

DEMOGRAPHIC AND SOCIAL ANALYSIS OF THE HABITATIONAL AXIS ALONG THE VIA TRANSILVANICA TOURIST ROUTE IN BISTRIȚA-NĂSĂUD COUNTY

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Abstract: *This study explores the demographic and social structure of the communities along the Via Transilvanica route in Bistrița-Năsăud County. The research is based on recent statistical data and field observations, providing a detailed picture of the population distribution and demographic growth rate. The study identifies the main residential axis crossed by the route. It also addresses aspects related to family structure, educational level, community participation and social relations. A key aspect of the research is the link between the axis and the route's tourism potential, emphasising how tourism can stimulate social and cultural interactions in the county. The study contributes to understanding the social and demographic complexity of the communities along the axis and emphasises the importance of the route for tourists.*

Keywords: Habitational Axis, Socio-demographic aspect, Via Transilvanica tourist route, Bistrița-Năsăud County

1. Introduction

The geographical axis is defined as a "line of spatiotemporal shape, a line that allows in a temporal-spatial way, the diagnosis and geographical forecasting of a territory, a territory that can take different geometric conformations, and dimensions according to the capacity of component polarization" (Pop, 2003) grafting the territorial planning activity in practice, for example, within the axis, must respond to the elaboration of the main indicators in the development and geographical harmonization of the territory (Pop, 2004): the study of natural, social and economic conditions.

The geographical and social axis are concentrated and spread to and from the poles of development, the flows of population, goods, capital and information thus playing an important role in their growth and dynamics (Pop, 2016).

The development axis concentrates and spreads towards and from the development poles, population flows, goods, capital and information thus playing an important role in their development and dynamic. Also, the development axis facilitates the spatial diffusion process of the development from the urban centres towards the near rural settlements. (Iurea & Braghină, 2012)

This diffusion process manifests mainly along the major communication routes. Development axis thus plays an essential role in the urban-rural relationship. (Iurea & Braghină, 2012)

The development of the polycentric networks determines the emergence of the structuring axis which, by their favorabilities, may attract investments and enable superior development on the accessibility routes between development poles (Peptenatu et al., 2009).

Regional development is a spatio-temporal process characterized by the expansion of urban areas through which rural/semi-rural areas are integrated into urban infrastructures. (O'Driscoll, et. al, 2023) The development of the habitational axis is linked to the topography of regional development and economic, social and environmental outcomes.

Individual socio-demographic characteristics influence the composition of residential environments, employment considerations, and resources devoted to transportation, all of which influence individual travel behaviour. (O'Driscoll, et. al, 2023)

The habitational axis formed along the Via Transilvanica tourist route is located in the rural areas of Bistrița-Năsăud County, except for one component of the axis, which is Bistrița.

Rural areas are sensitive to change and can be easily affected by it, and tourism is one of the most powerful agents of change that can affect a territory. (Luiza Souza, 2019)

In many countries, rural areas protect regional natural and cultural heritage, attracting tourists in search of unspoiled nature, tranquillity, personal contact with cultural heritage and an authentic experience. (Luiza Souza, 2019)

Tourism, especially rural tourism, depends on the ability of the local community to make tourists feel welcome and on the social and demographic characteristics of the local community. (Luiza Souca, 2019)

The cultural route is a feasible strategy for the rural revitalization of villages with historical value. (Zhou, Zijie et. al,2022)

When people are place attached, they may adopt pro-social and pro-environmental behaviours to protect their place to assist in its functional purpose (tourism benefits) and hence further support tourism development. This in turn can further contribute to meeting other key sustainability and wellbeing goals and promote residents' quality of life.(Ramkissoon, H. ,2020).

People are constantly interacting with other family members, co-workers, friends, neighbours or even strangers, either in person or through online social networks. (David Boto-García et.al , 2022)

The Via Transilvanica tourist route is an important point in social development, by creating links and facilitating interactions between locals and tourists.

The concept: Via Transilvanica is a long-distance road, a concept known and encountered all over the world, be it pilgrimage trails such as El Camino, the Way of St. James, or the wild, long-distance trails of North America such as the Appalachian Trail. (<https://www.viatransilvanica.com>)

The project's signage is an integral part of the overall concept, so we've designed a route where no hiker is allowed to get lost. Along the more than 1,400 miles, hikers will find the trail's symbol in the form of natural stone (andesite) bollards installed mile after mile, along with signposts at intersections and paint markings very often. These andesite bollards are works of art sculpted individually at the sculpture camps on the Tășuleasa Social campus by Romanian and foreign sculptors. The bollards are the identifying element that makes Via Transilvanica one of the largest outdoor sculpture exhibitions in the world that we invite you to discover on the move.(<https://www.viatransilvanica.com>)

Mission and Values: The mission is to maintain, promote and identify development opportunities for the first long-distance trail in Romania, as well as to create a solid common platform that will sustainably unite all stakeholders (hikers, hosts, authorities, partners, volunteers, local communities). (<https://www.viatransilvanica.com>)

Being a Tășuleasa Social project, Via Transilvanica is first and foremost a social project, because it has the community at its center. The people of the road are the people who have built this route, the people who walk it and will walk it, the people who offer hospitality on the route and the people who carry its news further within the country and beyond its borders. Perhaps the best illustration of the social character of this project is the kilometre markers, which teach us that art is not a luxury, but a social circuit.(<https://www.viatransilvanica.com>)

Purpose: Via Transilvanica aims to reinvent (especially rural) tourism in Romania, to make it easier for travellers to access the communities along the route and their stories, helping them to develop sustainably and responsibly. (<https://www.viatransilvanica.com>)

Integration of the habitation axis of Bistrița -Năsăud county into the Via Transilvanica tourist route

Via Transilvanica measures 1420 kilometres and 32,000 m positive difference in level, including two alternative routes and several loops that lead to various points of interest. The route overlaps with forest roads, national, county or municipal roads, easement roads, pastures or other tourist paths. The entire route is divided into seven regions called "lands": Bucovina, Upper Land, Terra Siculorum, Terra Saxonum, Terra Dacica, Terra Banatica, and Terra Romana. Each county is divided into recommended stages and the average distance of a stage is 20 km. In the Hiking Guide, you will find a detailed description of each county and each recommended stage. (<https://www.viatransilvanica.com/ro>)

The recommended hiking season is from May to October, and preparation for the hike requires the most detailed information from official sources.

(<https://www.viatransilvanica.com/ro>)

The Via Transilvanica tourist route analysis is realised at the Bistrița -Năsăud county level. At the national level the route presents a distinct organisation for each region, county crossed. The administrative territorial unit in this case is located in Ținutul de Sus.

Leaving Poiana Stampei also leaves the Bucovina region. From here you go on to Lunca Ilvei, which is already in Bistrița-Năsăud county, at the foot of the Rodnei Mountains, where the 277km-long region of Ținutul de Sus begins. (<https://www.viatransilvanica.com>)

2. Methodology

The realisation of the article uses statistics and field research as a method of analysis.

Statistics is a branch of science concerned with collecting, organizing, analyzing data and drawing inferences from samples of the entire population. (Ali Z, Bhaskar SB.,2016).

The process of statistical analysis requires access to data sources.

At the country level, the Romanian National Institute of Statistics manages one of the most complex statistical databases, called TEMPO-Online, which is made available to the public via the TEMPO-Online web service. (Necula et.al , 2019)

The content of the TEMPO-Online database comprises statistical indicators, metadata associated with statistical indicators (definition, methodology) and a continuous time series that begins with 1990 (with monthly, quarterly and annual periodicity). (Necula et.al, 2019)

The Tempo package is highly flexible offering a convenient set of custom functions to access open data from the TEMPO online database. (Necula et. al ,2019) Researchers and data scientists in academia, government, and industry can use these functions to download, explore and visualize statistical data in an automated and convenient manner. (Necula et. al, 2019). Foreseen usage of the package can be categorised as automated data pipelines for analytics, data visualization and exploration, or data download as an independent step for future processing. (Necula et. al, 2019). Another source of statistical data is the county Statistical Yearbook - 2023

3. Results

To present the results clearly, the research is structured as follows: I. Definition, description and localization of habitational axis; II. Social-demographic analysis.

I.A definition of the term analyzed HABITAT 1. Element of the human ecosystem consisting of environmental and psychosocial factors. 2. An urban structured space occupied by a human community. 3. Balanced and unitary set of living conditions necessary for civilized, modern man; (p. ext.) the environment in which man lives. (<https://dexonline.ro/definitie/habitat/definitii>)

The habitational axis is a term that utilizes the principle of the geographic axis to describe a line or route that connects different living areas in a city, town, village or region.

This can include roads, boulevards, parks and other public spaces that facilitate access and connectivity between housing and other urban amenities such as schools, shops and workplaces.

As a result of the field research carried out, the habitational axis formed by the Via Transilvanica tourist route is made up of the following localities: Monor, Poșmuș, Jeica, Mărișelu, Măgurele, Orheiul Bistriței, Pietriș, Cușma, Domnești, Monariu, Bistrița, Dorolea, Bistrița Bârgăului, Mureșenii Bârgăului, Ciosa, Lunca Ilvei (Figure 1)

Description Habitational axis: Between the localities Monor-Poșmuș-Jeica-Mărișelu the axis is continuous (forms the first axis), due to the geographical characteristics of the area and the structure of the road transportation infrastructure in Mărișelu the axis splits in two directions, two residential axis.

The second axis: Mărișelu-Măgurele-Orheiu Bistriței-Pietriș-Cușma-Dealul Negru, county road DJ172 G (connecting point)

Third axis: Mărișelu-Domnești-Monariu-Bistrița-Dorolea . In the area of Cușma, the axis joins and makes the fourth axis Bistrița Bârgăului-Mureșeni Bârgăului-Ciosa-Lunca Ilvei. (Table 1)

Figure 1 . Location of the Habitational Axis crossed by Via Transilvanica



Source: <https://www.viatransilvanica.com/ro>

Via Transilvanica crosses the county of Bistrița-Năsăud over a distance of about 200 kilometres, the difference of 77 kilometres is areas without settlements (hills, mountains). County roads crossed by the tourist route : DJ172: Monor - Șieuț - Șieu; DJ173: Bistrița - Budacu de Jos - Cetate; DJ173A: Bistrița Bârgăului - Tiha Bârgăului; DJ172D: Prundu Bârgăului - Lunca Ilvei; The Via Transilvanica route passes through the village of Cușma, which is accessible via DJ172G.

From here, the route continues west towards the village of Petriș and east towards Bistrița Bârgăului. E58: The route intersects the E58 near Bistrița, which connects the cities of Dej and Suceava.

Table 1 Description of the component localities of the habitational axis

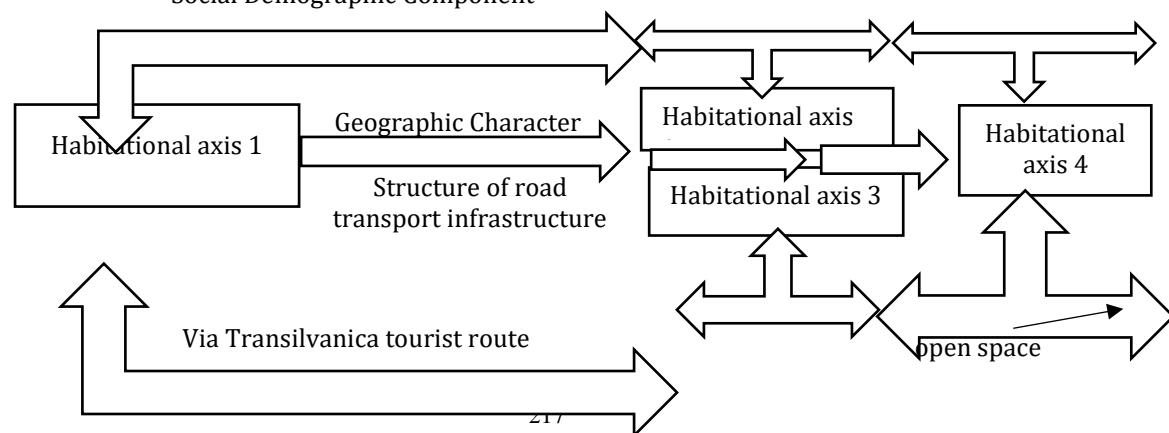
Name	Classification	Tourist Attractions (most important)
Monor	Village of residence of Monor commune	Cloud Volcanoes Nature Reserve (2 ha)
Poșmuș	village from Șieu commune	Teleki Castle
Jeica	Village in Mărișelu commune	Via Transilvanica
Mărișelu	Village of residence of Mărișelu commune	Râpa cu Păpuși" nature reserve (2 ha)
Măgurele	village in the commune Mărișelu	Via Transilvanica
Orheiul Bistriței	village in commune Cetate	Nature reserve "The Daffodil Glade on the Budacului Valley Plateau" (6 ha).
Petriș	village in commune Cetate	Via Transilvanica
Cușma	village in Livezile commune	Nature reserve "Piatra Cușmei" (5 ha).
Domnești	village in Mărișelu commune	Nature reserve "Râpa cu păpuși" (2 ha).
Monariu	village in the commune Budacu de Jos	Former Evangelical Church, today Pentecostal Church, historical monument of national importance
Bistrița	municipality county residence	Symbol of the city Evangelical Church
Dorolea	village in commune Livezile	Via Transilvanica
Bistrița Bârgăului	Village of residence of Bistrița Bârgăului commune	The Bistrița Ardeleană Keys
Mureșenii Bârgăului	village in Tiha Bârgăului commune	Via Transilvanica
Ciosa	village in Tiha Bârgăului commune	Via Transilvanica
Lunca Ilvei	Village of residence of Lunca Ilvei commune	Crovul de la Larion Nature Reserve (Natura 2000 Site) (3.015 ha)

Source: Realised by the author

It is worth mentioning that in the analyzed localities, where no important tourist attractions were found in the field research, the Via Transilvanica tourist route is listed as a main tourist attraction.

II. The social demographic analysis is carried out at the level of the four residential axis that make up the habitational axis crossed by the Via Transilvanica tourist route. (Figure 2)

Figure 2. Sketch representation of the concept of the analyzed habitational axis
Social Demographic Component



Source: Realised by the author

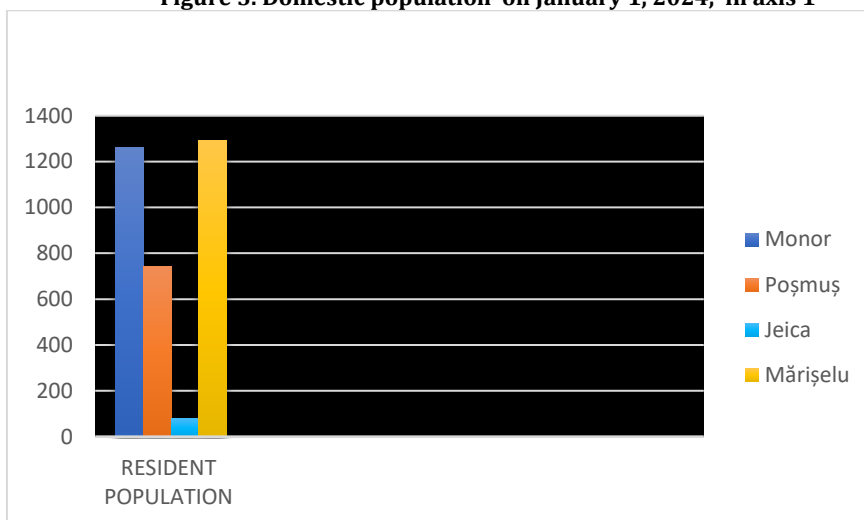
In Figure 2 is in open space format tourist route continues (not limited) outside the county of Bistrița - Năsăud.

In the paper Open Space, Andrea Maria Hartz states that a general planning category, open space fulfils a large number of often overlapping functions. The quality and facilities available determine the potential of open spaces and in what form and to what extent they can be used and fulfil specific functions. (Hartz, Andrea Maria ,2018)

It analyzes the population by domicile on January 1, 2024. The population by domicile on January 1st of the reference year represents the number of persons with Romanian citizenship and domicile on the territory of Romania, delimited by administrative-territorial criteria, and Graduates by levels of education.

A.Habitational axis 1 : Monor-Poșmuș-Jeica-Mărișelu

Figure 3. Domestic population on January 1, 2024, in axis 1

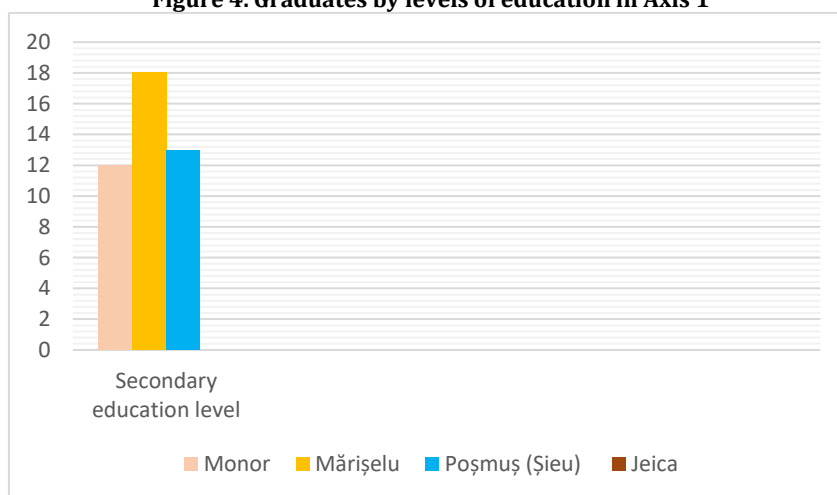


Source: Realised by the author,

data source: <http://statistici.insse.ro:8077/tempo-online>

https://bistri ta.insse.ro/wp-content/uploads/2024/04/Anuar_BN_2023_final.pdf

Figure 4. Graduates by levels of education in Axis 1



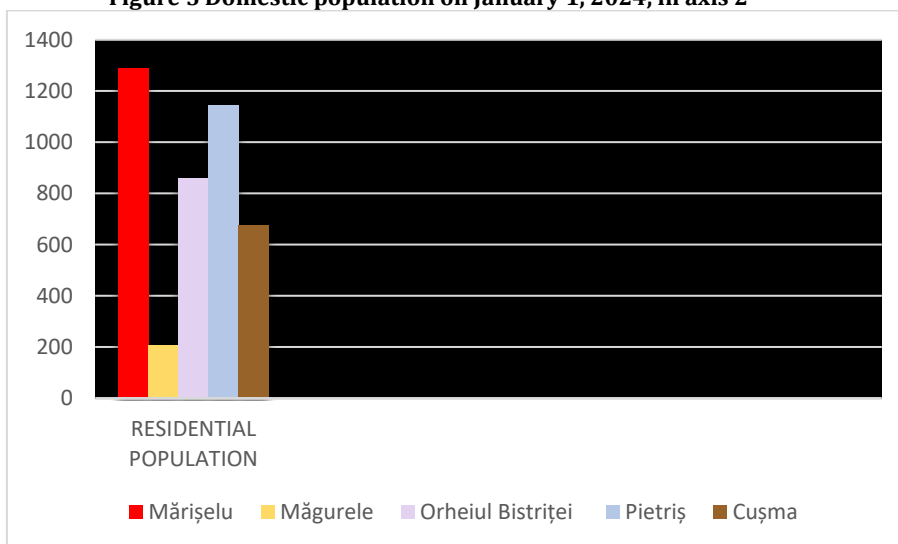
Source: Realised by the author,

data source: <http://statistici.insse.ro:8077/tempo-online>

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According to the statistical yearbook of Bistrița -Năsăud county within the analyzed axis as school structure there is a general school in Monor, Mărișelu, two educational units in Șieu. The population of Poșmuș learns (goes to school) in Șieu, in Jeica there is no school, and the population is older.

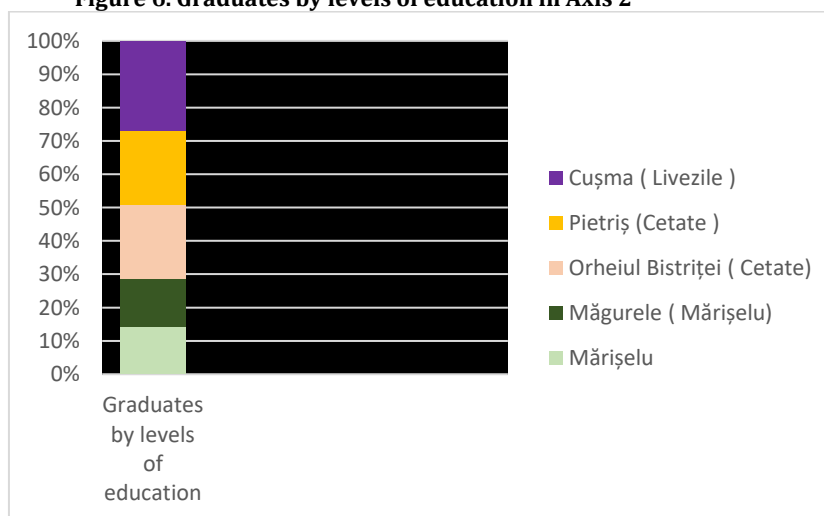
B. Habitational axis 2 Mărișelu-Măgurele-Orheiul Bistriței-Pietriș-Cușma
Figure 5 Domestic population on January 1, 2024, in axis 2



Source: Realised by the author,
 data source: <http://statistici.insse.ro:8077/tempo-online>
https://bistri ta.insse.ro/wp-content/uploads/2024/04/Anuar_BN_2023_final.pdf

Due to the rural conditions found in Romania, people from the village commute to the common centre to continue their studies

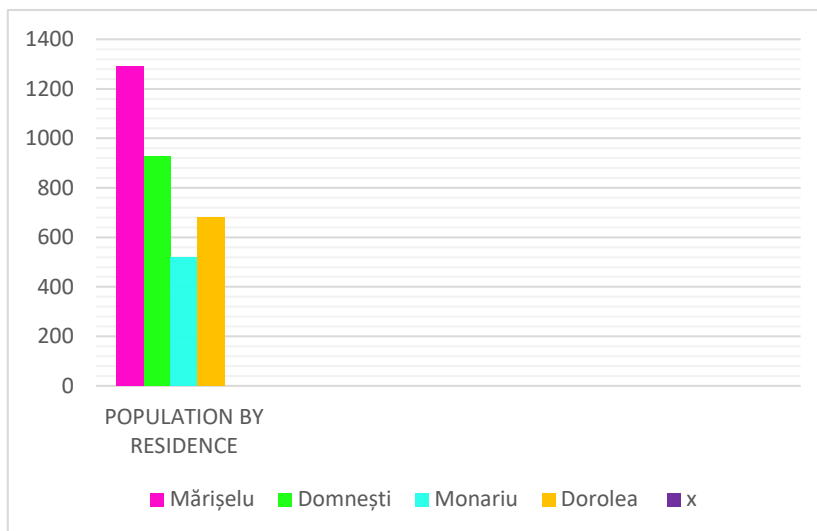
Figure 6. Graduates by levels of education in Axis 2



Source: Realised by the author,
 data source: <http://statistici.insse.ro:8077/tempo-online>
https://bistri ta.insse.ro/wp-content/uploads/2024/04/Anuar_BN_2023_final.pdf

C. Third axis Mărișelu-Domnești-Monariu-Bistrița-Dorolea

Figure 7. Domestic population on January 1, 2024, in axis 3



Source: Realised by the author,
 data source: <http://statistici.insse.ro:8077/tempo-online>
https://bistri ta.insse.ro/wp-content/uploads/2024/04/Anuar_BN_2023_final.pdf

Bistrița is the only city in the housing axis studied and is therefore listed separately in the statistics. (Table 2)

RESIDENT POPULATION on January 1, 2024, - 94523 ;

Table 2 Graduates by levels of education in Bistrița

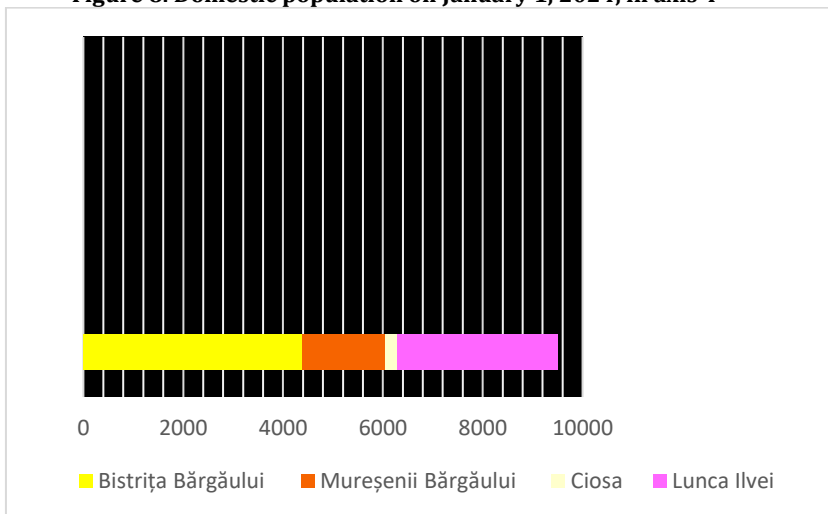
Graduates form	Number
Secondary school	857
High School	1066
Professional	288
Post-secondary (including special education)	260
University - graduates with diploma (bachelor, master, postgraduate courses, doctorate and postdoctoral advanced research programs)	169

Source: Realised by the author,
 data source: <http://statistici.insse.ro:8077/tempo-online>
https://bistri ta.insse.ro/wp-content/uploads/2024/04/Anuar_BN_2023_final.pdf

To be mentioned in axis 3 due to the co-optation of Bistrița in the structure (the main educational centre in the county) the population migrates to the city by commuting to continue their studies.

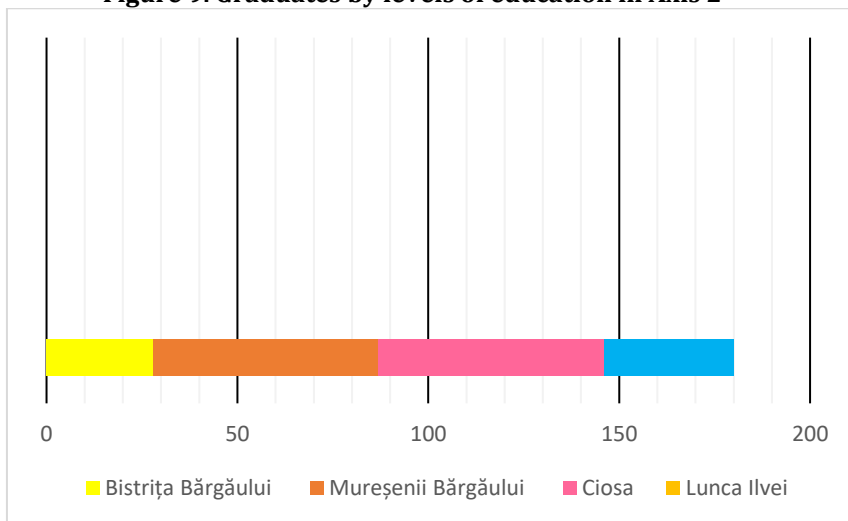
D. The fourth axis Bistrița Bârgăului-Mureșeni Bârgăului-Ciosa-Lunca Ilvei.

Figure 8. Domestic population on January 1, 2024, in axis 4



Source: Realised by the author,
 data source: <http://statistici.insse.ro:8077/tempo-online>
https://bistri ta.insse.ro/wp-content/uploads/2024/04/Anuar_BN_2023_final.pdf

Figure 9. Graduates by levels of education in Axis 2



Source: Realised by the author,
 data source: <http://statistici.insse.ro:8077/tempo-online>
https://bistri ta.insse.ro/wp-content/uploads/2024/04/Anuar_BN_2023_final.pdf

Locals from Mureșenii Bărgăului and Ciosa travel to Tiha Bărgăului for their studies

The event that brings together the communities of the habitational axis and Via Transilvanica is the Via Transilvanica Marathon, a mountain bike sports leisure activity.

The start of the marathon is given in the Tășuleasa Social Campus, and the race starts towards the neighbouring village of Ciosa on a forest road, continues on the contour of mountain paths, part of it on a forest road, but also through bright glades and areas of hayfields towards Poiana Cătunenilor. After a few descents and moderate climbs, you reach Lunca Ilvei, followed by a longer, more difficult climb to Poiana lui Gălan. (<https://maraton.viatransilvanica.com/competitii/maraton/>)

The last 14 kilometres to the finish line are along the contour, with small climbs and descents through the forest and then on a forest road, with medium difficulty. The finish line is also on the Tășuleasa

Campus. You run on the dirt track and forest road, only 2 km on asphalt, no steep climbs or descents, no mountainous or rocky sections, and no technical areas. The difference in level is 1,567 meters. The level of difficulty is easy-medium.

(<https://maraton.viatransilvanica.com/competitii/maraton/>)

The start of the mountain bike race is given in the Tășuleasa Social Campus, and the race starts towards the neighbouring village of Ciosa on a forest road, continues on the contour of mountain paths, part of it on a forest road, but also through bright glades and areas of hayfields towards Poiana Cătunenilor. After a few descents and moderate climbs, you reach Lunca Ilvei, followed by a longer, more difficult climb to Poiana lui Gălan.

(<https://maraton.viatransilvanica.com/competitii/mountain-bike/>)

The last 14 kilometres to the finish line are along the contour, with small climbs and descents through the forest and then on a forest road, with medium difficulty. The finish line is also on the Tășuleasa Campus. The route is dirt and forest road, only 2 km of asphalt, no steep climbs or descents, no mountainous or rocky sections, and no technical areas. The difference in level is 1,567 meters. The level of difficulty is medium.

(<https://maraton.viatransilvanica.com/competitii/mountain-bike/>)

Events such as the Via Transilvanica Marathon contribute significantly to the social development of the Bistrița-Năsăud area by :

A. Strengthening the community: Participation in joint events strengthens the bonds between community members. People have the opportunity to interact, collaborate and share experiences, which contributes to a sense of belonging and solidarity;

B. Volunteering and employment opportunities: Organizing and running events requires the involvement of a large number of volunteers and temporary staff. These opportunities provide practical experience and potential employment for local people;

C. Improved health and well-being: Participation in sporting events such as marathons encourages an active and healthy lifestyle. Social and cultural events can also reduce stress and improve the well-being of participants;

D. Promoting local culture and traditions: Events provide a platform for the presentation and preservation of local culture and traditions. This helps to maintain cultural identity and educate younger generations about their heritage.

4. Conclusion

The present study provided a detailed analysis of the demographic and social dynamics along the Via Transilvanica tourist route in Bistrița-Năsăud County. The results highlight several aspects essential for understanding how this route influences local communities.

First, a significant demographic diversification was observed in the areas adjacent to the route, with an increase in the number of young people and young families settling in these regions. This trend can be attributed to the economic and recreational opportunities offered by the proximity of the tourist route. Secondly, the social analysis revealed a strengthening of community cohesion, thanks to the tourism and cultural activities promoted by Via Transilvanica. These activities facilitated interaction between locals and tourists, contributing to cultural exchange and developing a sense of local pride.

On a social level, Via Transilvanica facilitated an increase in community cohesion and intercultural interactions. The tourist and cultural activities associated with the route encouraged local community participation and promoted a sense of belonging and local pride.

The Via Transilvanica tourist route not only promotes tourism and economic development but also plays a crucial role in the social and demographic revitalization of Bistrița-Năsăud County. Continuing to monitor and sustain these trends is essential to maximize the long-term benefits for local communities.

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