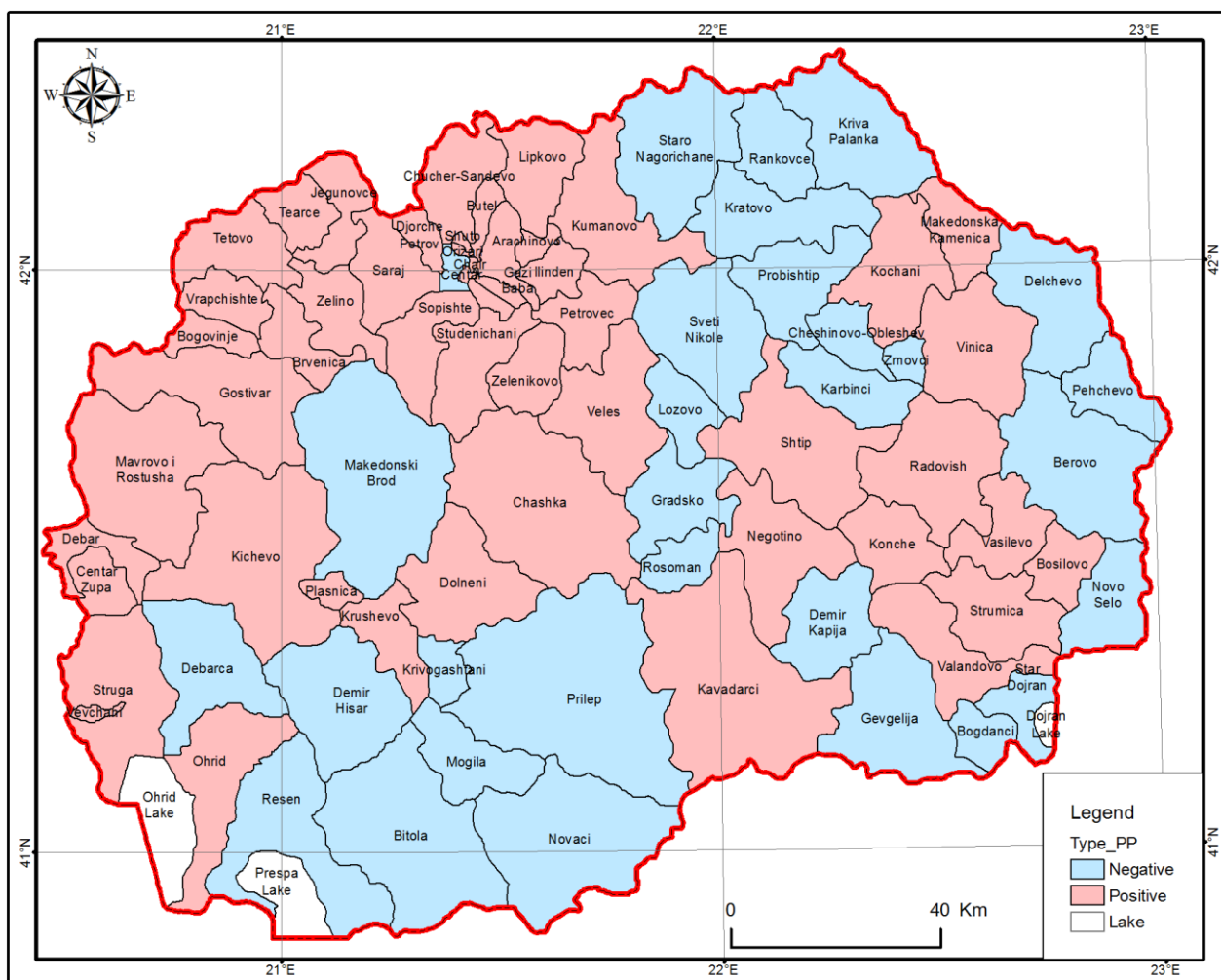


Fig. 7. Values of the population natural increase by municipalities, for the period 2002-2013 (calculated by the authors, according to SSORM, map author, Gorin)



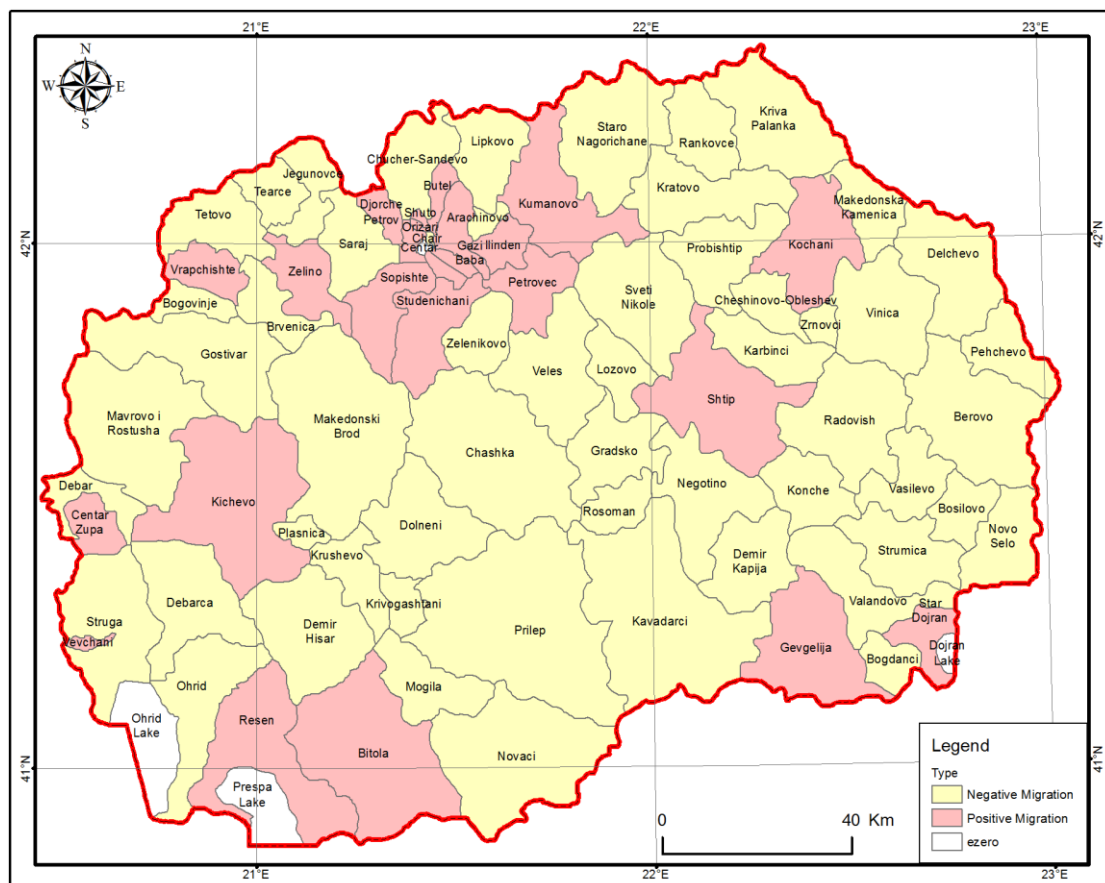


Fig. 8. Values of net migration by municipalities, for the period 2002-2013  
(calculated by the authors, according to SSORM, map author, Gorin)

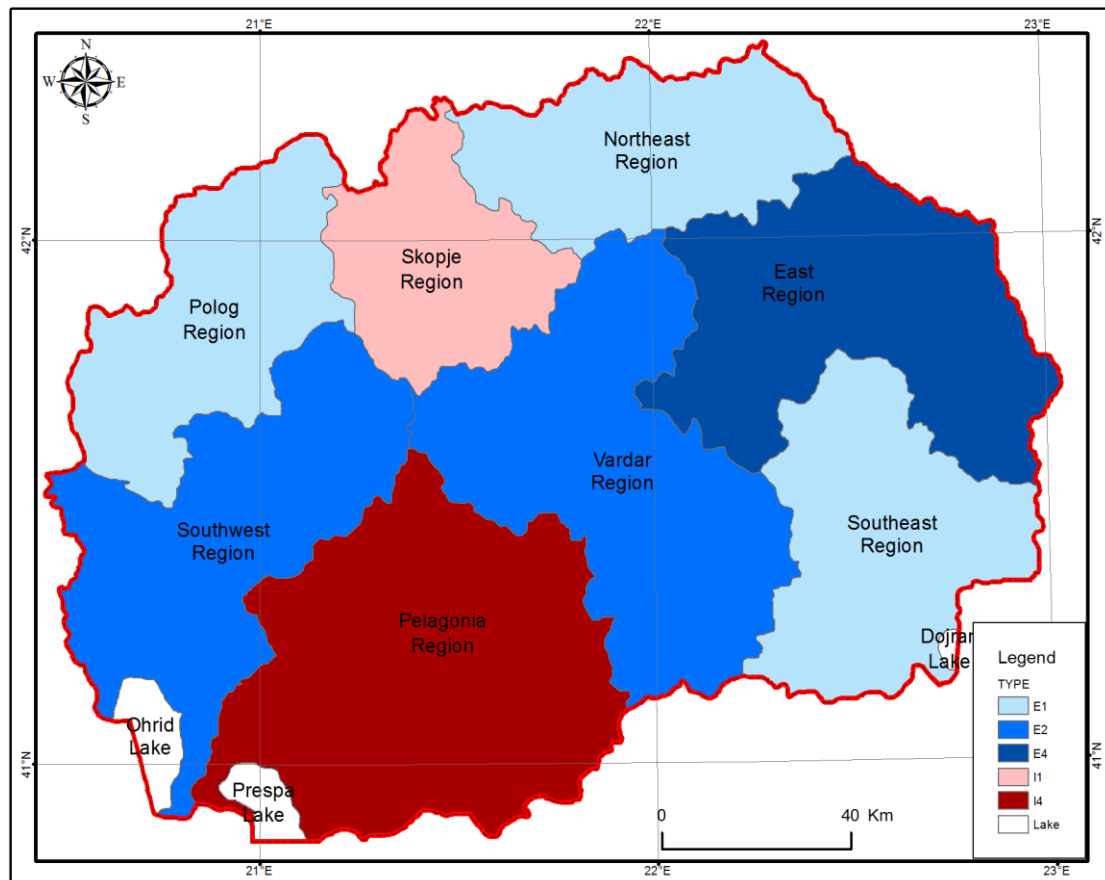


Fig. 9. Migration types, by regions, in the period 2002-2013  
(calculated by the authors, according to SSORM, map author, Gorin)

This way, the migration movements created the image of a large disproportion of the population. In 455 settlements that counted from one to fifty inhabitants and presented 25.8% of the total populated areas lived only 0.5% of the total population (MADJEVIKJ ET AL., 2013). Only the five largest urban areas<sup>4</sup> cover 1/3 of the total population in the country.

#### 4. Conclusion

Considering the fact that the Republic of Macedonia faces serious demographic changes, this research has a practical significance in consideration of the demographic potential in its territory as one of the prerequisites for their future sustainable development.

The population in the Republic of Macedonia in the period 2002-2013 increased by 2.1%, or 0.19% of the average annual rate. The permanent reduction in the population natural increase, which in 2013 reached a minimum value of 1.9 ‰ is more than obvious. There is a differentiation of the space depending on the change of the total number of the population, net migration and population natural increase. Based on this, municipalities with emigration and immigration characteristics are noticeable.

In half of the municipalities there is a negative population natural increase. 31% of the municipalities are characterized by a concentration of the population, i.e. immigration characteristics. Skopje stands out as the most attractive to the migrants, as the state capital.

In particular, the fact that a large number of municipalities are within the subtype E4, which leads to population desertification of entire areas.

The population imbalance, seriously affects the population, and the overall economic sustainability of the area. The marginalized biodynamic in a large part of the territory of the Republic of Macedonia carries far-reaching demographic and socio-economic consequences, highlighting the regional differences, unequal tendencies of development, which is also a limiting factor for achieving economic and social development in a country. An additional problem is the ageing population, and the social aspects of an ageing population are changing the status of the category, from the active population into maintained, and from independent into a dependent one, which burdens

the state with the need for social and medical assistance for the individuals.

Therefore, it is necessary to make some change in the territorial-administrative organization of the country, which would strengthen the hierarchical position of particular settlements in the system of settlements and their role in the spatial planning, organization of space and the satisfaction of the needs of individuals and society will increase (APOSTOLOVSKA TOSHEVSKA & MADJEVIKJ, 2012). The properly organized settlement network and more balanced distribution of the economic capacities, including rural areas, can contribute to efforts to reduce migration, even in terms of encouraging the daily migration of the labor force, because daily migration is certainly more rational than permanent migration of population.

The current efforts of the Government for economic development are in this direction and involve investing in infrastructure in the less developed areas, establishing technological development zones and offering favorable conditions in order to bring foreign investors. At the same time, in this type of activities are focused all the efforts of subsidizing the agriculture and stimulating small businesses that should initiate a self-employment of young population, primarily the financial subsidies for entrepreneurs that will employ persons under the age of 29, as well as education and stimulation of the development of rural and alternative tourism. This way it is expected for the population to remain in their place of residence and to be included in the population revitalization of a particular area.

#### References

- Apostolovska Toshevska B. 2009. The industry and the sustainable development. *Proc. Symp. "Geography and sustainable development"*, Ohrid: 253-267.
- Apostolovska Toshevska B., Madjevikj M. 2012. Demographic components of the Pelagonia region as benchmarks in the formation of the labor contingent. *Demography*, IX, Belgrade, Serbia: 289-300.
- Apostolovska Toshevska B., Madjevikj M. 2013. Problems with the demographic ageing in the hilly, hilly-mountains and mountainous village settlements in the Northeast region. *Proc. Int. Sci. Symp. "Hilly mountain areas-problems and perspectives"*, 1, Ohrid, Macedonian Geogr. Soc.: 313-324.
- Bornarova S., Janeska V. 2012. Social impact of emigration and rural-urban migration in central and eastern Europe: final report – European commission, DG employment, social affairs and inclusion- GVG.
- Daskalovski V. 1998. The process of demographic ageing of the population in the Republic of Macedonia. *Geo. Reviews*, 32-33, Macedonian Geogr. Soc., Skopje: 93-98.
- Friganović M. 1972-1973. Types of population movement and exodus areas in SR Croatian. *Population*, 3-4, & 1-2 cdi-idn, Belgrade: 177-189.

<sup>4</sup> Skopje, Bitola, Kumanovo, Prilep and Tetovo with more than 50,000 residents are considered as major cities in terms of the classification of the cities in Macedonia (Stojmilov, 2005)

- Janeska V. 2003. A potential intellectual emigration from the Republic of Macedonia. *Economic development*, Economic Institute Skopje, 5, 1-2-3: 65-80.
- Madjevikj M., Apostolovska Toshevska B., Iliev D. 2013. A process of demographic and economic polarization in the Republic of Macedonia. *Geographica Pannonica*, 17, 2, Novi Sad, Serbia: 46-53.
- Migration profile of the Republic of Macedonia in 2008*. The Government of the Republic of Macedonia, 2009.
- Mitkovska M. 2014. *A third generation of Macedonians is being born outside of the homeland, from Macedonia they will inherit only a passport and right to vote, a free press*. Skopje, 05.05.2014.
- Niedomysl T. 2010. Towards a conceptual framework of place attractiveness: a migration perspective, *Geografiska Annaler*: ser. B, Human geography, 92, 1: 97-109.
- Puljiz V. 1977. *The exodus of farmers, center for rural, city and area sociology*. Sociology of village's library, 5, Zagreb.
- SSORM. Census of the population, households and dwellings in the Republic of Macedonia, 1994.
- SSORM. Census of the population, households and dwellings in the Republic of Macedonia, 2002.
- SSORM. Regions of the Republic of Macedonia, regional yearbook, 2012.
- SSORM. Statistical yearbook of the Republic of Macedonia, 2011.
- Stojmilov A. 2005. *Socioeconomic geography of the Republic of Macedonia*. FNSM, Skopje.
- Strategy for demographic development of the Republic of Macedonia 2008-2015*.
- UNESCO project piloting solutions for alleviating brain drain in South Eastern Europe through the migration profile of the Republic of Macedonia in 2008. The Government of the Republic of Macedonia, 2009.
- Uzunov N. 2001. *The economy of the Republic of Macedonia from 1945 to 1990*. MASA, Skopje.
- Vojković G. 2007. *Population as an element of regionalization of Serbia*. Belgrade.
- www.stat.gov.mk
- Županov J. 1997. *The loss of human resources and cultural capital due to emigration to the national program for demographic emigration* (Vojnović et al.). Ministry of Development and Reconstruction, Zagreb: 103-112.