

NATURAL AND MIGRATION BALANCE OF THE POPULATION IN SIBIU COUNTY BETWEEN 1992 AND 2021

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ABSTRACT. – **Natural and Migration Balance of the Population in Sibiu County between 1992 and 2021.** Sibiu County has been characterised by a better demographic situation than the rest of Romania in the past three decades. The birth rate in Sibiu County has been around 10‰ for many years, above the national and regional average. The mortality rate had similar values, around 10‰ for many years, resulting in a natural balance rate around zero. However, during the pandemic (2020-2021), the birth rate dropped and the mortality rate increased, which determined a negative natural balance rate at the level of Sibiu County, as low as -4.5‰ in 2021. The net migration rate, on the other hand, has been positive in every year since 2006, reaching the highest value of 3.41‰ in 2019, right before the pandemic. The positive net migration rate determined also positive values of the total balance rate in Sibiu County between 2006 and 2019, reaching the highest value of 3.13‰ in 2019. However, the steep decline of the natural balance rate during the pandemic also affected the total balance rate, which became negative in both 2020 and 2021. Nevertheless, the total balance rate is expected to reverse back to positive values after the end of the pandemic. Within Sibiu County, the suburbanization is the major recent process that has an important demographic impact. Areas around the city of Sibiu, especially the commune of Şelimbăr and the town of Cîsnădie, have experienced a huge demographic growth, due to migration, but also due to the natural balance rate, which increased suddenly because most of the migrants are young families. Similar situations, although at a lower scale, were recorded in other communes around the city of Sibiu, such as Şura Mare, Şura Mică and Cristian, as well as in communes in Hârtibaciu Plateau (Roşia, Nocrich, Vurpăr, Merghindeal, Chirpăr, Iacobenii), characterised by high birth rates. In contrast, many communes in the western and north-western parts of

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Sibiu County, such as those in Secașe Plateau (Ludoș, Păuca, Loamneș, Apoldu de Jos), Târnava Mare Corridor and the surrounding hills (Micăsasa, Șeica Mare, Axente Sever, Blăjel, Bazna, Alma, Ațel) and even in Mărginimea Sibiului (Tilișca, Râu Sadului, Jina) experienced a population decline due to outmigration and a negative natural balance rate and a negative net migration rate.

Keywords: *natural balance, net migration rate, population dynamics, Sibiu County, Romania.*

1. Introduction

Population dynamics in Romania has changed a lot since the 1990s. The fall of the communist regime in December 1989 determined many changes in the Romanian economy and society, and also meant the end of the harsh pronatalist policies and strategies of the communist period (Ilinca, 1999, Surd, 2001). The freedom of movement also generated an important outmigration of the Romanian population towards the Western countries, especially during the 1990s, but also after 2000. Most of those who left were young people, and therefore demographic ageing has become an important demographic process in Romania (Nancu, Guran-Nica, and Persu, 2010, Erchedi, 2021). With a lower birth rate and a higher mortality rate, Romania has experienced a demographic decline even since the 1990s, while the negative net migration rate has only worsened the demographic situation. However, in some parts, the process of suburbanization determined pockets of demographic revitalization, on the outskirts of the big cities (Rusu, Bodocan, and Man, 2020). The pandemic had a negative impact on the already declining and ageing Romanian population (Rusu, 2022).

While there are studies concerned with the main demographic issues in Romania (Vasile and Dobre, 2015, Dumitrașcu, Trică, and Caragea, 2018, Hărăguș and Földes, 2020), the number of studies regarding different parts of Romania are relatively few, such as a paper comparing counties from a demographic perspective (Benedek and Török, 2014) or a paper regarding population dynamics in Bistrița-Năsăud County (Patița, 2024). Sibiu County, the study area, is quite outstanding from a demographic point of view, because it presents many positive demographic features, which have been assessed in this paper, and may represent a potential model for other Romanian counties. Despite the pandemic, Sibiu County has experienced positive demographic trends in recent years and may soon change its demographic tendency, from decline to stagnation and then to growth in the near future. Sibiu County is located in the centre of

Romania, in the southern part of Transylvania, an area which was long inhabited by both Romanians and Saxon Germans – now almost completely disappeared, as many migrated to Germany after World War II or after the fall of the communist regime. Sibiu County is perceived favourably by Romanians, because of the economic and social opportunities, as well as the higher living standards provided. As a result, Sibiu County has been characterised by a positive net migration rate since 2006, and even the natural balance rate shows signs of recovery and revitalization.

2. Methodology

Data regarding population is provided in Romania by the National Institute of Statistics, on their TEMPO ONLINE platform. The data regarding the number of births, the number of deaths, the number of migrants (immigration and outmigration) has been taken from this platform, at several territorial levels – the local government level in Romania, comprising the basic administrative units (communes, towns and cities), the county level (specifically Sibiu County, which is the study area), the regional level (mainly data regarding the Centre Region, which includes Sibiu County), and the national level, comprising the entire country. The birth rate, the mortality rate and then the natural balance rate were then computed based on the data regarding the number of births, the number of deaths and the total population for each administrative unit belonging to Sibiu County, then Sibiu County as a whole, as well as the Centre Region and Romania as a whole, for comparative reasons, for the entire period for which such data is available, which is from 1992 until 2021, a total of 30 years. Therefore, we had the opportunity to assess the evolution of these demographic indicators. The same happened with the number of migrants: we computed the immigration and emigration rate, and then the migration balance rate for each year and for each administrative level, between 1992 and 2021. Based on the natural balance rate and the migratory balance rate, the total balance rate was also computed for each year and for each administrative unit. The results regarding Sibiu County as a whole were then compared to the values of the same demographic indicators at the level of the Centre Region and the national (Romanian) level, to assess the situation of Sibiu County in the wider regional and national context. Then, the values of the demographic indicators within Sibiu County were also assessed, in order to have a more detailed demographic analysis at the level of the local administrative units. As a result, areas with different demographic features within Sibiu County were examined thoroughly. Data from the last available year (2021) was analysed in more detail and mapped accordingly. The evolution

of demographic indicators also provided an opportunity to assess the future demographic trends in Sibiu County as a whole and in some of the distinctive areas within the county.

3. Results

3.1. The birth rate

In Sibiu County, just like everywhere else in Romania, the birth rate suffered a continuous decline since the 1990s until today. The highest value of the birth rate, 11.27‰, was registered in 1992, the first year when such data were available. The lowest value of the birth rate was 8.28‰, registered in 2021, the last year when data regarding births was provided (fig. 1).

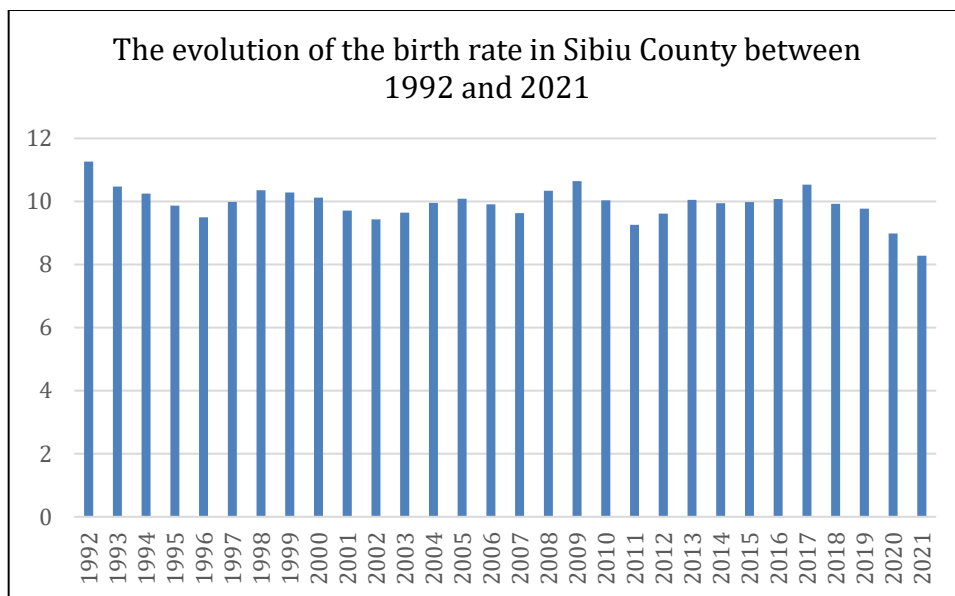


Fig. 1. The evolution of the birth rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

Immediately after 1990, the legislation regarding birth control (abortion) was cancelled, and there was a large-scale introduction of contraceptive methods, which determined a drop in the birth rate during most of the 1990s. The economic and social difficulties of the transition period from the socialist period

to an open-market capitalist economy contributed to the decline in birth rate, as well as the migration of many young people. These caused a long-term drop in the birth rate, up until today. Population ageing became an important demographic phenomenon, and the ever lower weight of young people and young adults within the total population determined lower birth rates, year after year. After the year 2000, the birth rate in Sibiu County became lower than 10‰ in almost every year, with some exceptions. Secondary maximal values were recorded in 2009 (10.64‰) and 2017 (10.53‰). Since 2020, the birth rate dropped below 9‰, reaching 8.28‰ in 2021, during the pandemic. The further decrease of the birth rate in recent years is caused by a drop in weight of the fertile population, as the smaller generations born after 1990 are now in the category of young adults, on the one hand, while the pandemic itself was a period of social and economic uncertainty, which determined a decline in both fertility and birth rate.

However, one has to notice that the values of birth rate in Sibiu County have been higher than those at the national level for most years, and even in 2021, when the Romanian birth rate was only 8.2‰. Between 2014 and 2017, the birth rate in Sibiu County was significantly higher than the one in Romania or in Center Region (to which Sibiu County belongs). Nevertheless, after 2017, these differences gradually decreased and are now very small.

At the local government level (fig. 2), it is noticeable that the highest values of the birth rate in 2021 were registered in some communes in Hârtibaciu Plateau, in the centre, East and North-East of Sibiu County, such as Mihăileni (18.75‰ – the highest value), Brădeni, Iacobeni, Vurpăr, all having values above 14‰. Birth rate values above average were also recorded in other communes of Hârtibaciu Plateau (Bârghiș, Chirpăr, Roșia, Marpod, Nocrich, Slimnic, Merghindeal). The reason might be the presence of the Roma population in some of these communes, which traditionally has a higher birth rate than the others, as well as a higher weight of the young adult population in these communes. A similar explanation is true for some of the communes along Târnava Mare Valley (Hoghilag – almost 16‰, Laslea, Brateiu, Târnava). On the other hand, the second highest birth rate value in the county was recorded in Șelimbăr (17.86‰), near Sibiu, where the high birth rate may be explained by the immigration of many young families from the city of Sibiu to this commune. Therefore, the higher weight of young fertile adults determines high birth rates. Similar cases were recorded in the town of Cisnădie (also near Sibiu), in some communes of Mărginimea Sibiului, where the birth rate was traditionally higher (Gura Râului, Jina, Orlat, Poiana Sibiului), as well as in Făgăraș Basin (Cârțișoara, Cârța, Turnu Roșu).

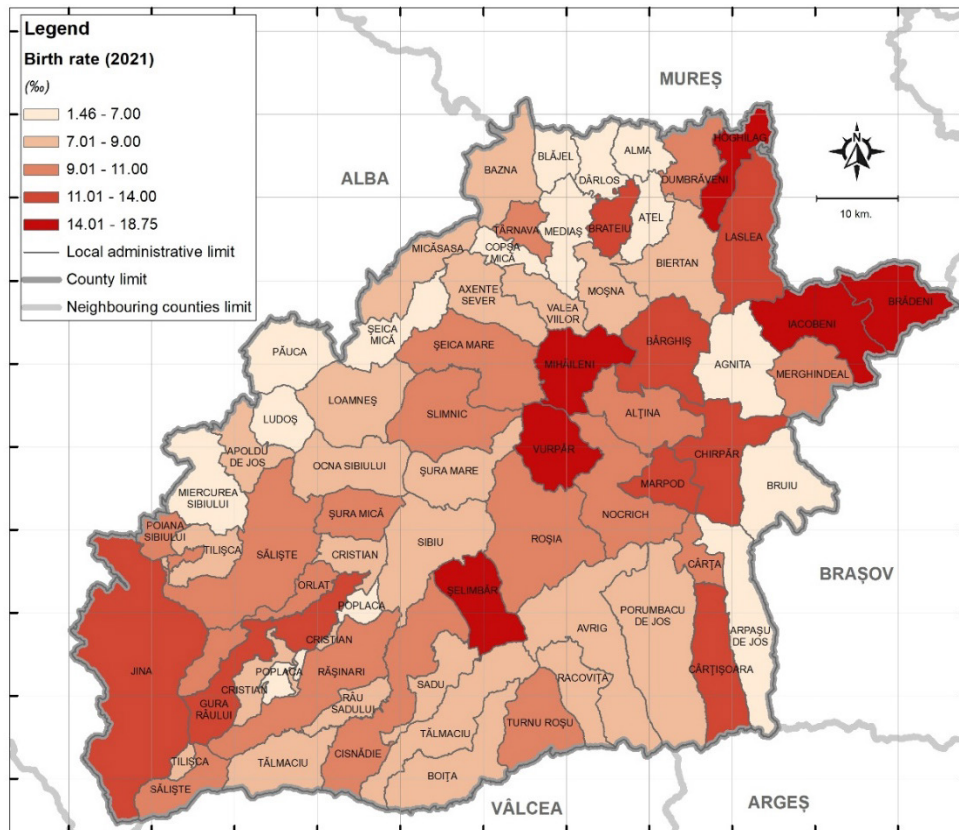


Fig. 2. The birth rate at local administrative level in Sibiu County in 2021.
Data source: INS (2024)

At the other end, the lowest birth rates were recorded in the western part of the county, in Ludoș (1.46‰) and other communes of Secașe Plateau (Păuca, Apoldu de Jos) and in the western part of Târnava Mare Valley (Ațel, Șeica Mare, Alma, Dârlos, Blăjel), as well as in some urban areas, like the city of Mediaș and the towns of Copșa Mică, Agnita and Miercurea Sibiului, where the birth rate is below 7‰. The situation is worrying, especially in the case of towns and cities, where there should be a more balanced age structure of the population, allowing for a higher birth rate. In the case of communes and some of the smaller towns (Miercurea Sibiului), the main explanation for the low birth rate is the demographic ageing, the lack of young population, who emigrated to the large cities.

However, as already pointed out, the cities themselves are not characterized by a high birth rate. On the contrary, the city of Mediaş recorded the third lowest value in the county in 2021 (4.90‰), while the city of Sibiu recorded a birth rate below the county average (7.24‰). This may be at least partially explained by the process of suburbanization: many young people and young adults emigrate from the large cities to the suburban communes, which accelerates the process of demographic ageing even within the core cities.

3.2. The mortality rate

The mortality rate was relatively constant in Sibiu County between 1992 and 2019, recording values around 10‰. During the pandemic, the mortality rate increased significantly, above 12‰, reaching 12.78‰ in 2021 (fig. 3).

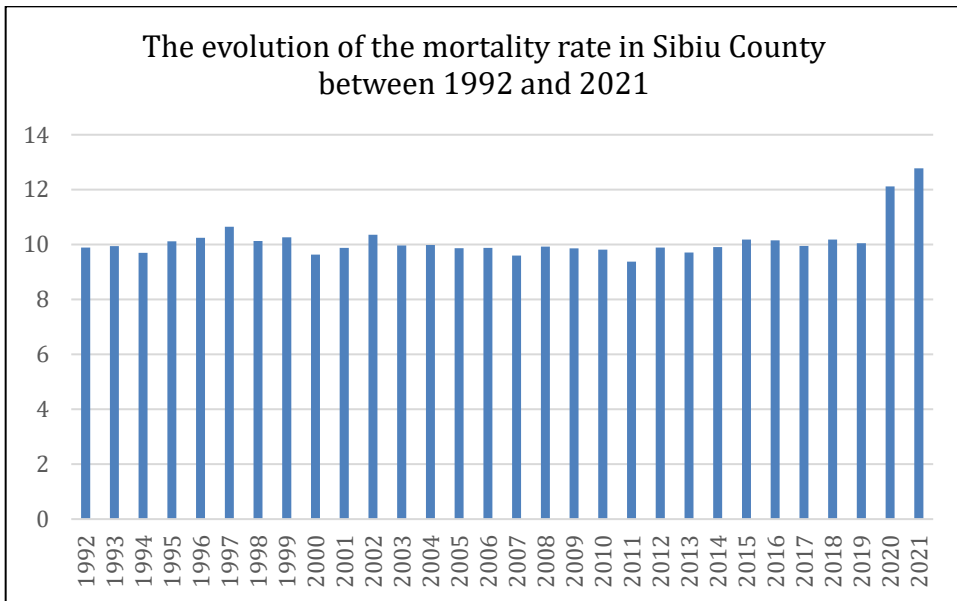


Fig. 3. The evolution of the mortality rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

Not taking into account the years 2020 and 2021, the lowest value of the mortality rate in Sibiu County was 9.35‰ in 2011, while the highest value was recorded in 1997, 10.65‰. The average value between 1992 and 2019 was 10‰. However, the mortality rate had slightly higher values after 2014, exceeding

10‰ in almost every year starting with 2015. This small increase in the mortality rate may be related to the process of demographic ageing, and the ever-higher weight of elderly people in Sibiu County, which have a higher mortality than the other age groups. The mortality rate increased suddenly during the pandemic, which proves the direct and indirect deadly effect of the coronavirus, despite the measures taken by authorities to protect the population.

However, if one compares the mortality rate in Sibiu County with the one at national and regional level, it comes out that the mortality rate in Sibiu County was always lower, even during the pandemic. For instance, in 2021, the mortality rate in Romania was 15.2‰, its value in the Centre Region was 14.3‰, while in Sibiu County, it was only 12.78‰. Before the pandemic, between 2014 and 2019, the mortality rate in Sibiu County was around 10‰, compared to values between 11.5‰ and 12‰ in Romania and between 10.5‰ and 11.2‰ in the Centre Region. The situation was similar during the 1990s and 2000s. The difference is explained by the higher demographic ageing at national and regional level compared to Sibiu County, on one hand, and the higher living standards in Sibiu County compared to the rest of Romania and the Centre Region, which were translated in a higher life expectancy in Sibiu County compared to the others.

In 2021, the highest mortality rate was recorded in the communes located in the West of Sibiu County, reaching the highest value in Micăsasa (25.83‰), while values above 19‰ were recorded in communes of Secașe Plateau (Ludoș, Păuca, Apoldu de Jos) and in Poiana Sibiului. These communes are most affected by demographic ageing, and a high weight of the elderly population determines a high mortality rate. The distance to the main urban centres may also play a role, especially in emergency situations, but also taking into account the difficulty to provide medical assistance at local level. High values of the mortality rate were also recorded in some communes of Hârtibaciu Plateau (Șeica Mare, Bruiu, Mihăileni, Bârghiș, Brădeni), with similar problems, as well as in communes of Mărginimea Sibiului (Poplaca, Boița, Rășinari, Gura Râului), or along Târnava Mare Corridor and the surrounding hills (Alma, Valea Viilor, Blăjel, and the town of Dumbrăveni, 16.78‰). Values of the mortality rate above average were also registered in other urban centres, such as the city of Mediaș and the towns of Ocna Sibiului, Săliște, Agnita, Copșa Mică, and Miercurea Sibiului.

The lowest mortality rates were recorded in 2021 in communes that have a high weight of the young population, and therefore a low weight of the elderly population, such as Brateiu (4.83‰, the lowest value in the county), Nocrich and Șelimbăr.

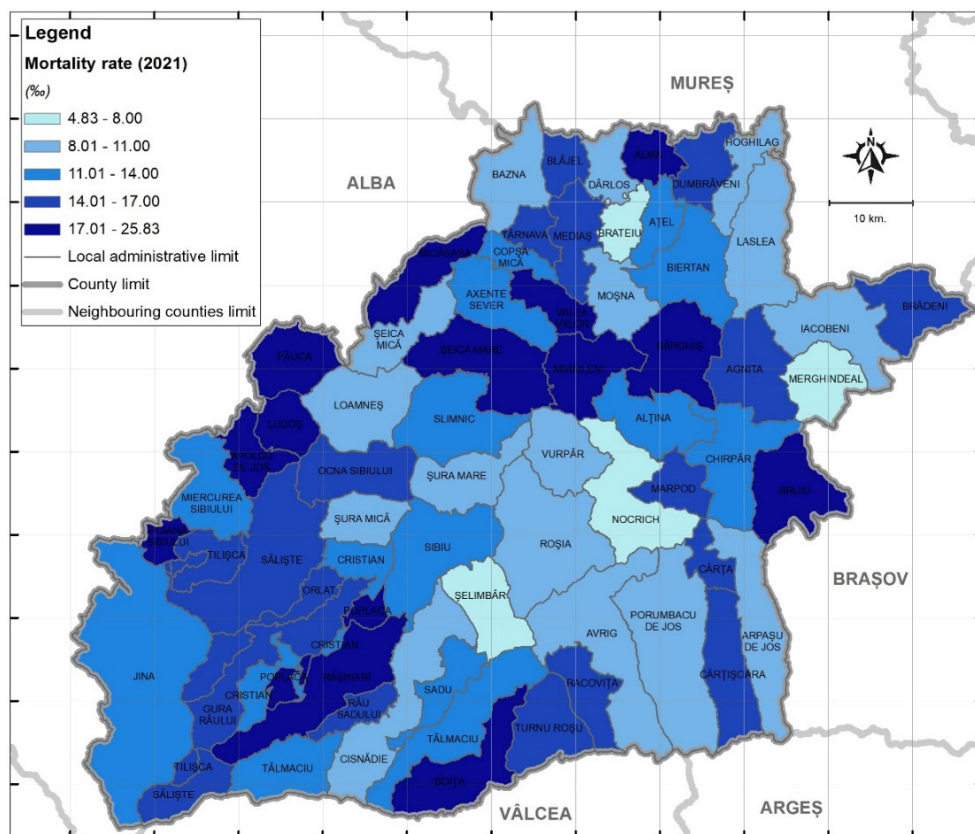


Fig. 4. The mortality rate at local administrative level in Sibiu County in 2021.
Data source: INS (2024)

Other communes with a low mortality rate are located in Hârțibaciu Plateau (Merghindeal, Vurpăr, Roșia, Iacobeni), in Sibiu Basin (Șura Mare, Șura Mică, the town of Cisnădie), in Făgăraș Basin (Porumbacu de Jos, Arpașu de Jos), and along the Târnava Mare Corridor and the surrounding hills (Bazna, Laslea, Dârlos, Hoghilag). The city of Sibiu recorded a mortality rate just slightly below the county average in 2021.

3.3. The natural balance rate

The evolution of the natural balance rate is a direct result of the evolution of the birth rate and that of the mortality rate. In Sibiu County, just like everywhere else in Romania, the natural balance rate decreased between

1992 and 2021 proportional to the birth rate, because the mortality rate had only minor variations, except for 2020 and 2021, when the increase of the mortality rate led to a sudden decline of the natural balance rate (fig. 5).

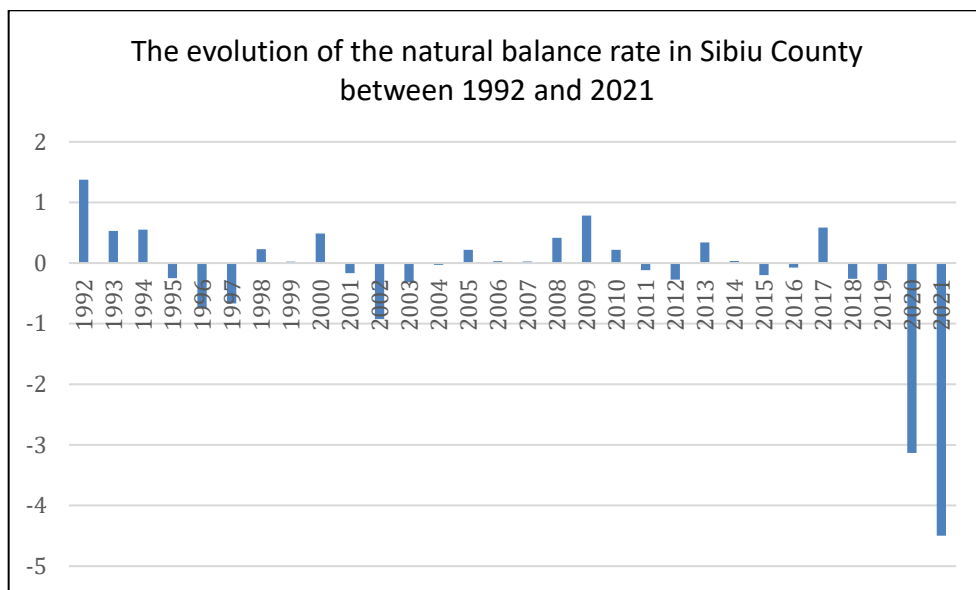


Fig. 5. The evolution of the natural balance rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

The natural balance rate had its highest value, 1.38‰, in 1992, the first year of the analysed period, when there was still a relatively high birth rate, given the then-recent ending of the socialist period in Romania. The natural balance rate decreased in the next years and became negative for the first time in 1995 (-0.25‰). After 1995, there was a certain balance between the values of the birth rate and those of the mortality rate in Sibiu County, which meant that the natural balance rate has been close to zero for many years, with some very small variations. For instance, higher values of the natural balance rate were recorded in 2009 (0.78‰) and 2017 (0.59‰), and lower values in 2002 (-0.92‰).

As a result of the pandemic, the mortality rate increased significantly in 2020 and 2021, which caused a sharp decline of the natural balance rate from -0.28‰ in 2019 to -3.13‰ in 2020 and to -4.5‰ in 2021, when the lowest value of the natural balance rate was recorded. However, even in these conditions, the natural balance rate in Sibiu County in 2021 was higher than in Romania as a whole or than in the Centre Region.

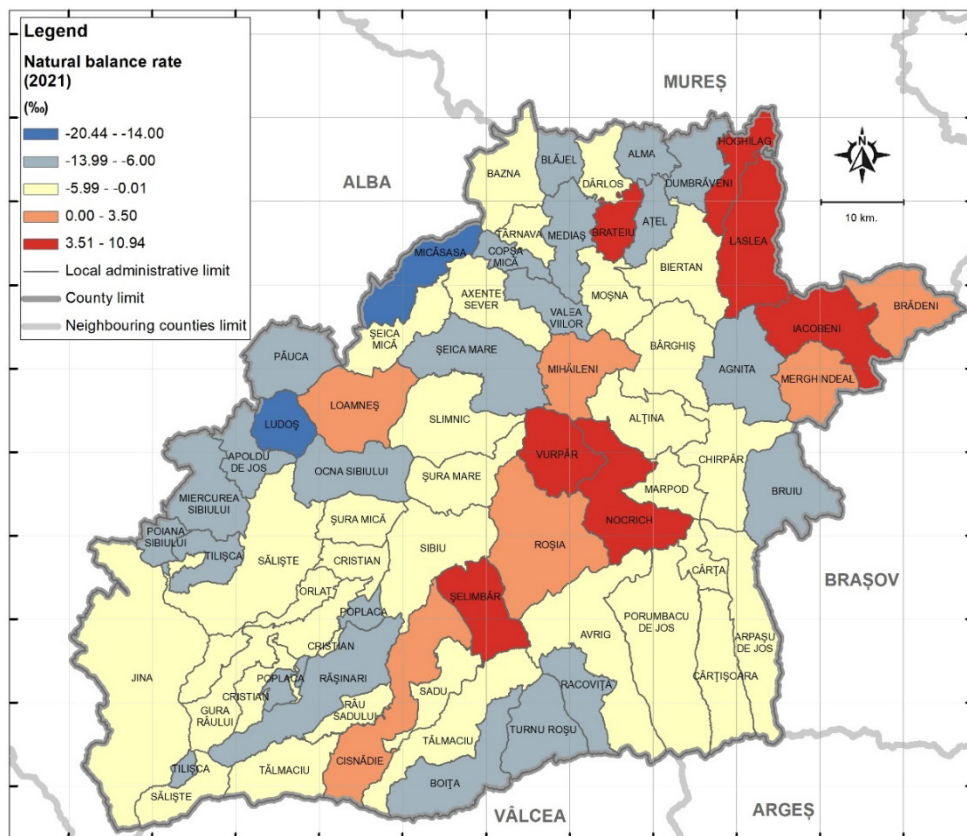


Fig. 6. The natural balance rate at local administrative level in Sibiu County in 2021.
Data source: INS (2024)

In 2021, even during the pandemic, there are some areas where the natural balance rate maintained positive values. It happened in some communes that constantly have high birth rates and low mortality rates, such as Șelimbăr (10.94‰ – the highest value in the county), near Sibiu, Brateiu, near the other important city, Mediaș, as well as in some communes of Hârtibaciu Plateau (Vurpăr, Iacobeni, Nocrich, Merghindeal, Roșia, Mihăileni, Brădeni) or the eastern part of Târnava Mare Valley (Laslea, Hoghilag), which account for a higher weight of Roma population. The only town that had a positive natural balance rate was Cisnădie (1.14‰), which, very much like Șelimbăr, experienced a recent revitalization and rejuvenation due to suburbanization, mainly because of the emigration of young people from the city of Sibiu.

However, most local government units of Sibiu County registered negative values of the natural balance rate in 2021, with the lowest values in the western part of the county, in Ludoș (-20.44‰ – the lowest value in the county) and in other communes in Secașe Plateau, where there is a growing and visible process of demographic ageing, resulting in a high mortality rate and a low birth rate. Low values were also recorded in communes of the Târnava Mare Corridor and the surrounding hills (Micăsasa, Alma), Secașe Plateau (Păuca, Apoldu de Jos), in Bruuiu, and in some communes of Mărginimea Sibiului (Poplaca, Poiana Sibiului, Boița). Very low values of the natural balance rate were also recorded in some urban areas, for instance in the city of Mediaș (-10.04‰) or in the towns of Agnita, Ocna Sibiului, Copșa Mică, Dumbrăveni, and Miercurea Sibiului. A very low value was also registered in the city of Sibiu (-5.45‰).

3.4. The immigration rate

The immigration rate was very high at the beginning of the 1990s (more than 15‰ in 1992), due to the freedom of movement that was allowed after the fall of the communist regime in December 1989. However, this had only a local impact, because the migrants were in fact those who moved officially from the countryside to the urban areas, while they were already unofficially in the urban areas for some time. During the 1990s, the immigration rate declined and reached the lowest value in 1998 (8.75‰). The values of the immigration rate increased significantly after 2002, reaching 19.91‰ in 2010 and 21.14‰ (the highest value) in 2019, in the last year before the pandemic (fig. 7).

Despite an apparently constant increase of the immigration rate, there were also years when a decline was registered. During the pandemic, the immigration rate also declined below 20‰, to 19.13‰ in 2021, the last year when data was available. Nevertheless, especially after 2002, the immigration rate had an important impact on the demography of Sibiu County, even higher than that of the birth rate, because the immigration rate had constantly higher values than the birth rate. This was mainly due to the fact that Sibiu County has been an attractive area for people in Romania generally, because of the above-average living standards, rendering a positive perception of the county.

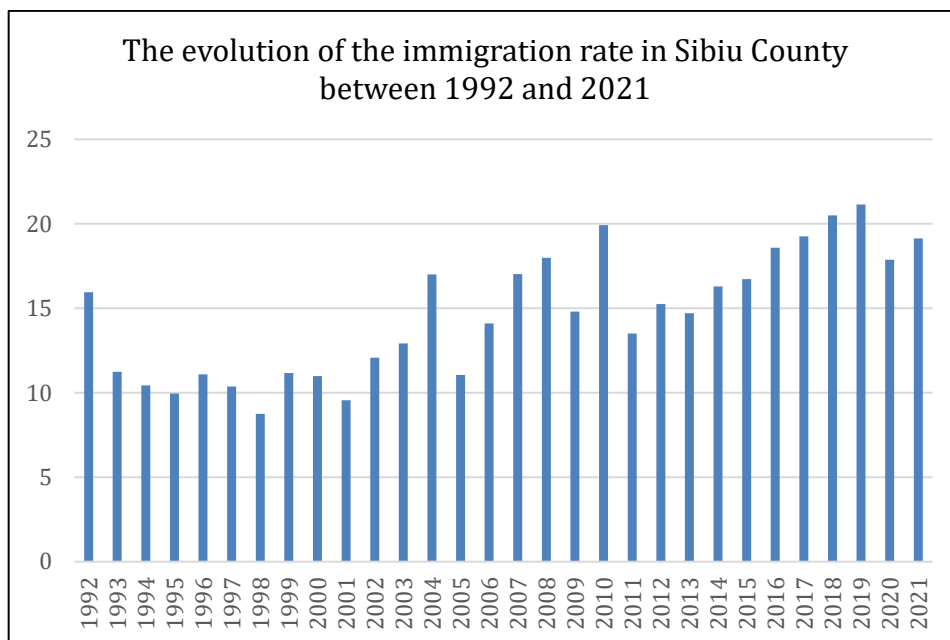


Fig. 7. The evolution of the immigration rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

Within the county, in 2021 the highest values of the immigration rate were registered in Șelimbăr (a huge value, 88.98‰), followed by Marpod (51.04‰) and the town of Cisnădie (50.46‰). Șelimbăr and Cisnădie have had registered very high values of the immigration rate for the last three decades, as they are the demographic beneficiaries of the suburbanization process, by means of which a part of the population in Sibiu City moved to the suburbs. The same process explains the high values in other communes near Sibiu, such as Șura Mare, Șura Mică or Cristian. Values above average were registered in Secașe Plateau (Ludoș, Apoldu de Jos), Mărginimea Sibiului (Săliște town, Poiana Sibiului, Sadu), Făgăraș Basin (Cârțișoara, Porumbacu de Jos), Hârtibaciu Plateau (Roșia, Bârghiș, Brădeni, Alțîna). It is interesting to note that most urban centres, including the two cities, Sibiu and Mediaș, had immigration rates below the county average in 2021. This implies that migration paths were redirected towards the suburbs, the rural areas or the small towns, such as Cisnădie, which is also a suburban town (fig. 8).

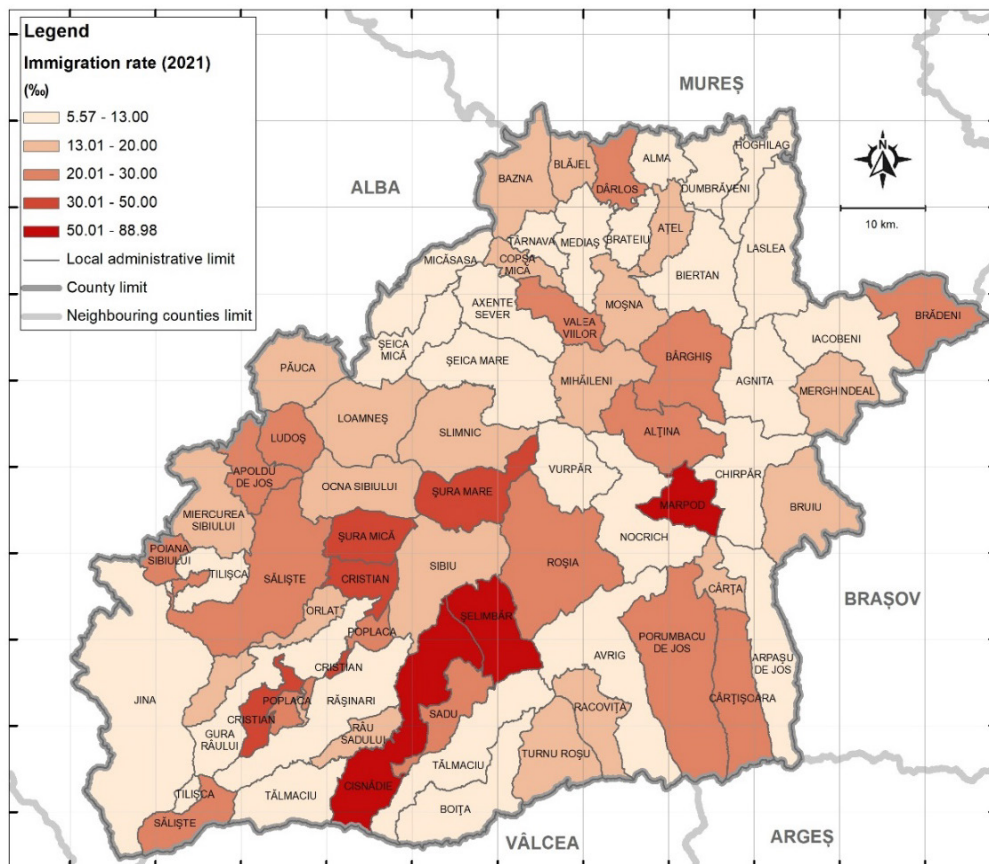


Fig. 8. The immigration rate at local administrative level in Sibiu County in 2021.
Data source: INS (2024)

The lowest values of the immigration rate were registered in the less attractive communes of Mărginimea Sibiului, such as Tilișca (5.57‰ – the lowest value in the county, Jina), along Târnava Mare Corridor and in the surrounding hills (Micăsasa, Alma, Mediaș City, Biertan, the town of Dumbrăveni), in some communes of Hârtibaciu Plateau that are further away from the city of Sibiu (Iacobeni, Chirpăr).

3.5. The emigration rate

Just like in the case of immigration, the emigration rate was very high in Sibiu County at the beginning of the 1990s, a direct consequence of the long-awaited freedom of movement after the fall of the communist regime in December 1989. Therefore, the highest emigration rate (21.87‰) was registered in 1992, the first year when data was available. However, the values of the emigration rate soon dropped to 10-12‰ throughout the rest of the 1990s and reached a minimum value of 9.71‰ in 2001. After 2002, the values of the emigration rate increase steadily, at the same time with the immigration rate, which means that most of the migration took place within Sibiu County, as people moved from urban areas to rural areas, for instance. The process of suburbanization became more important, and the emigration rates increased to more than 17‰ in 2010. After a short decline between 2011 and 2015, the emigration rate reached again 17‰ in 2016 and maintained high values in the following years, with a maximum of 17.76‰ in 2018. After a short decrease in the first year of pandemic (2020), the emigration rate registered a similarly high value in 2021, 17.42‰ (fig. 9).

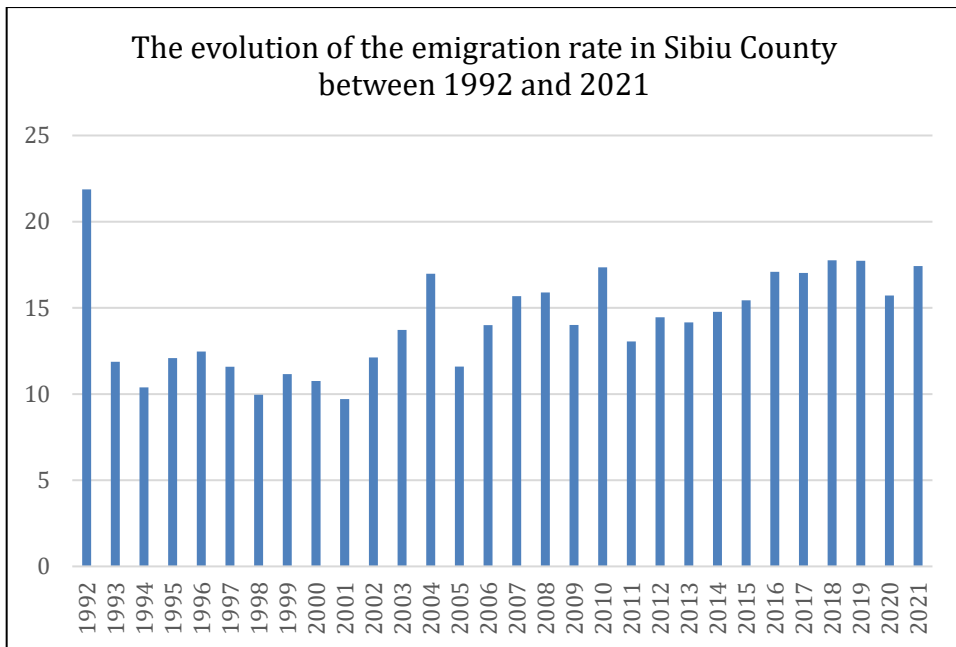


Fig. 9. The evolution of the emigration rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

In 2021, the highest emigration rates were registered in rural areas along Târnava Mare Corridor and the surrounding hills (Șeica Mare 28.41‰ – the highest value in the county, Micăsasa, Blăjel, Bazna), near the city of Sibiu (for instance in Șelimbăr, due to the remigration from the suburb to the core city), in Mărginimea Sibiului (Poiana Sibiului, Râu Sadului, Poplaca, Orlat), Hârtibaciu Plateau (Bârghiș, Mihăileni, Marpod), Secașe Plateau (Ludoș, the town of Ocna Sibiului). A very high value was also recorded in the city of Sibiu, 19.02‰, which continued to provide migrants to the nearby suburbs during the pandemic (fig. 10).

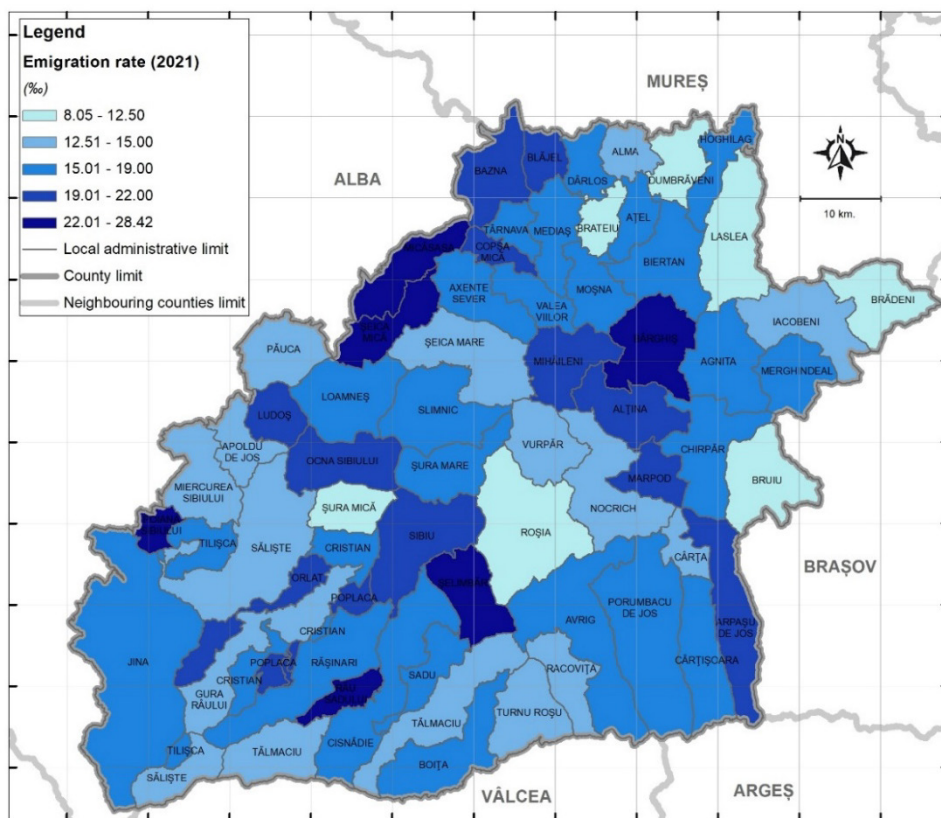


Fig. 10. The emigration rate at local administrative level in Sibiu County in 2021.

Data source: INS (2024)

The lowest values of the emigration were recorded in 2021 in some communes in the eastern and southern parts of Hârtibaciu Plateau (Brădeni 8.05‰ – the lowest value in the county, Bruuiu, Roșia, Iacobeni), in the eastern

part of Târnava Mare Corridor and its surrounding hills (Laslea, Brateiu, the town of Dumbrăveni) or in Șura Mică commune near Sibiu. Most towns had also low values of the emigration rate, usually below the county average.

3.6. The net migration rate

The net migration contributed significantly to the population growth in Sibiu County during the last three decades, even more than the natural balance rate. The net migration rate evolved in an almost opposite manner compared to the natural balance rate, so they have compensated each other, resulting in total balance rates close to zero for many years. The net migration rate had negative values at the beginning of the 1990s, when many people fled from Romania and from Sibiu County to other countries, especially Germany in the specific case of Sibiu County, where the former German (Saxon) population outmigrated in large numbers. As a result, the lowest value of the net migration rate (-5.92‰) was recorded in 1992, the first year when data was available. It is very likely that the values were even lower in 1990 and 1991. The generally harsh economic and social conditions of the 1990s determined a continuous high outmigration, which was reflected in the negative values of the net migration rate, with some exceptions (in 1994 or 1999) (fig. 11).

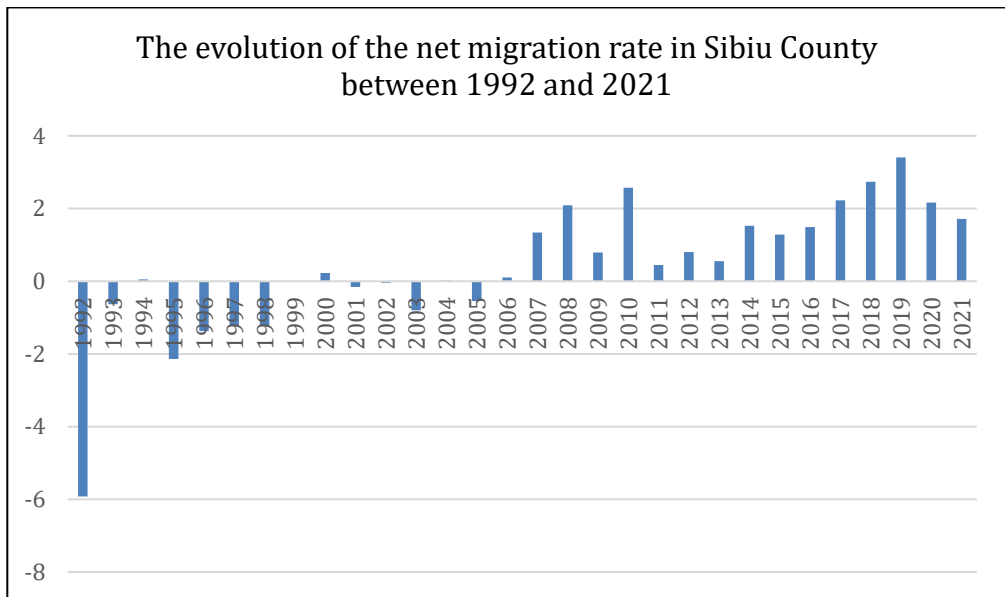


Fig. 11. The evolution of the net migration rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

Between 1999 and 2006, the values of the net migration rate fluctuated around zero, as the number of emigrants was similar to the number of immigrants in Sibiu County. It must be said that in the 2000s Sibiu County was already well-perceived in Romania as a developed region, which provided important economic and social opportunities for the population. This status was confirmed at a very high level when the city of Sibiu became a European Capital of Culture in 2007. Romania's accession to the European Union in that same year (2007) also played an important role, as Sibiu became an important economic and transportation hub, with many flights from Sibiu Airport to several destinations in Germany and other European countries. As a result, since 2007, the number of immigrants to Sibiu County has exceeded the number of emigrants every year, resulting in a positive net migration rate for Sibiu County, which has greatly impacted the population growth of the county up until now. The second highest value of the net migration rate was recorded in 2010 (2.57‰), while the highest value was registered in 2019 (3.41‰), right before the pandemic. During the pandemic, the values of the net migration rate declined slightly, but remained positive (1.71‰).

The positive values of the net migration rate in Sibiu County reflect the attractiveness of the county at national level, as it continues to attract people from all over the country and even from abroad. The positive values of the net migration rate compensate (partially or totally) the negative values of the natural balance rate.

It is interesting to note that in 2021 the local administrative units that had high values of the net migration rate are the same with those that had high values of the natural balance rate. This highlights the fact that most migrants are young people, who also have a contribution in terms of the natural balance rate, as they are in most cases families with kids. Therefore, the highest value of the net migration rate was registered in 2021 in Șelimbăr (63.85‰), followed by the town of Cisnădie (32.24‰), both located on the outskirts of the city of Sibiu and the favorite destination of young people moving out of Sibiu City or people who cannot afford a house or a flat in Sibiu and prefer the existing cheaper options in the suburbs, at short distance from the city. The same logic is behind the high values of the net migration rate in other communes around Sibiu, like Șura Mare, Șura Mică or Cristian. High values of the net migration rate were also registered in some communes in Hârtibaciu Plateau (Marpod, Brădeni, Roșia, Bruuiu), in Secașe Plateau (Apoldu de Jos, Ludoș), Făgăraș Basin (Cârțișoara, Turnu Roșu, Porumbacu de Jos), or Mărginimea Sibiului (the town of Săliște, Sadu) (fig. 12).

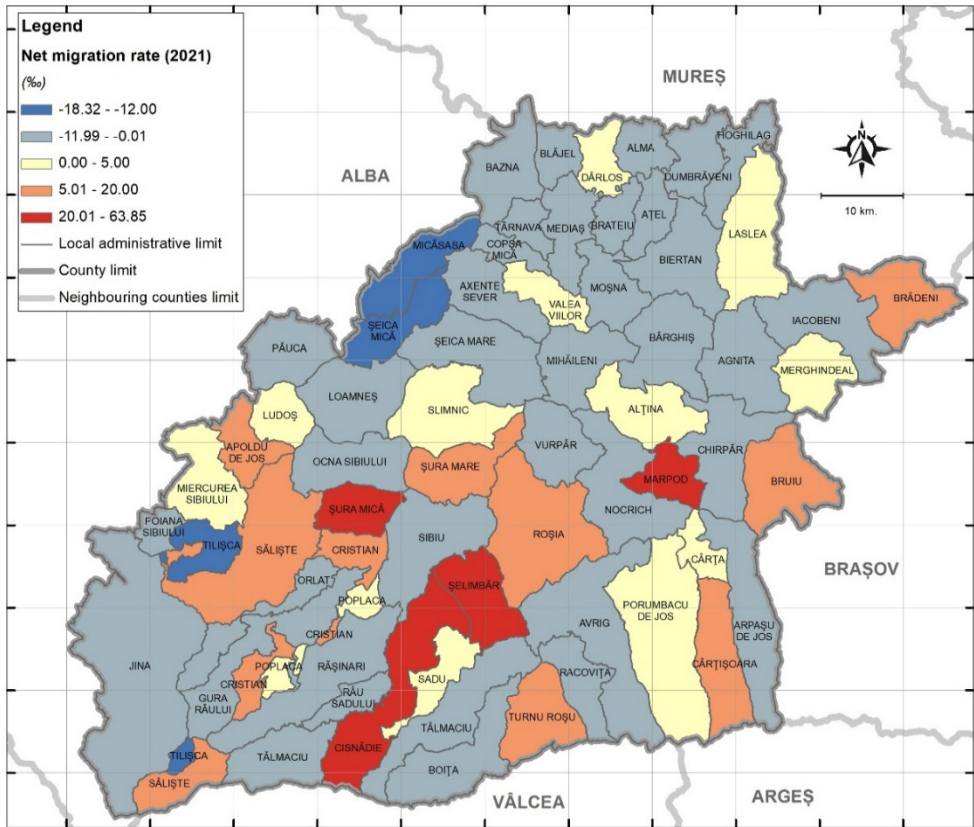


Fig. 12. The net migration rate at local administrative level in Sibiu County in 2021.
Data source: INS (2024)

On the other hand, negative values of the net migration rate characterize large areas of Sibiu County, with the lowest values in the north-western part, at Micăsasa (-18.32‰ – the lowest value in the county), Șeica Mică, Blăjel, Bazna and other communes along Târnava Mare Corridor and in the surrounding hills, as well as in the western part of Mărginimea Sibiului (Tilișca, Râu Sadului, Jina), the eastern part of Făgăraș Basin (Arpașu de Jos). Most of the urban centres, including the cities of Sibiu and Mediaș, had negative values of the net migration rate in 2021, as well as before, due to the process of suburbanization.

3.7. The total balance rate

The total balance rate results from the sum of the natural balance rate and the net migration rate in a given territory, such as Sibiu County in this case.

The assessment of the evolution of the total balance rate in the last 30 years (1992-2021) in Sibiu County indicates important fluctuations, from generally negative values in the first part of the period (1992-2005) to generally positive values in the second part of the period (2006-2019), followed by a sharp decline during the pandemic (2020-2021) (fig. 13).

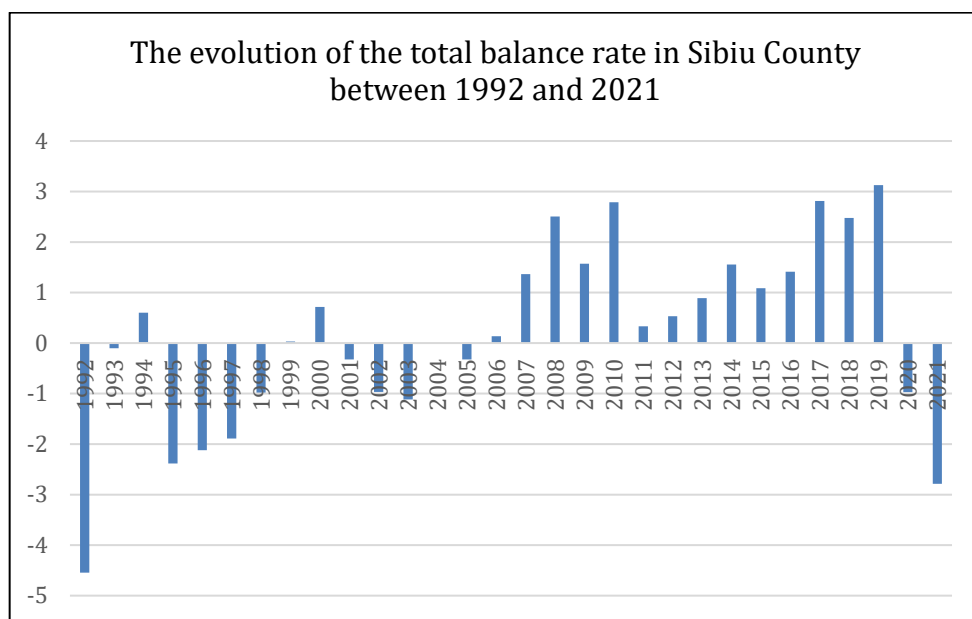


Fig. 13. The evolution of the total balance rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

The sharp decline of the natural balance rate during the 1990s and the negative net migration rate of the same period resulted in negative values of the total balance rate, which recorded its lowest values, -4.55‰, in 1992, the first year for which there is data available. The values of the total balance rate were mostly negative throughout the 1990s and the beginning of the 2000s, with some exceptions (in 1994, 1999 and 2000, when values were slightly above zero). Between 2006 and 2019, the total balance rate was constantly positive, mainly because of the positive values of the net migration rate, while the natural balance rate had values close to zero. There were two periods with higher values of the total balance rate: one between 2007 and 2010, with a high value of 2.79‰ in 2010, and another one between 2017 and 2019, when the highest value of the entire period was recorded, 3.13‰ in 2019. During the pandemic,

because of the sudden increase of the mortality rate, which affected the values of the natural balance rate, the total balance rate also dropped to negative values, reaching as low as -2.79‰ in 2021.

It is noticeable that the total balance rate has had positive values for 14 years in a row (2006-2019), which should have been reflected in a population increase at the county level. However, according to the census data, the population of Sibiu County continues to decline. This apparently paradoxical situation is due to the high number of people who are accounted by the National Institute of Statistics, but are unaccounted at the censuses, because they live mostly abroad, while they still maintain their official residence in Sibiu County.

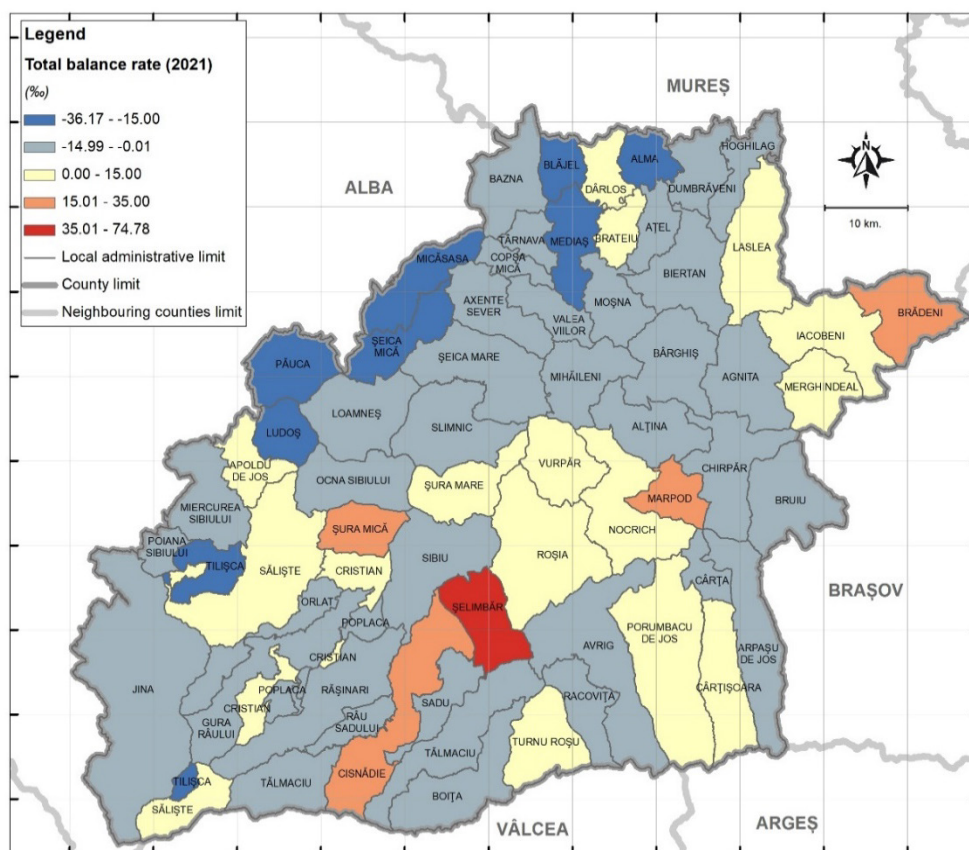


Fig. 14. The total balance rate at local administrative level in Sibiu County in 2021.
Data source: INS (2024)

In 2021, the highest values of the total balance rate were recorded in the suburbs of Sibiu City, mainly in Şelimbăr (74.78‰), the town of Cisnădie (33.38‰) and Şura Mică (30.14‰). These administrative units benefit from both a positive natural balance rate and a high net migration rate in every year. There are other communes in a similar situation, such as many in Hârtibaciu Plateau (Marpod, Brădeni, Roşia, Nocrich, Vurpăr), in Sibiu Basin and around Sibiu City (Şura Mare, Cristian), along Târnava Mare Corridor (Laslea, Brateiu), or in Făgăraş Basin (Cârţişoara, Porumbacu de Jos). Among the urban centres, a positive value of the total balance rate was recorded in 2021 in the town of Sălişte.

However, most of the local administrative units registered negative values of the total balance rate in 2021, as well as in previous years. The lowest values were recorded in the western part of the county, with the lowest value by far in Micăsasa (-36.17‰). Other areas with low values of the total balance rate are Mărginimea Sibiului (Tilişca, Boiţa, Râu Sadului), Târnava Mare Corridor and the surrounding hills (Şeica Mică, Blăjel, Alma, the city of Mediaş, the town of Copşa Mică), Secaş Plateau (Ludoş, Păuca). Most urban centres had negative values of the total balance rate in 2021. In Sibiu City, the total balance rate was -8.78‰ in 2021, a rather low value, which was also caused by the effects of the pandemic.

4. Discussion

Taking into account the last 10 years, the demographic situation of Sibiu County may be looked at differently from the point of view of the censuses and from the point of view of the data provided by the National Institute of Statistics. Between the two sets of data there is a huge difference, not only in terms of total population numbers (which are completely different), but also from the point of view of the population dynamics. For instance, according to the censuses, the population of Sibiu County declined from 397322 inhabitants in 2011 to 388325 inhabitants in 2021. The decline is not as sharp as it was between 1992 and 2011. According to the National Institute of Statistics, the population that officially resides in Sibiu County increased slightly from 461629 inhabitants on the 1st of January 2011 to 467856 inhabitants to the 1st of January 2022 (the closest date to the 2021 census, which took place on the 1st of December 2021). As mentioned before, the difference of about 80,000 inhabitants between the two sets of data is due to the large numbers of people who live permanently or almost permanently abroad, but maintain their official residence in Sibiu County. The same situation is recorded in all Romanian counties.

Taking into consideration the census data, and assessing the population dynamics between 2011 and 2021, it comes out that the steepest decline was recorded in the case of the urban centres, including the cities of Sibiu and Mediaş, as well as many smaller towns (Dumbrăveni, Agnita, Copşa Mică). An important decrease in population numbers was also recorded in the western part of Sibiu County, especially in Secaşe Plateau (Păuca, Ludoş, Apoldu de Jos, Loamneş), in the North and North-West, along Târnava Mare Corridor and in the surrounding hills (Micăsasa, Bazna, Blăjel, Alma, Aţel, Biertan, Moşna, Axente Sever), where the population dropped by more than 8% in 2021 compared to 2011 (fig. 15).

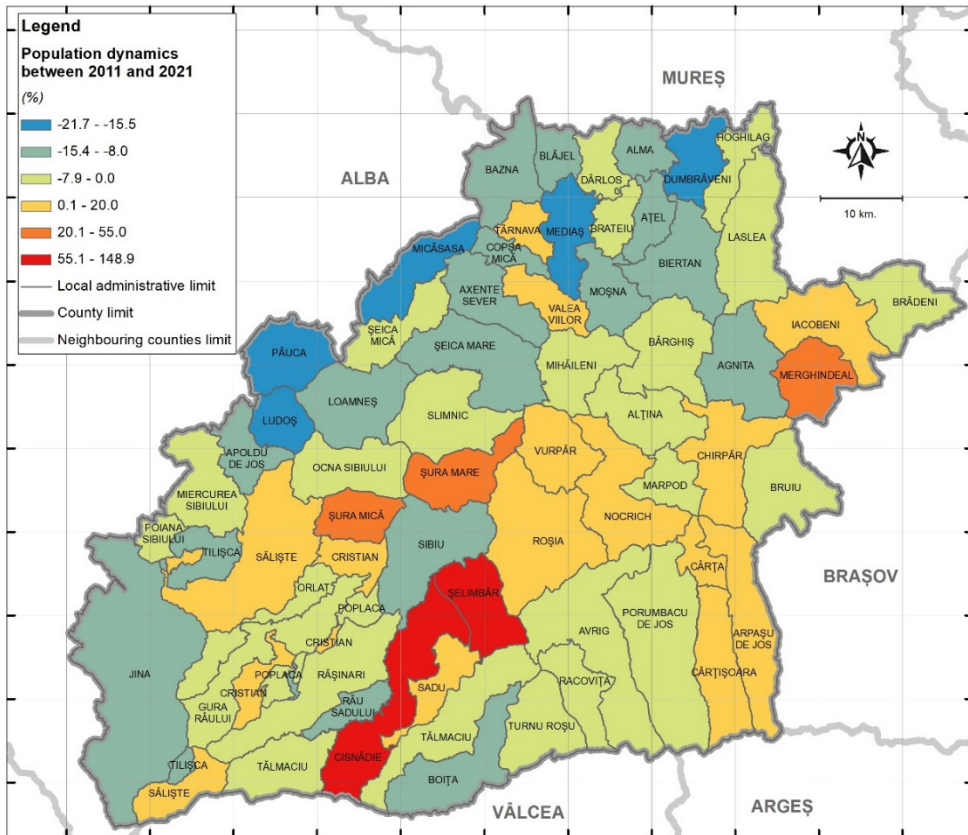


Fig. 15. The population dynamics at local administrative level in Sibiu County between 2011 and 2021.

Data source: population censuses of 2011 and 2021

On the other hand, there are many administrative units which registered an important demographic increase, even a spectacular one in the case of the Sibiu City suburbs such as Șelimbăr, which had an increase by 148.9%, meaning that the population more than doubled in 2021 (17492 inhabitants) compared to 2011 (7028 inhabitants). A significant increase by more than 8000 inhabitants (56%) was also recorded in the town of Cîsnădie, also very close to the city of Sibiu. The same positive trend was registered in other communes near Sibiu, such as Șura Mare, Șura Mică, Roșia, Cristian, Sadu. One may state that the population decline in the city of Sibiu, of about 13000 inhabitants between the two censuses of 2011 and 2021, was compensated by a sharp increase of the population in its suburbs, so that the population of Sibiu Metropolitan Area recorded an increase on the whole.

The situation is very much the same in the case of the suburban areas of the city of Mediaș and the town of Copșa Mică, where the communes of Târnava and Valea Viilor recorded an overall demographic increase between 2011 and 2021. However, this was not enough to compensate for the demographic loss in the two urban centres. Actually, the area of Târnava Mare Corridor and the surrounding hills in the northern part of Sibiu County suffered the biggest demographic decline in Sibiu County between 2011 and 2021, and had an impact on the overall demographic decline in the county as a whole.

Positive demographic trends were recorded between 2011 and 2021 in some communes of Hârtibaciu Plateau, characterised by high birth rates (Merghindeal, Iacobeni, Vurpăr, Nocrich), as well as in Făgăraș Basin (Arpașu de Jos, Cârța, Cârțișoara).

5. Conclusions

Sibiu County has been characterised by a better demographic situation than the rest of Romania in the past three decades. The birth rate in Sibiu County has been around 10‰ for many years, above the national and regional average. The mortality rate had similar values, around 10‰ for many years, resulting in a natural balance rate around zero. However, during the pandemic (2020-2021), the birth rate dropped and the mortality rate increased, which determined a negative natural balance rate at the level of Sibiu County, as low as -4.5‰ in 2021. The net migration rate, on the other hand, has been positive in every year since 2006, reaching the highest value of 3.41‰ in 2019, right before the pandemic. The positive net migration rate determined also positive values of the total balance rate in Sibiu County between 2006 and 2019, reaching the highest value of 3.13‰ in 2019. However, the steep decline of the

natural balance rate during the pandemic also affected the total balance rate, which became negative in both 2020 and 2021. Nevertheless, the total balance rate is expected to reverse back to positive values after the end of the pandemic.

Within Sibiu County, the major recent demographic process is the suburbanization. Areas around the city of Sibiu, especially the commune of Șelimbăr and the town of Cisnădie, have experienced a huge demographic growth, due to migration, but also due to the natural balance rate, which increased suddenly because most of the migrants are young families. Similar situations, although at a lower scale, were recorded in other communes around the city of Sibiu, such as Șura Mare, Șura Mică and Cristian, as well as in communes in Hârtibaciu Plateau (Roșia, Nocrich, Vurpăr, Merghindeal, Chirpăr, Iacobeni), characterised by high birth rates. In contrast, many communes in the western and north-western parts of Sibiu County, such as those in Secașe Plateau (Ludoș, Păuca, Loamneș, Apoldu de Jos), Târnava Mare Corridor and the surrounding hills (Micăsasa, Șeica Mare, Axente Sever, Blăjel, Bazna, Alma, Ațel) and even in Mărginimea Sibiului (Tilișca, Râu Sadului, Jina) experienced a population decline due to outmigration and a negative natural balance rate and a negative net migration rate.

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