

CHARACTERISTICS OF THE NATURAL MOVEMENT OF THE POPULATION IN UPPER POLOG

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Abstract

Population is the main factor of diverse and dynamic changes in space. From the earliest periods the human factor is a direct user of natural resources at the level of socio-economic development in time-space. As everywhere in the world, here too, the population in this region plays a key role and is the key factor for the growth and development of the country. However, the population is changeable and growth depending on various factors such as natural, economic, social and technological. Demographic development is expressed through indicators of the components of natural movement: birth rate, death rate, etc. Population is one of the main factors influencing socio-economic development. While the population is both productive on the one hand and consuming and material goods on the other, production and consumption depends on population size and density. In the framework of this study, we have been focused on the analysis of the demographic characteristics of the Upper Polog. When we emphasize the term "population", we are dealing with the problems of the population of a certain area, where in this case we have taken a regional space for study. But the question arises, what are the problems that a population may have? Exactly these problems are related to the impact of the population on the environment where they live and work, on the social and economic development of the country and not only personal problems that the population has. Some of these issues are: total population, natural movement (birth rate, death rate, natural increase), mechanical movement (migration, emigration and immigration), age structure, gender structure, educational structure, etc. In this study, we will emphasize exactly these issues, where the purpose of this study is the analysis of demographic components, with special focus on the natural movement of the population, where respectively we will inspect and examine birth rate, death rate, natural increase and vital population index of this region, also during the four different years starting from 2005, 2010, 2015 and 2019. The data are obtained from the Statistical Office of the Republic of Northern Macedonia for the natural increase of the population of the municipalities, which we have presented in tabular, graphic and cartographic form.

Keywords: population, natural movement, birth, death, natural increase, vital index

1. Introduction

The Upper Polog region lies in the northwestern part of the Republic of Northern Macedonia. Its borders in the west coincide with the state land border between the Republic of Northern Macedonia and the Republic of Albania and in the north-west with the Republic of Kosovo, the north-eastern border with the Lower Polog, while the south-east and south with the South Region western of the country. The region lies between the Sharr mountain range in the northwest, the Korab mountain range in the west, the Dry Mountain (Suva Gora) in the east, the Bistra mountain in the south, with pronounced morphological contrasts between them and with very prominent natural borders. Within the aforementioned boundaries, the area of the region is 1,352 km². The distinguishing feature of the position of the region is that it constitutes an important node with numerous natural resources and possibilities of very suitable connections within the Balkans and

beyond. This geographical position has also determined the features of the geological structure of this unit, which lies entirely in the tectonic zone of Western Macedonia, where a variety of rocks and very different tectonic deformations intertwine. This region is characterized by relatively good population and very dynamic demographic developments. In this context, the study of the population is of great importance for the economic and social development of the municipality, the region and the state. The creation and expansion of economic production capacities that affect the increase of living standards, depends on the number of the population, the dynamics of its growth, territorial distribution, etc. Based on the existing data on the population for the Upper Polog region, it can be seen that the population has continuously increased, although in some periods of time the migration process has been quite pronounced. In every country, as well as in this region, the population is of great importance for economic development. For this reason, an important segment is the number of the population, because through it is determined the number of people who are the main and irreplaceable factor for any economic development, respectively are key carriers of production and consumption of material goods.

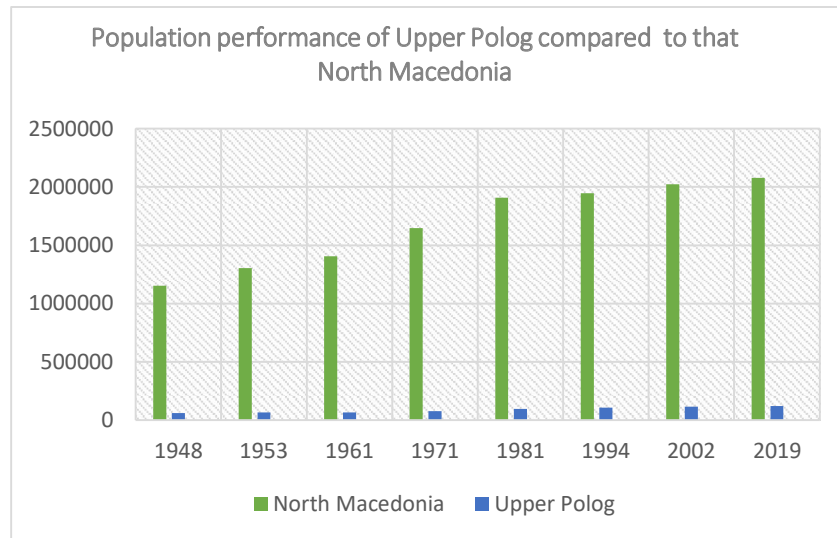
2. Population number performance

The Upper Polog region is distinguished from other regions of Northern Macedonia for its demographic and social features, as well as for the numerical population dynamics. The first official censuses of North Macedonia were conducted in 1921 and 1931, but the population data are incomplete and biased. For the population number in the Upper Polog region there are more officials from the census of 1948, 1953, 1961, 1971, 1981, 1994 and 2002. On the table below are analyzed the performance of the population of Upper Polog, compared to that of Northern Macedonia.

Table 1. Population performance of Upper Polog compared to that of North Macedonia

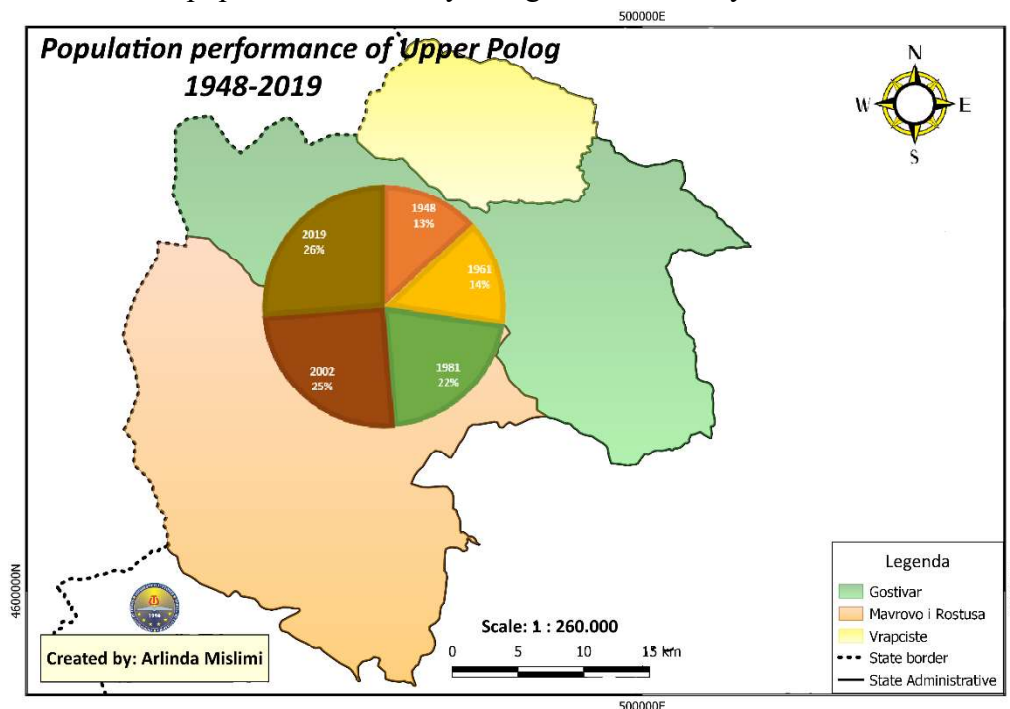
Years	1948	1953	1961	1971	1981	1994	2002	2019
1.Upper Polog	60.289	67.283	65.225	78.225	97.298	105.860	115.054	120.181
	5.22 %	5.15 %	4.63 %	4.74 %	5.09 %	5.44 %	5.68 %	5.78 %
2.North Macedonia	1.152.986	1.304.614	1.406.003	1.647.308	1.909.136	1.945.932	2.022.547	2.077.132
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: SSO, 1948-2019



Graph 1. Population performance of Upper Polog compared to that of North Macedonia

From what we can see from the table, according to the data, the performance of the population has had different dynamics over different years, both at the level of the state of Northern Macedonia and at the regional level, in our case the region of Upper Polog. The increase in population has been permanent, with occasional decreases in different periods due to various factors such as natural, historical, economic, political and mostly social. The largest increase was in 1981 and for a period of 10 years it increased by 261,828 inhabitants. As for the last decade, we can say that from 2002 to 2019 the population has a very low growth with only 54,585 inhabitants.



Map 1. Population performance of Upper Polog, 1948-2019

3. The natural movement of the population

The natural movement of the population is one of the main components of the general movement of the population. It is also a biological movement, but it could not be taken for granted and detached from the interaction with a series of factors, which are expressed in different ways, directly or indirectly. The main components of the natural movement are: natality (births) and mortality (death rate), (but the role of marriages, divorces, abortions, etc. should not be denied). This region for which we are examining this demographic process such as natural movement, is one of the regions with the largest natural increase at the state level, because here are influenced by many different factors from which we can say the ethnic structure of the population, religious structure, marriages at a young age, the level of education of women, birth control, the achieved level of well-being, health conditions, socio-economic position of women, etc. For the basis of this study we have taken four different years, comparing the region at the level of its three constituent municipalities and that as is the case with the Municipality of Gostivar (urban municipality) and two other municipalities that are rural municipalities such as Mavrovo and Rostusha and the municipality of Vrapciste.

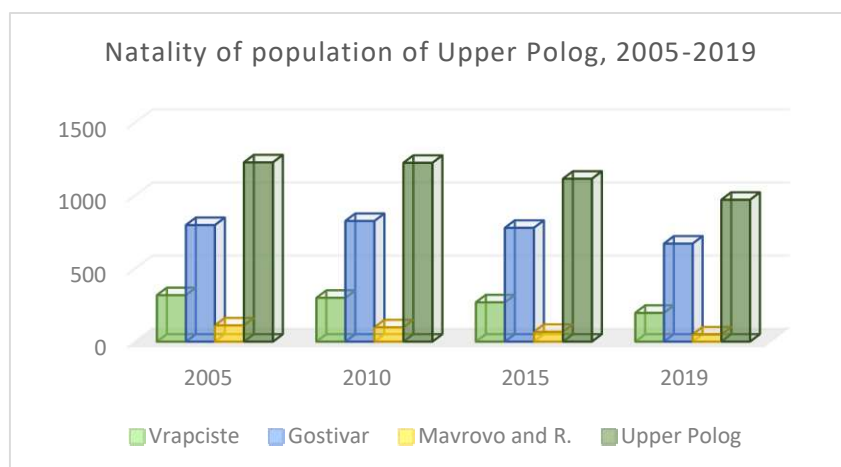
4. Birth rate

By natality (birth) we mean the number of live births in a population in relation to the total population. The region in question is one of the regions with the highest birth rate in Northern Macedonia, but according to the study from what can be seen from the table below that from 2005 until today the same as in all other regions of the Republic of Northern Macedonia the birth rate has decreased, although we can conclude that this region is still in the early stages of demographic transition, but again the causes of rapid technical-technological, economic, social development, emancipation of women, education and many others factors has caused this region to have this low level or gradual decline in birth rate. We will best notice these changes in Table 2.

Table 2. Natality of population of Upper Polog, 2005-2019

Municipality	y.2005	%	y.2010	%	y.2015	%	y.2019	%
1. Vrapciste	318	25,91	300	24,50	269	24,12	197	20,28
2. Gostivar	798	65,03	826	67,48	779	69,86	671	69,10
3. Mavrovo and R.	111	9,04	98	8,0	67	6,00	49	5,04
Upper Polog	1.227	100,0	1.224	100,0	1.115	100,0	971	100,0

Source: SSO, 1948-2019



Graph 2. Nativity of population of Upper Polog, 2005-2019

Almost in all three municipalities of this region during the years we have studied, we can see that there is a significant decrease in population, where the causes are many which we have mentioned in the above pages of this study. The lowest birth rate is during 2015 and 2019, where in the Municipality of Vrapciste during 2019 the birth rate is 20.28%, the Municipality of Gostivar 69.10% and in the Municipality of Mavrovo and Rostusha is only 5.04%, while at the regional level from 2005 to 2019 we have about 256 fewer births.

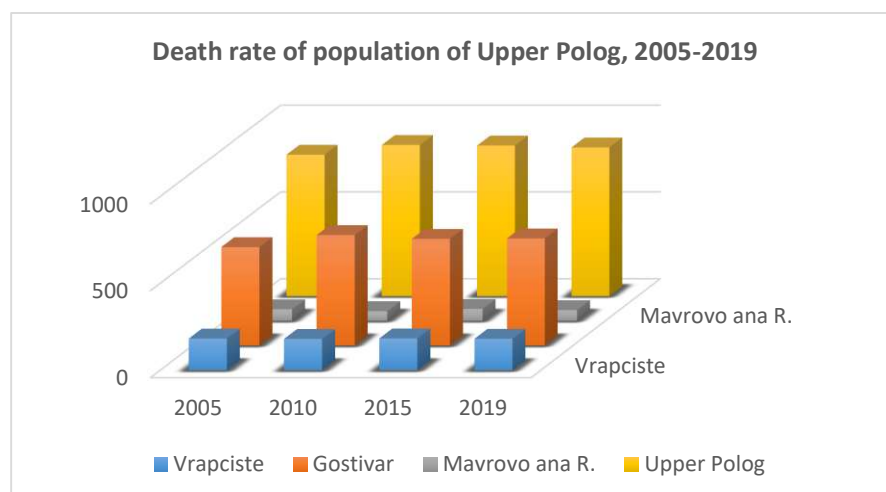
5. Death rate

By death rate we mean the numerical frequency of people who biologically, as living beings are no more. In the context of the natural movement of the population, deaths are negative elements, which affect the reduction of the total population. Demographics distinguish several conceptions related to deaths: general death rate, specific death rate (by gender, age, occupation, etc.), neonatal death rate, postneonatal death rate, death rate, perinatal death rate, etc. As in all regions in Northern Macedonia, the region of Upper Polog in terms of the number of deaths has had ups and downs, the causes are many such as wars, epidemics, incurable and genetic diseases, accidents, stress, urbanization, pollution, unemployment, etc. In terms of death rate in this region we will see how it went through the following table, where we have taken as basis datas of the death rate on this Region from four years.

Table 3. Death rate of population of Upper Polog, 2005-2019

Municipality	y.2005	%	y.2010	%	y.2015	%	y.2019	%
1.Vrapciste	182	22,35	180	20,68	183	21,10	181	21,14
2.Gostivar	566	69,53	635	72,98	613	70,70	616	71,96
3.Mavrovo and R.	66	8,10	55	6,32	68	7,84	61	7,12
Upper Polog	814	100,0	870	100,0	867	100,0	856	100,0

Source: SSO, 1948-2019



Graph 3. Death rate of population of Upper Polog, 2005-2019

The case of deaths in this region over the various years in this study, can be seen to be almost in the same values and there is no drastic increase or decrease. At the regional level we can see that the lowest number was in 2005 and 814 deaths, while the highest number was in 2010 with 870 deaths.

While in 2019 the number of deaths at the regional level has decreased by 856 deaths or about 14 deaths less than in 2010.

6. Natural growth of population

The natural increase rate is compounded from the difference between the birth rate and the death rate with the population in the middle of the year expressed per thousand. Below we have presented the formula of natural growth.

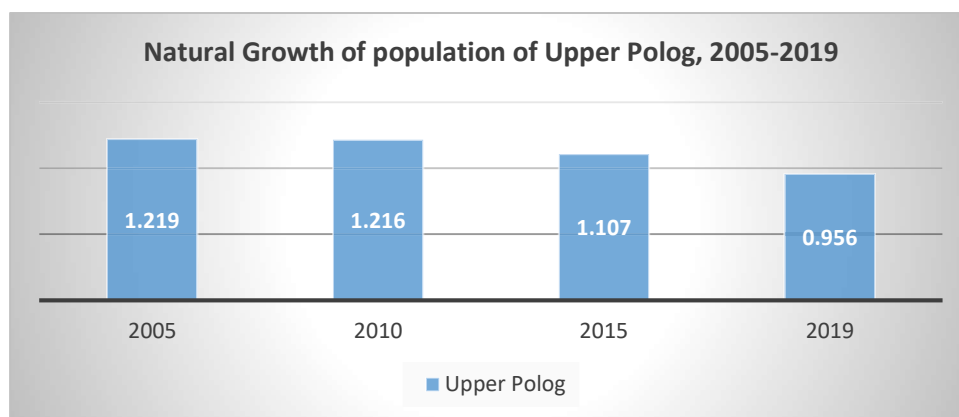
$$Ng = \frac{N-M}{P} * 1000 = \frac{Ng}{P} * 1000$$

Ng = natural growth P = population
N = natality M = mortality

Table 4. Natural Growth of population of Upper Polog, 2005-2019

	Years			
Upper Polog	2005	2010	2015	2019
1.Birth rate	1.227	1.224	1.115	971
2.Death rate	814	870	867	856
3.Population	116.054	118.758	119.301	120.181
4.Natural growth	3.558 ‰	2.980 ‰	2.078 ‰	0,956 ‰

Source: SSO, 2005-2019



Graph 4. Natural Growth of population of Upper Polog, 2005-2019

The table and graph above show us the permanent decrease of the natural growth of the population in this region of Northern Macedonia, where we can see that in 2019 it is very low and only 0.956 ‰, where the causes are numerous, which have significantly affected the reduction of births, not ignoring the numerous migrations, etc.

7. Vital index

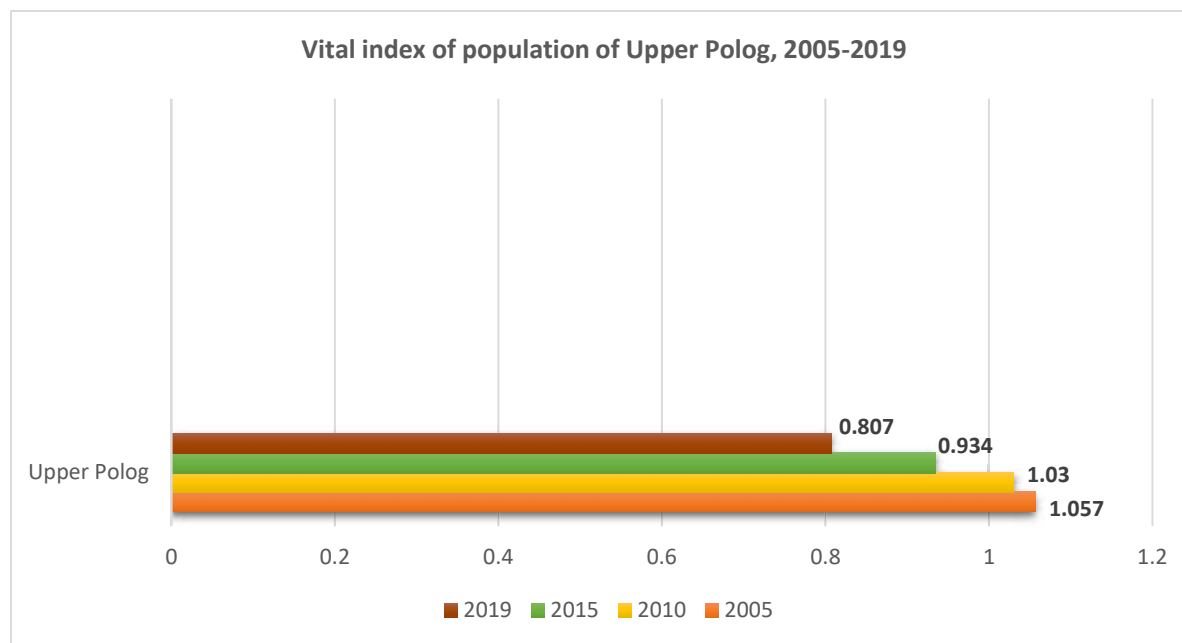
Within the natural movement of the population is also used the so called "vital index" which expresses the report between birth rate and death rate in percentage. Below we have presented the formula:

$$Vi = \frac{N}{P} * 100 \quad Vi = \text{vital index} \quad N = \text{natality} \quad P = \text{population}$$

Table 5. Vital index of population of Upper Polog, 2005-2019

	Years			
Upper Polog	2005	2010	2015	2019
1. Birth rate	1.227	1.224	1.115	971
2. Population	116.054	118.758	119.301	120.181
3. Vital index	1.057 %	1.030 %	0.934 %	0,807 %

Source: SSO, 2005-2019



Graph 5. Vital index of population of Upper Polog, 2005-2019

According to the table and graph above we can observe that even the vital index of the population, has been decreased year by year. In 2005 it has been 1.057 % and in 2019 it is even more lower comparing with the previous year and it has been 0.807 %, based on this we can conclude that the number of the natality has really impacted to vital index.

7. Conclusion

On this study we have discussed the population as a social category in the region of Upper Polog where special focus is given to the natural movement of the population, mainly examined births, deaths, natural increase and vital index of the population in the region, making comparisons with three its constituent municipalities. All of the data that we have been using on tables and respectively graphs are obtained from the Statistical Office of the Republic of Northern Macedonia for the natural increase of the population of the municipalities, which we have presented in tabular, graphic and cartographic form. Initially, the performance of the population of this region was examined in brief points, comparing it at the state level. The birth rate in general, according to official data from the Statistical Office of the Republic of Northern Macedonia has decreased during the period 2005-2019 by 256 births or 0.956 %. Death rate in general, according to official data, is approximately stagnant, with a very small increase even during the period 2005-2019 with 42 more deaths. From this we can conclude that in this region of Northern Macedonia as well as in all other regions, although later, births and deaths have started to stagnate and soon the natural increase will be stagnant or even negative, taking into account the different and very fast dynamics of this time in which we live and act.

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