

THE NATURAL MOVEMENT OF THE POPULATION IN THE REPUBLIC OF NORTH MACEDONIA 2014-2022

Mireme RUSHITI^{1*}, Sonila REXHEPI¹, Resul HAMITI¹, Meribe MUSTAFI¹

¹*Department of Geography, Faculty of Natural Sciences and Mathematics, University of Tetova, RNM*

**Corresponding Author: e-mail: mireme.rushiti@unite.edu.mk*

Abstract

The subject of this paper is the natural movement of the population in NMK for the period 2014-2022. The aim is to analyze the demographic components of natural population growth such as natality, fertility, and mortality. The population in NMK plays an important role in the country's development, depending on natural, economic, and social factors. In the last decade in the geographical space of the NMK, significant changes have occurred in the socio-economic plan and especially in the demographic of its population. Special attention is paid to the natural movement of the population, as it affects the movement of the general population in the NMK.

The methods used in this paper are descriptive, analytical, comparative, statistical, graphic, and cartographic, considering the official data of the State Statistics Agency for the Population of NMK.

The natality has generally decreased from 2014-2022 from 11.4 ‰ to 9.9 ‰. But mortality has increased in 2014-2022 from 9.5‰ to 12.3‰ (as a result of Covid-19). Regarding these rates, we found that natural growth has decreased from 1.9‰ to -2.4‰. If we analyze the fertility rate, we will notice that there are changes over the years, from 1.52‰ (2014) there is a decrease to 1.31‰ (2020) and then there is an increase to 1.6‰ (2022).

This paper pays particular attention to the aforementioned demographic features at the state level. In our opinion, to change the values in the natural rate of population growth and the general population, specific policies should be undertaken, which would increase the birth rate and help stimulate families by first providing secure jobs for parents, additional financial resources and creating a perspective for the future, which would help increase births and decrease migration.

Keywords: population, natality, fertility mortality, natural growth.

1. Introduction

In this paper, we will address an important and current topic in the context of North Macedonia: "the natural movement of the population in the period 2014-2022." North Macedonia, a small country in the Western Balkans, is a region that has been deeply affected by natural movements in recent decades. Due to various factors such as politics, economy, and international events, this region has undergone significant demographic and social transformations.

In the years 2014-2022, North Macedonia faced numerous challenges related to natural movement. These challenges include: climate changes, economic developments, political conflicts and their consequences on the demographic structure and dynamics of the country, etc. In other words, natural movement has formed an important part of the social and demographic landscape of North Macedonia in this period.

In this study, we will analyze the demographic and social changes that have occurred in North Macedonia from 2014 to 2022, using a wide range of sources and analytical methods.

Through this paper, we aim to provide a deep and multidimensional analysis of the phenomenon of natural movement such as fertility, natality, and mortality of the population in North Macedonia, thus helping to understand how these processes have shaped and influenced the country's development in the recent period.

2. The Natural Movement of the Population

The natural movement of the population is one of the main components of the overall population movement. It is simultaneously a biological movement, but it cannot be taken in isolation from the interaction with a series of factors, which manifest in various ways, either directly or indirectly. [9].

The population and its evolutionary development have attracted human attention since the earliest times. Later, over time, interest increased, gradually encompassing the entirety of phenomena and processes that represent the demographic situation and evolution of the population. Throughout history, various scholars, based on their understanding of demographic processes and phenomena, naturally shaped by the specific conditions of general social development, and driven by the interests of the social groups they represented, have expressed different views on the population. At the same time, this stance determined a particular worldview that was reached during these periods. [11].

2.1. Natality: Birthrate is an important element of the natural population increase. The birthrate depends on many factors: fertility rate, living standards, national and religious affiliation, cultural and educational level of the population, education of spouses for family planning, emancipation of women, population policies, etc.[9].

The simplest and most approximate indicator of births is the natality rate, which can be: the general birth rate and the effective general birth rate. By analyzing the table below, we will immediately notice a significant decrease in the birthrate in 2022, both within North Macedonia and in all its regions. The region that has experienced the greatest decline in birthrate over the years is the Eastern Region, with a birthrate of 6.7‰ in 2020, while in 2014 it was 10.9‰.

Table 1. Natality of the population in the regions of North Macedonia., 2014-2022(‰)

Year	2014	2018	2020	2022	2014 - 2022		2014	2018	2020	2022	2014 - 2022
Skopje Region	8194	8020	7384	7152	-1042	‰	13.3	12.7	11.7	11.8	-1.5
Northern Region	2008	1713	1504	1468	-540		11.4	9.7	8.6	9.6	-1.8
Eastern Region	1616	1390	1166	1184	-432		9.1	7.9	6.7	7.9	-1.2
Southeastern Region	1888	1696	1391	1239	-649		10.9	9.8	8.1	8.4	-2.5
Vardar Region	1601	1482	1241	1214	-387		10.4	9.7	8.2	8.8	-1.6
Pelagonia Region	2398	1962	1780	1667	-731		10.3	8.6	7.9	8	-2.3
Southwestern Region	2248	1868	1745	1550	-698		10.2	8.5	8	8.8	-1.4
Pollog Region	3643	3202	2820	2599	-1044		11.4	9.9	8.7	10.3	-1.1
R. of North Macedonia	23596	21333	19031	18073	-5523		11.4	10.3	9.2	9.9	-1.5

Source: Statistical Office of North Macedonia (data processed by author)

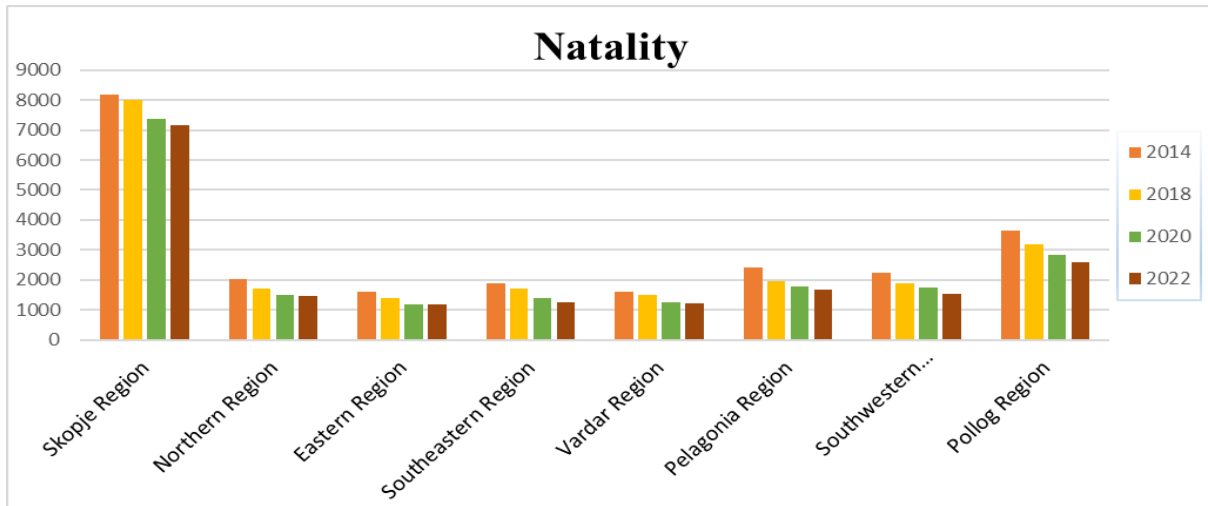
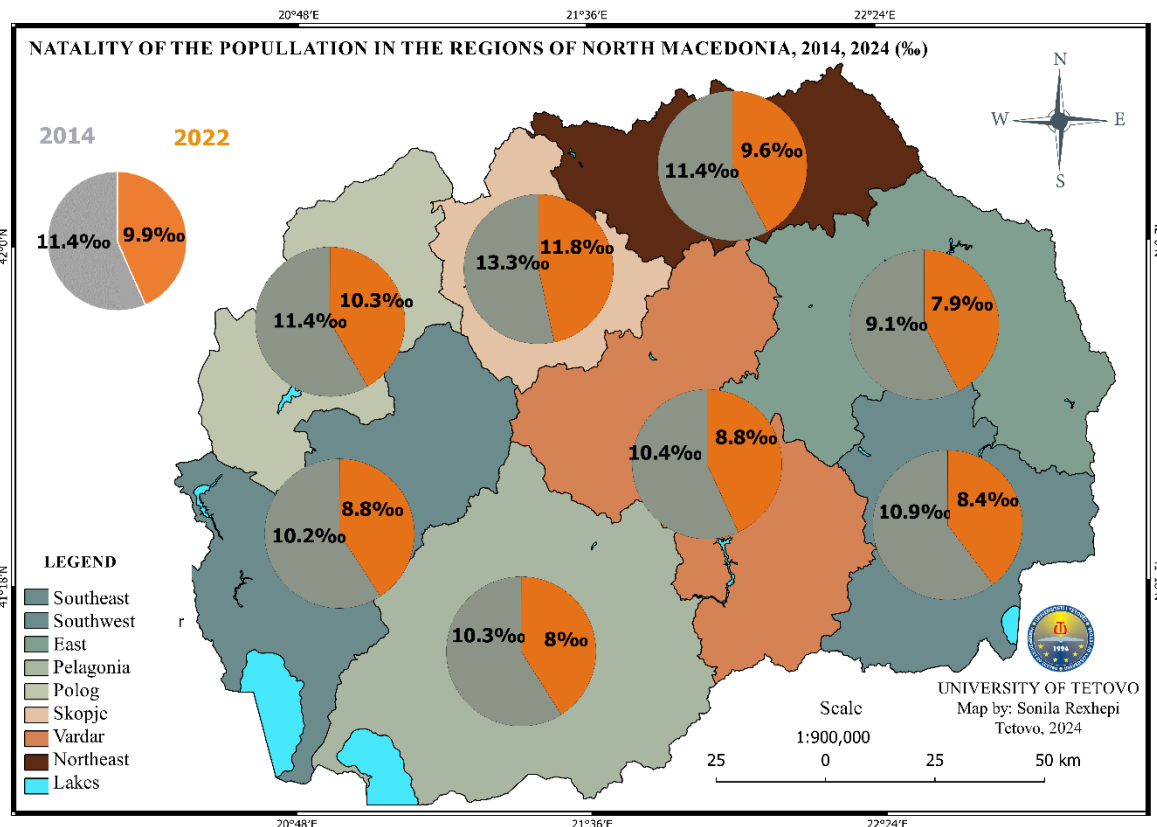


Figure 1. Nativity of the population in the regions of North Macedonia., 2014-2022(‰)

However, the region that has been least affected by this significant decline in birthrate is the Skopje Region, with a rate of 11.7‰ in 2020, compared to 13.3‰ in 2014. Additionally, the Skopje Region has the highest birth rate among all regions, as mentioned earlier, with a birth rate of 11.8‰ in 2022, while the region with the lowest birth rate is the Eastern Region, with only 7.9‰ in 2022.



Map 1. Nativity of the population in the regions of North Macedonia., 2014-2022(‰)

2.2. *Fertility*: Fertility refers to the number of live births relative to the female population of fertile age (15-49 years). Fertility is characterized by several conception periods: The fertile period includes the entire time interval of 15-49 years for females, which is generally accepted as an important interval for birthrate; The procreative period, which includes the time interval

during which pregnancy and births occur; The reproductive period, during which a female ensures reproduction, effectively replacing generations of the population through births.

Table 2. Fertility rate of the population in the regions of North Macedonia., 2014-2022 (‰)

Year	2014	2018	2020	2022	2014-2022		2014	2018	2020	2022	2014-2022
Skopje Region	8180	8014	7374	7145	-1035	‰	1.82	1.84	1.74	1.9	0.08
Northern Region	2000	1710	1502	1467	-533		1.53	1.33	1.33	1.5	-0.03
Eastern Region	1609	1387	1163	1183	-426		1.29	1.18	1.04	1.4	0.11
Southeastern Region	1881	1693	1338	1235	-646		1.52	1.45	1.23	1.5	-0.02
Vardar Region	1600	1482	1239	1209	-391		1.5	1.48	1.3	1.5	0
Pelagonia Region	2393	1958	1778	1663	-730		1.49	1.29	1.23	1.4	-0.09
Southwestern Region	2245	1867	1745	1547	-698		1.23	1.05	1.01	1.4	0.17
Pollog Region	3642	3201	2819	2598	-1044		1.33	1.17	1.05	1.5	0.17
R. of North Macedonia	23550	21312	19008	1807	-21743		1.52	1.42	1.31	1.6	0.08

Source: Statistical Office of North Macedonia (data processed by author)

According to the data of the table above for fertility in the regions of North Macedonia, in the period 2014-2022, we will notice that the region with the highest fertility is the Skopje Region, with 1.82‰ in 2014, and 1.74‰ in 2020. Meanwhile, the region with the lowest fertility is the Eastern Region, where in 2014 it was 1.29‰ and in 2020 it was 1.04‰.

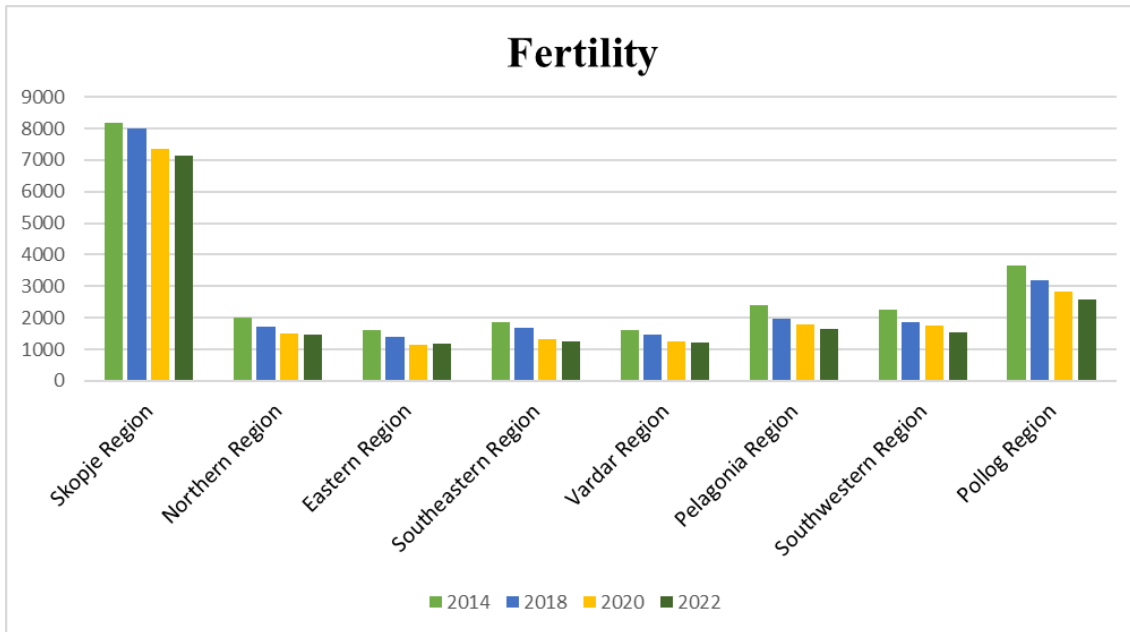
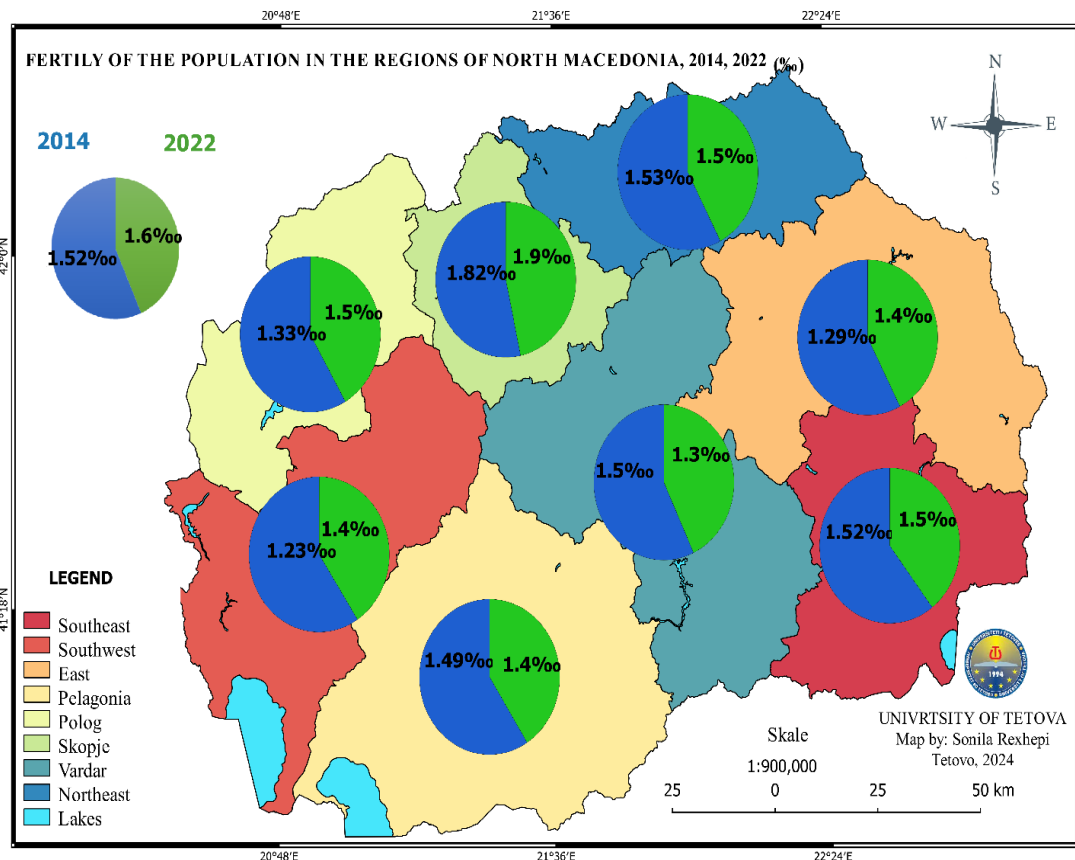


Figure 1. Fertility rate of the population in the regions of North Macedonia., 2014-2022 (‰)



Map 2. Fertility rate of the population in the regions of North Macedonia., 2014-2022 (‰)

2.3. Mortality: Mortality represents the negative component in the natural movement of the population and simultaneously is an indicator of healthcare and living standards, as well as an indicator of demographic development in a country. As the second component in the function of natural population growth, it marks numerous changes and differences in certain periods and among different national communities. [8].

The mortality of the population is closely related to biological, socio-economic, cultural, and health factors. Infant mortality is an important indicator of health status, as well as the social and economic level of a population. [9]. Within the natural movement of the population, deaths are negative elements that reduce the overall number of the population. Population aging is a biological process, as is mortality. For this reason, population reproduction must ensure the quantitative and qualitative replacement of the lost (deceased) population. When we say qualitative replacement, we mean the entirety of elements such as: age groups, professions, branches of the economy, educational levels, etc. This qualitative and quantitative replacement is followed by fundamental changes in the socio-economic structures of society.

On the other hand, the complex influence of biological, socio-economic, and other factors impacts the level of mortality both general and specific, particularly of infants. In demography, deaths are an element of the natural movement of the population, but also an element of overall demographic development. This latter designation serves in the study of the reciprocal relations of deaths within the framework of gender, age, socio-economic structures, etc.

All these are conditioned and simultaneously condition a series of group factors. Generally, the overall level of deaths is fundamentally conditioned by two groups of factors: biological factors and socio-economic factors. Biological factors include the relationship with the age structure of the population, since deaths are a function of it, as well as the individual characteristics of the population regarding health status, whereas in the group of socio-economic factors are those that directly influence the level of deaths: the achieved level of well-being, the level of education, health conditions, the level of healthcare services, etc.

Table 3. Mortality rate of the population in the regions of North Macedonia., 2014-2022(‰)

Year	2014	2018	2020	2022	2014-2022		2014	2018	2020	2022	2014 - 2022
Skopje Region	5651	5631	7348	6959	1308	‰	9.2	8.9	11.6	11.5	2.3
Northern Region	1604	1622	2119	1738	134		9.1	9.2	12.1	11.4	2.3
Eastern Region	1951	1916	2395	2221	270		11	10.9	13.8	14.9	3.9
Southeastern Region	1764	1756	2119	2104	340		10.2	10.1	12.8	14.2	4
Vardar Region	1657	1599	2075	1922	265		10.8	10.5	13.8	13.9	3.1
Pelagonia Region	2945	2914	3754	3026	81		12.7	12.8	16.6	14.5	1.8
Southwestern Region	1909	1924	2506	2147	238		8.7	8.8	11.5	12.1	3.4
Pollog Region	2237	2365	3359	2342	105		7	7.3	10.4	9.3	2.3
R. of North Macedonia	19718	19727	25755	22459	2741		9.5	9.5	12.4	12.3	2.8

Source: Statistical Office of North Macedonia (data processed by author)

In the table above, we have presented the mortality in the regions of North Macedonia. According to the State Statistical Office of North Macedonia, in 2014, the mortality rate was 9.5%, whereas in 2022, it increased to 12.3%. The region with the highest mortality in 2014 was the Pelagonia Region with 12.7% and the Eastern Region with 11%, whereas the region with the lowest mortality was the Southwestern Region with 8.7% and the Polog Region with 7%.

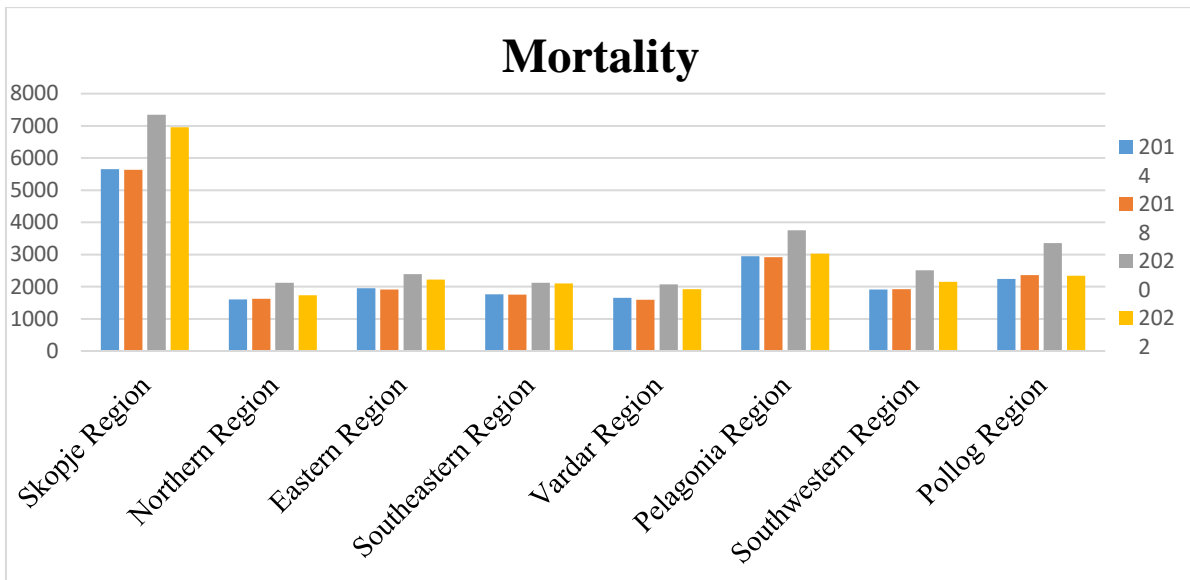
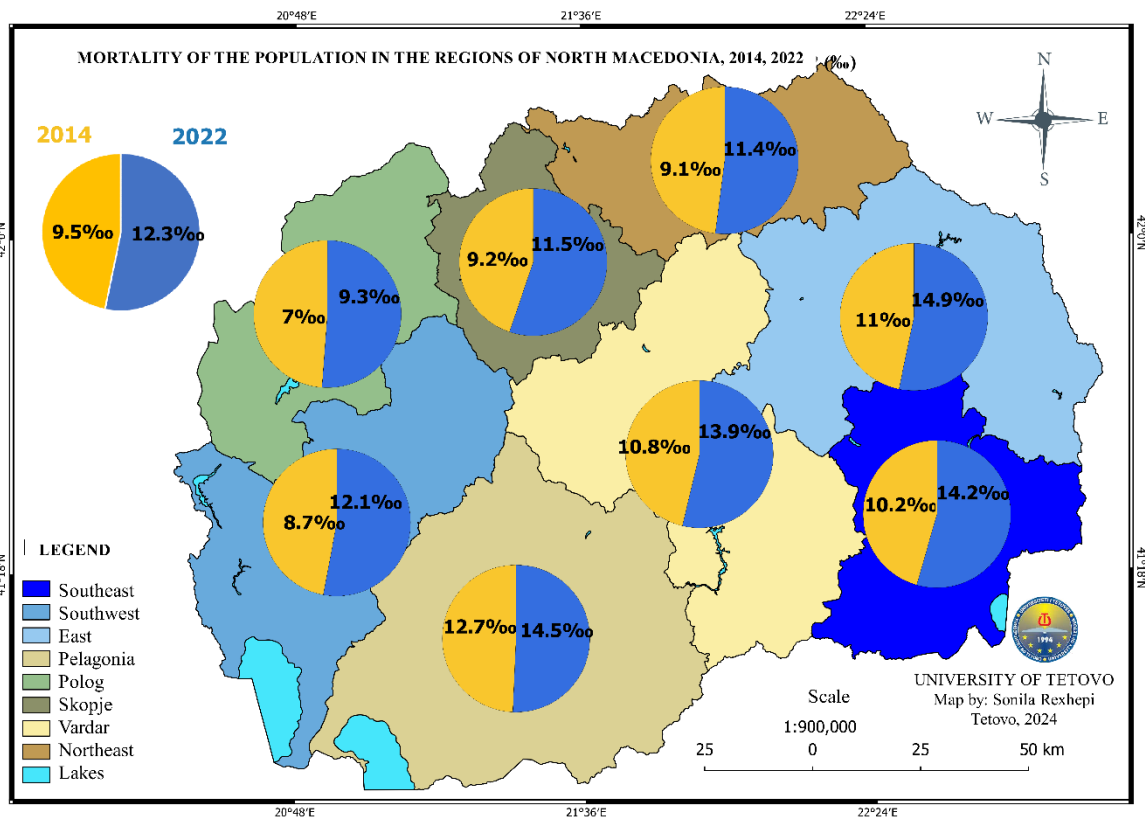


Figure 3. Mortality rate of the population in the regions of North Macedonia., 2014-2022(%)

In 2022, the number of deaths increased, with the regions with the highest mortality being the Eastern Region with 14.9% and the Pelagonia Region with 14.5%, while the regions with the lowest mortality were the Northeastern Region with 11.4% and the Polog Region with 9.3%. Mortality due to COVID-19 is a complex phenomenon that has deeply affected public health and social structure on a global level. COVID-19 is a disease caused by the SARS-CoV-2 coronavirus, which has caused a major pandemic that has impacted many countries and communities worldwide. This impact has also affected North Macedonia, with a higher number compared to other years, according to the State Statistical Office of North Macedonia.



Map 3. Mortality rate of the population in the regions of North Macedonia., 2014-2022(%)

2.4. *Natural Increase*: The increase in population, primarily the result of natural growth, represents the difference between birth rates and mortality rates, and to a lesser extent, mechanical population movements, specifically migrations from the young fertile population, which affects the birth rate and natural population growth.

The natural increase in population primarily depends on the improvement of living standards, healthcare, educational and cultural levels, family planning, women's emancipation, population policies, etc. The natural population movement represents an important demographic process that results in positive and negative changes in the overall population.

From current demographic analyses by many authors, it is evident that birth rate is a complex phenomenon influenced by several factors. In reality, birth rate as a fundamental component of natural population growth on one hand, and mortality on the other, are values that change over time and space [5].

When discussing the numerical dynamics of population, whether in a settlement, municipality, rural or urban environment, it can only be observed through natural or biological movements, as well as mechanical population movements. Natural population movement processes depend on various factors such as biological, sociological, economic, traditional, etc.[10].

Unlike some other mentioned demographic elements, natural population movement is not based on registration years, which are typically held over a period of 10 years. This significant demographic segment is processed almost every year through data on live births, deaths, and natural population growth. These issues are quickly addressed to solve population problems.

North Macedonia, as a state in transition and in general with a population with difficulties in many spheres, such as: education, health, culture, has greatly influenced natural movement, mostly negatively impacting increased mortality and decreased birth rates, especially in recent years.

Table 4. Natural growth of population in the regions of North Macedonia., 2014-2022 (‰)

	2014	2018	2020	2022	2014-2022		2014	2018	2020	2022	2014-2022
Skopje Region	2543	2389	36	193	-2350	‰	4.1	3.8	0.1	0.3	-3.8
Northern Region	404	91	-615	-270	-674		2.3	0.5	-3.5	-1.9	-4.2
Eastern Region	-335	-526	-1229	-1037	-702		-1.9	-3	-4.2	-7	-5.1
Southeastern Region	124	-60	-728	-865	-989		0.7	-0.3	-4.7	-5.8	-6.5
Vardar Region	-56	-117	-834	-708	-652		-0.4	-0.8	-5.6	-5.1	-4.7
Pelagonia Region	-547	-952	-1974	-1359	-812		-2.4	-4.2	-8.7	-6.5	-4.1
Southwestern Region	339	-56	-761	-597	-936		1.5	-0.3	-3.5	-3.3	-4.8
Pollog Region	1406	837	-539	257	-1149		4.4	2.6	-1.3	1	-3.4
R. of North Macedonia	3878	1606	-6724	-4386	-8264		1.9	0.8	-0.7	-2.4	-4.3

Source: Statistical Office of North Macedonia (data processed by author)

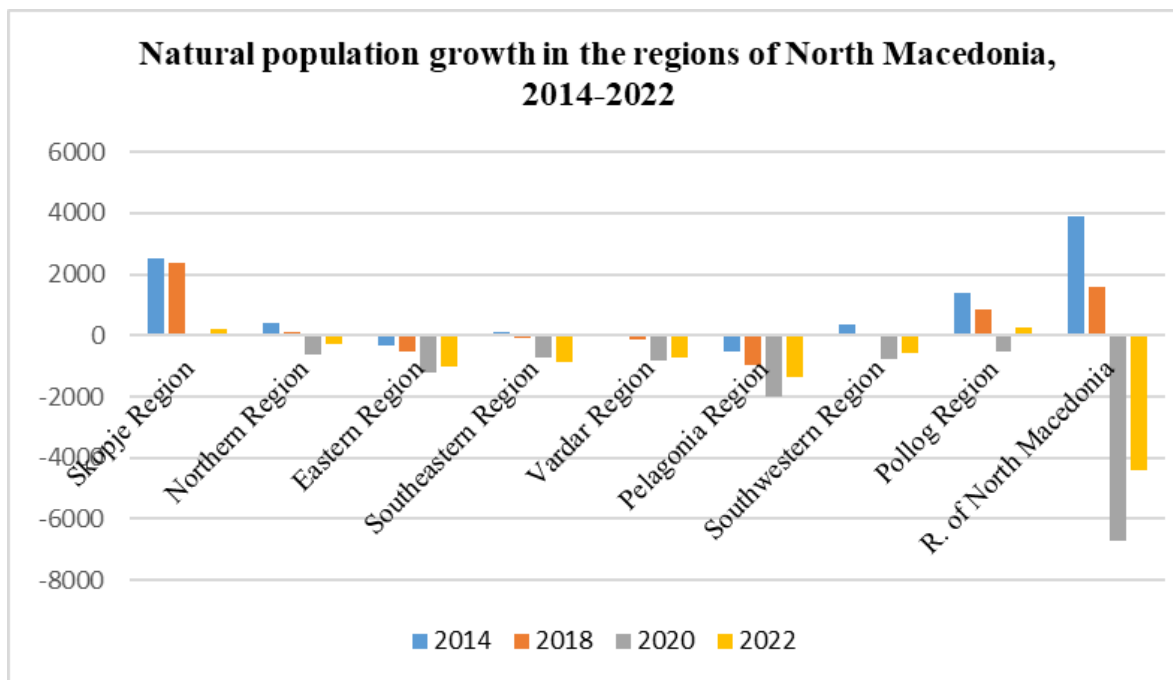


Figure 4. Natural population growth in the regions of North Macedonia, 2014-2022

Based on the above table, we observe that all regions of North Macedonia have faced negative natural population growth. The region most affected by this negative growth is Pellagonia Region with -8.7%, in 2020, while the region least affected by negative natural growth is the Pollog Region, with a decrease in 2020 by -1.3%. The factors contributing to this significant decline in natural population growth include emigration, living standards, fertility rates, population sterility, specific mortality, and so on.

3. Conclusions

In this paper, we have addressed the natural movement of the population in North Macedonia during the period 2014-2022. Through the analysis of demographic and social changes during this period, we have noticed a wide range of factors influencing these processes, including political and economic factors, climate change, political conflicts, etc.

Meanwhile, natural movements have deepened as a result of changes in the natural and urban environment, creating new challenges for development policies and environmental protection. The challenges and opportunities arising from this phenomenon are numerous and complex, but with a dedicated and coordinated approach, we can find effective solutions to address these realities and create a more sustainable and equal society for all citizens.

It is also important to emphasize that population flows have significantly damaged regional cohesion, causing major consequences in some vulnerable areas. These areas, especially rural ones, have suffered significant losses in the labor force, reaching in some cases up to three-quarters of the active workforce. This has affected their economic development and social stability, posing major challenges for local authorities and the central government.

To address these challenges, policies must focus on improving the socio-economic situation in affected areas, creating equal opportunities for all citizens, and taking concrete measures to improve infrastructure, public services, and employment opportunities.

Ultimately, to ensure a sustainable and prosperous future for North Macedonia, it is important to have an integrated and coordinated approach in addressing the challenges of population movements, including all relevant actors in the decision-making process and focusing on developing an inclusive and united society.

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