
**CHARACTERISTICS OF THE NATURAL MOVEMENT OF THE POPULATION IN
REPUBLIC OF NORTH MACEDONIA, 2018**

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Abstract: The aim of this study is to analyse the demographic components, with focus on the changes that occur in the number of the population, the density by which is the country populated, the natural flow (movement) of the population, emphasis on the natural growth of the population. As elsewhere in the world, the population in the Republic of North Macedonia as well plays a main role and it is the main factor for the growth and development of the country. However, the population is subject to change and growth depending on various factors such as natural, economical and social factor. The demographic development is expressed through the indicators of the components of the natural movement: natality, fertility, mortality, etc. The number of the population is one of the key factors that is influencing the socio-economic development. As the population is both productive on one side and consumer of material goods on the other, production and consumption depends on the number of the population. Compared to the historical development of human society, in the Republic of North Macedonia, the role of the population in the production process has changed. These changes are most noticeable in the last decades, when the technical-scientific progress has taken a big step, thus significantly affecting the population-production ratios. At the end of the second millennium and the beginning of the third one in North Macedonia's geographic area, significant changes have taken place in the socio-economic plan and especially in the demographic one of its population. Special emphasis is given to the natural movement of the population, which affects the movement of the total population in the Republic of North Macedonia. In this paper we will treat the natural increase of the population in the Republic of North Macedonia for the period from 1994 to the present day, namely its ratio by nationality. Of particular importance in this paper are the spatial and national differences of the natural population movement in the Republic of North Macedonia, and mainly to present more clearly these differences, we have analyzed the latest 2018 data by the Statistical Office of the Republic of North Macedonia for the natural increase of the population of the municipalities, which we have presented in tabular, graphic and cartographic form. Given the differences in natural increase within the country, the expected results are foreseen in the discovery of relevant information about their changes, their trends, and the interaction between the basic indicators obtained by applying relevant statistical parameters and those that portray the development of Republic of North Macedonia over a given period of time. This paper attaches particular importance to the aforementioned demographic features during the period 2003 to 2018 at the state level.

Keyword: population, birth, death, natural increase, ethnicity

1. INTRODUCTION

The study of demographic issues is very important for social understanding and development of every country and people. In every country demographics, as a science on complex development of the people, holds a decent place among social sciences. Also, the need for interdisciplinary approach raises for the study of people.

These two demographic dimensions mentioned above are contrarily dependent on each other, from which flow populative trends of an area of a whole country. When it comes to numerical dynamics of people in a municipality, rural or urban area, it may be observed only through natural/ biological movement of population, and also through mechanic/ migrational movement of population. Lately, especially in the last two decades, between 2003-2018, which are analyzed on this work, it is noticed that the natural movement of the population decreases, but with physical differences in terms of birth rate and death rate. All this as a consequence of the heterogeneous national economic composition of the population. For this reason, this work is dealing with the natural movement of the population of North Macedonia, exactly in the period between 2003-2018. This work will focus on birth rate, death rate and natural increase. Mainly, death rate is analyzed in terms of age and gender, ethnicity and causes of death.

2. THE NATURAL MOVEMENT OF THE POPULATION

The first official registrations of the population in North Macedonia are done since 1921. Since that time, there has been a huge increase of the number of population. Regarding the period which is being treated (between 2003-

2018), one may notice a difference in the overall number of the population. In the last two decades, the period between 2003-2018 has marked an increase of the number of residents (37967 residents). From 2 036 386 residents in 2003, the number increased to 2 074 353 residentst in 2018.

The natural movement of the population is taken from official statistical data for newdbn births and deaths, continually with regard to the former component.

3. BIRTH RATE

The birth show that birth rate of the population of North Macedonia has marked decrease. Between 2003-2006 11,7 % or 28 860 births has been recorded, and between 2015-2018 10,7% or 22 291.

Table 1. Natality of population of NMK, 2003-2018

No.	Period	2003-2006	2007-2010	2011-2014	2015-2018
1.	Births	95 440	93 613	93 072	89 164
2.	‰	46,9 ‰	45,6 ‰	45,1 ‰	43,0 ‰
3.	Averagely/year	23 860	23 403	23 268	22 291
4.	‰	11,7 ‰	11,4 ‰	11,3 ‰	10,7 ‰

Source: SSO, 2003-2018

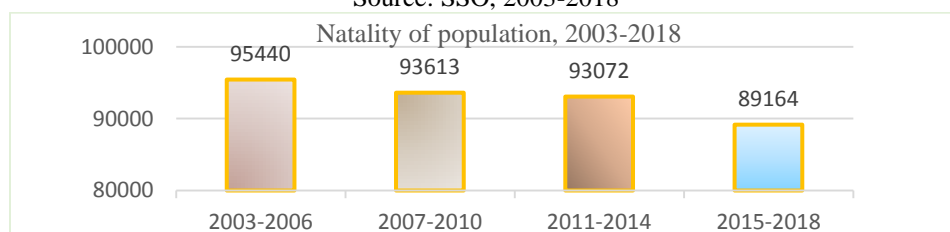


Figure 1. Natality of population of NMK, 2003-2018

From the data it may be noticed that the highest birth rate is i the period between 2003-2006 with 11,7% (highest value: 13,3 in 2003), while the lowest value in the period between 2015-2018, specifically in 2018 with 10,3%.

Later on, the birth rate data continually marks decrease.

4. DEATH RATE

Overall Death Rate

Apart from birth, imigration, and emigration, a huge impact on the difference of the overall number of population have death rate, aging, different diseases, accidents, natural disasters, wars and so on. From the data shown in the table, in the period between 2003-2018, one may notice the lowest value of death rate 8,9% is recorded in the period between 2003-2006. After that the values record increase, with 9,4% in the period between 2007-2010, which peaks 9,8% in the period between 2015-2018.

Table 1. Mortality of population of NMK, 2003-2018

No.	Period	2003-2006	2007-2010	2011-2014	2015-2018
1.	Death	72 986	76 749	78 516	80 927
2.	‰	35,8 ‰	37,5 ‰	38,1 ‰	39,1 ‰
3.	Averagely/year	18 246	19 187	19 629	20 231
4.	‰	8,9 ‰	9,4 ‰	9,5 ‰	9,8 ‰

Source: SSO, 2003-2018

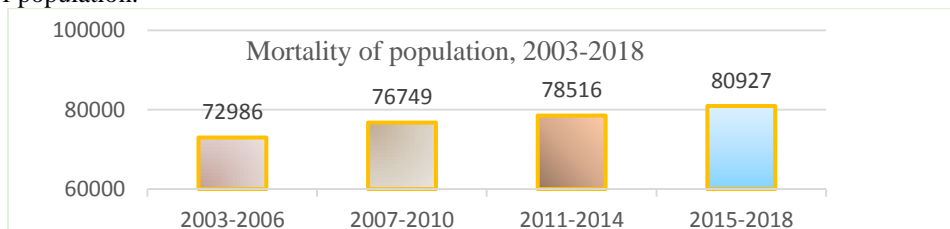


Figure 2. Mortality of population of NMK, 2003-2018

According to the official data, the overall death rate record increase in the period between 2003-2018 with 7941 deaths or 3,3%, or 1985 or 0,9% on average. Among others, this increase shows the weight that the olders hold in the number of population.

The Death Rate According to Age and Gender

It is fair to treat the data of death rate according to age and gender, because death is process which does not choose age or gender. These structures are reflected in the table below.

From the table above we can see that all age levels have impact on the overall number of deaths. These data show that in the period between 2003-2018 the is increase of 7941 deaths in general. While according to gender, there is increase of the number of deaths of both genders. Males marks increase with 2904 while females with 5037 deaths.

The structure of deaths according to age records decrease in general from 2003 to 2018, with the only exception of age above 75 years, which records increase.

Table 2. Deaths by Age group and Gender in NMK, 2003-2018

No	Period Age group	2003-2006			2007-2010			2011-2014			2015-2018		
		Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1.	under 1 year	1 160	655	505	920	520	400	872	474	398	794	419	375
2.	1-4	148	84	64	111	58	53	99	53	46	93	59	34
3.	5-14	211	131	80	150	91	59	127	79	48	153	94	59
4.	15-24	588	401	167	531	383	148	404	279	125	346	250	96
5.	25-34	824	576	248	767	544	223	683	458	225	659	436	223
6.	35-44	1 820	1 182	637	1 667	1 063	604	1 487	952	535	1485	971	514
7.	45-54	5 616	3 797	1 819	5 198	3 406	1 792	4 779	3 158	1 621	4 199	2 749	1 450
8.	55-64	9 754	6 184	3 570	10 302	6 543	3 759	10 970	7 136	3 834	11 212	7 241	3 971
9.	65-74	20 100	11 160	8 940	19 776	11 076	8 700	17 947	10 040	7 907	18 468	10 541	7 927
10.	over 75 and unknown	32 790	15 132	17 658	37 327	16 840	20 487	41 157	18 444	22 713	43 518	19 441	24 077
11.	Total	72 986	39 297	33 689	76 749	40 524	36 225	78 525	41 073	37 452	80 927	42 201	38 726

Source: SSO, 2003-2018

The age group under one year, or infant deaths we can notice that from 1160 deaths in the period between 2003-2006, the number has decreased to 794 deaths between 2015-2018. This means that the death rate has decreased for 366 deaths. The age group 1-4 from 148 deaths in the period between 2003-2006, has decreased to 93 deaths between 2015-2018, which means has decreed for 55 deaths. The age group 5-14 from 211 deaths in the period between 2003-2006, has decreased to 153 deaths between 2015-2018, which means has decreed for 58 deaths. The age group 15-24 from 588 deaths in the period between 2003-2006, has decreased to 346 deaths between 2015-2018, which means has decreed for 242 deaths. The age group 25-34 from 824 deaths in the period between 2003-2006, has decreased to 659 deaths between 2015-2018. The age group 35-44 from 1820 deaths in the period between 2003-2006, has decreased to 1485 deaths between 2015-2018. Also other groups record decrease in the period between 2003-2018, except for age group above 75 years, which records increase for 10728 deaths. From 32790 deaths between 2003-2006 to 43518 deaths between 2015-2018.

From the table above, we can notice that the highest number of deaths of males is recorded in their younger years in contrast to females. This number increases for females above 75 years. This means that males die more and at a younger stage, while females die less and they die at an older stage.

The Death Rate According to Ethnicity

In the table below, we will analyze the death rate according to ethnicity. In the period between 2011-2018, the overall number of deaths has increased for 1772 deaths. From 78525 deaths in the period 2011-2014 to 80297 deaths in the period 2015-2018. According to ethnicity it is recorded as follows: there is increase of deaths of Macedonians for 0,2% from 58167 in the period 2011-2014 to 59714 deaths in the period 2015-2018. Albanians record increase of 0,6% from 12950 deaths to 13704 deaths. Serbs record increase for 0,01 % from 1658 deaths to 1707 deaths. Bosnians record increase for 0,1 % from 516 to 563 deaths and others for 0,3 % from 1034 to 1342 deaths. There is recorded decrease of deaths of Turks for 0,2 % from 1924 to 1822 deaths, Romas for 0,2 % from 2030 to 1863 deaths and Vllahs for 0,1 % from 246 to 212 deaths.

From the analysis of the number of deaths according to ethnicity, we can notice that in this period there are variations and decrease of the number of deaths also according to gender. Lesser number of female deaths are recorded from Macedonians, Albanians, Turks, Romas, Vllahs.

While more female deaths are from Serbs, Bosnians and other ethnic communities. Regarding the cause of death, there is not any magnificent difference in terms of ethnicity or area.

Table 3. Deaths by ethnic affiliation of population in NMK, 2011-2018

No.	Period	2011-2014			2015-2018		
		Total	Male	Female	Total	Male	Female
1.	Total	78 525	41 073	37 452	80 297	42 201	38 726
	%	100 %	52,3 %	47,7 %	100 %	52,5 %	48,2 %
2.	Macedonian	58 167	30566	27 601	59 714	31 193	28 521
	%	74,1 %	38,9 %	35,1 %	74,3 %	38,8 %	35,5 %
3.	Albanian	12 950	6 827	6 123	13 704	7 269	6 435
	%	16,4 %	8,6 %	7,7 %	17,0 %	9,0 %	8,0 %
4.	Turkish	1 924	1 048	876	1 822	948	836
	%	2,4 %	1,3 %	1,1 %	2,2 %	1,1 %	1,1 %
5.	Rom	2 030	1 033	997	1 863	917	946
	%	2,5 %	1,3 %	1,2 %	2,3 %	1,1 %	1,1 %
6.	Vlach	246	136	110	212	109	103
	%	0,3 %	0,1 %	0,1 %	0,2 %	0,1 %	0,1 %
7.	Serbian	1 658	730	901	1 707	813	894
	%	2,1 %	0,9 %	1,1 %	2,1 %	1,0 %	1,1 %
8.	Bosnian	516	249	267	563	272	291
	%	0,6 %	0,3 %	0,3 %	0,7 %	0,3 %	0,4 %
9.	Other and unknown	1 034	457	577	1 342	642	700
	%	1,3 %	0,5 %	0,7 %	1,6 %	0,7 %	0,8 %

Source: SSO, 2003-2018

Death Rate According to Cause of Death

Causes of death can biological, socio-economical, accidental, diseases, nutrition, hard living conditions, poverty, natural disasters etc. Also, lately in North Macedonia, as a cause of death appears to be pollution. It is widespread, spreads deadly diseases and intensifies the process of death.

In the period 2007-2018, 55% of deaths have occurred from heart diseases, 51,72% from cerebral diseases between 2007-2010 and 59,59 between 2015-2018, and from neoplasms around 19%. A special importance have deaths from breathing organs which have raised from 3,7 % between 2007-2014 to 5,05 in the period between 2015-2018. This comes as a consequence of pollution. Because of stress, pollution, noise, unhealthy food, psychological traumas and many more, heart and cerebral diseases appear to have higher scale in contrast to other diseases. The relative data show that between 2007-2014 these diseases caused 48,28% of deaths, while between 2015-2018 the percentage decreases to 40,41%. Between 2007-2018 neoplasm diseases have raised with 4,65%.

Table 4. Deaths by causes of death in period 2007-2018

No.	Death cause	Period					
		2007-2010		2011-2014		2015-2018	
		Total	%	Total	%	Total	%
1.	Infectious and parasitic diseases	288	0,37	231	0,29	278	0,43
2.	Neoplasms	14423	18,79	14625	18,62	15072	23,35
3.	Heart and brain diseases	39702	51,72	40305	51,32	38450	59,59
4.	Respirable respiratory diseases	2824	3,67	2918	3,71	3261	5,05
5.	Injuries during maternity (of mothers and infants)	3	0,003	6	0,007	0	0
6.	Unidentified illnesses	4816	6,27	4628	5,89	5552	8,60
7.	External causes	2542	3,31	2156	2,33	1908	2,96
8.	Total	76749	100	78525	100	64521	100

Source: SSO, 2007-2018

The progresses of medical sciences, life conditions, and eco-friendly environment, have reduced the birth injuries. From external factors, there is a decrease of number of deaths from 3,31 % between 2007-2010 to 2,96 % between 2015-2018.

5. NATURAL GROWTH OF POPULATION

Natural population growth shows the numerical population changes that are caused by biological processes. The process of natural population growth has undergone major changes in time and space.

Table 5. Natural Growth of population of NMK, 2003-2018

No.	Period	2003-2006	2007-2010	2011-2014	2015-2018
1.	Natural growth	22 453	16 864	14 547	8 237
2.	‰	11 ‰	8,2 ‰	7,1 ‰	4,0 ‰
3.	Averagely/year	5 613	4 216	3 636	2 059
4.	‰	2,7 ‰	2,1 ‰	1,8 ‰	0,5 ‰

Source: SSO, 2003-2018

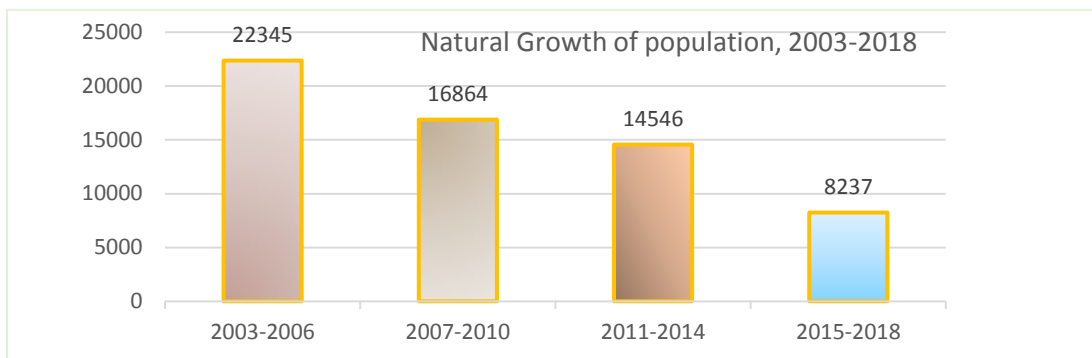


Figure 3. Natural Growth of population of NMK, 2003-2018

Starting from the period 2003-2006, when the largest growth in population was registered, both in absolute and relative value, the trend has been steadily declining. Thus, the natural growth of inhabitants in the period 2003-2006 was 22 453 or 11%, while on average 5 613 inhabitants per year or 2.7%, in the period 2007-2010 it decreased to 16 864 inhabitants or 8.2%, while on average of 4 216 inhabitants per year or 2.1% in the period 2011-2014 falls to 14 547 or 7.1%, whereas 3 636 inhabitants per year or 1.8% and in 2015-2018 reaches the lowest period of post-World War II of 8 237 inhabitants or 4.0 ‰, and an average of 2 059 inhabitants per year or 0.5 ‰. The main causes of declining natural growth of population should be seen in decreasing births, relative increases in the overall mortality rate due to population aging, and in the migration of the active population (at the age of reproduction) in the outside world.

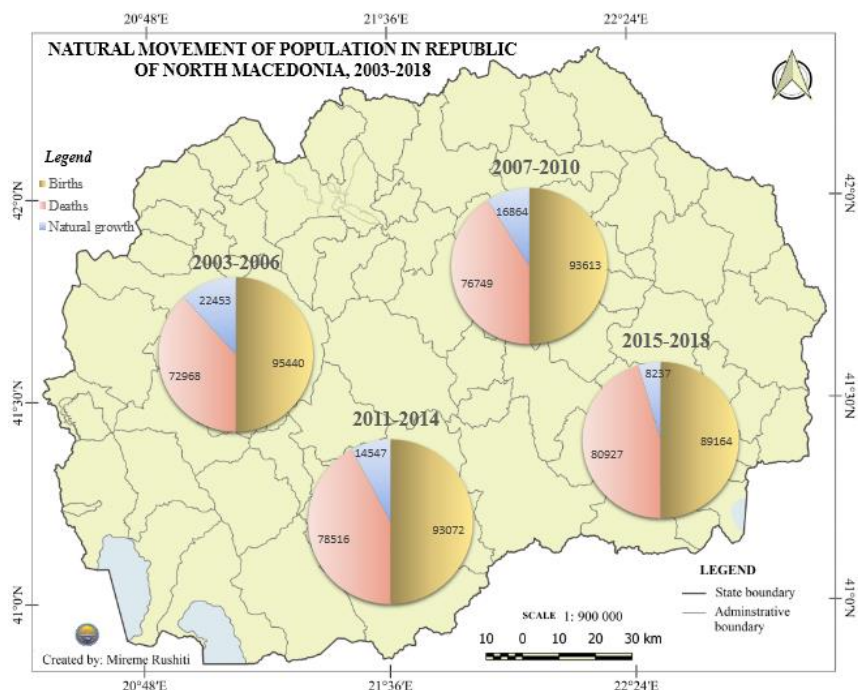


Figure 4. Map of Natural Movement of population of North Macedonia, 2003-2018

The natural growth, which represents the ratio between births and deaths, generally according to official data from the Statistical Office of the Republic of Northern Macedonia declined during the period of 2003-2018 by 14 216 or 7.0 ‰ or on average per year decreased 3554 inhabitants or 2.2 ‰.

6. CONCLUSION

In this paper is discussed about the population as a social category here in the Republic of North Macedonia, where special treatment is dedicated to the natural movement of the population in the Republic of Northern Macedonia, mainly were analyzed moreover, deaths and more specifically deaths by age and gender, deaths by ethnicity, as well as the causes of deaths for the period from 2003 to 2018. All of these facts can best be seen from the charts in the paper.

Birth rates in general according to official data from the Statistical Office of the Republic of Northern Macedonia declined during the period of 2003-2018 by 6276 births or 3.9 ‰ or an average per year by 1569 or 1.0 ‰.

Mortality in general, according to official data, increased during the period of 2003-2018 to 7941 deaths or 3.3% or on average per year for 1985 or 0.9%. In terms of sex and age mortality, we noticed that in all younger age groups, we have higher rates of deaths in males, whereas at the age of 75 these indicators show an increase in female gender. That is to say, if we analyze the ratio of deaths on the basis of the gender, we will find that the male sex dies even at a younger age, while the female gender less, even at a younger age. Regarding the mortality based on the ethnicity, we have variations of indicators across ethnicities, while mortality by causes shows that 59% of deaths are from heart and cerebral diseases.

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