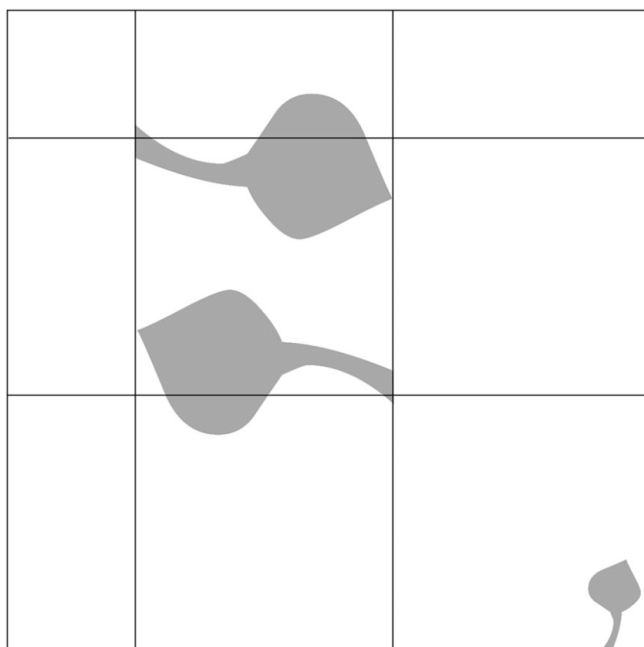


Should Rural Periphery be Retrouted?

Case Vysočina Region, Czechia



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Highlights:

1. An analysis of the regional development was applied to the Vysočina region
2. Although Vysočina is a region on the inner periphery, it is a stabilized area
3. Results show not a concentric, but a belt distribution compared to similar micro-regions
4. Re-thinking of periphery is proposed following the post-productive transition

Abstract: Politicians, and the public often view the peripheral countryside as lagging, depopulated, ageing, and lacking job opportunities and services. Rural development programs in these areas focus on creating jobs in agriculture. The Vysočina region (NUTS3), considered a quintessential Czech inner periphery, was chosen as a case study. Unlike other administrative regions, Vysočina is not a nodal-type region; its unifying element is its peripherality. Thus, the challenges of individual micro-regions do not increase from the regional centre to the periphery but have a strip character, with more developed parts in the north and less developed parts in the south. Hypothetically, the region should belong to the underdeveloped areas of Czechia. However, our results indicate that Vysočina is a relatively stable region. This raises the question of whether we should reconsider the issue of rural backwardness considering transition to a post-productive society.

Keywords: Periphery, countryside, typology, social indicators, region Vysočina, Czechia.

¿Debería repensarse la periferia rural? El caso de la región de Vysočina, República Checa

Ideas clave:

1. Se aplicó un análisis del desarrollo regional a la región de Vysočina.
2. Si bien Vysočina es una región de la periferia interior, se trata de una zona estabilizada.
3. Los resultados muestran una distribución en franja, no concéntrica, en comparación con microrregiones similares.
4. Se propone replantear la periferia tras la transición posproductiva.

Resumen: Los políticos y la opinión pública suelen percibir las zonas rurales periféricas como rezagadas, despobladas, envejecidas y carentes de oportunidades laborales y servicios. Los programas de desarrollo rural en estas zonas se centran en la creación de empleo en el sector agrícola. La región de Vysočina (NUTS3), considerada la periferia interior checa por excelencia, fue elegida como caso de estudio. A diferencia de otras regiones administrativas, Vysočina no es una región nodal; su elemento unificador es su periferia. Por lo tanto, los desafíos de cada microrregión no aumentan del centro regional a la periferia, sino que presentan un carácter de franja, con zonas más desarrolladas en el norte y zonas menos desarrolladas en el sur. Hipotéticamente, la región debería pertenecer a las zonas subdesarrolladas de Chequia. Sin embargo, nuestros resultados indican que Vysočina es una región relativamente estable. Esto plantea la cuestión de si deberíamos reconsiderar la cuestión del atraso rural considerando la transición a una sociedad posproductiva.

Palabras clave: Periferia, zonas rurales, tipología, indicadores sociales, región de Vysočina, Chequia.

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1. Introduction

The countryside is becoming an increasingly important segment of the settlement structure and landscape in Czechia. The number and share of the rural population are steadily, albeit slowly, growing. The rural social system has moved beyond dependency on agriculture. As society transitions from an industrial to a post-industrial phase, the countryside is evolving into an exclusive production environment and an area increasingly devoted to consumer functions –such as housing without agricultural activity, tourism, and various services (Woods, 2010). This shift is likely to change perceptions of the fertile, “rich” countryside versus the mountainous, “poor” countryside. It also presents an opportunity for existing peripheral areas, which offer attractive landscapes for non-productive functions (Vaishar and Št’astná, 2019).

Despite the positive development in the Czech countryside, myths persist about threats of depopulation, aging, unemployment, and the decline of services. These myths often stem from efforts to secure financial support from public funds or from unsubstantiated transfers of experiences from Southern and Eastern European countries, where the countryside is at a different stage of development. While these problems do exist, they affect only a small portion of the most remote rural micro-regions lacking full-fledged urban cores and about a third of very small municipalities

(up to 200 inhabitants). This raises the question of the current link between remoteness and backwardness.

If the state decides to support the countryside more intensively, this support should be directed to the minority of truly endangered micro-regions. Targeted support for these vulnerable rural areas can be both more cost-effective. General support for the countryside tends to benefit richer rural regions, which have more financial and human capital. The necessity of rethinking rurality (Halfacree, 2004) suggests it is the right time to discuss reevaluating the concept of the rural periphery and the indicators used to assess it.

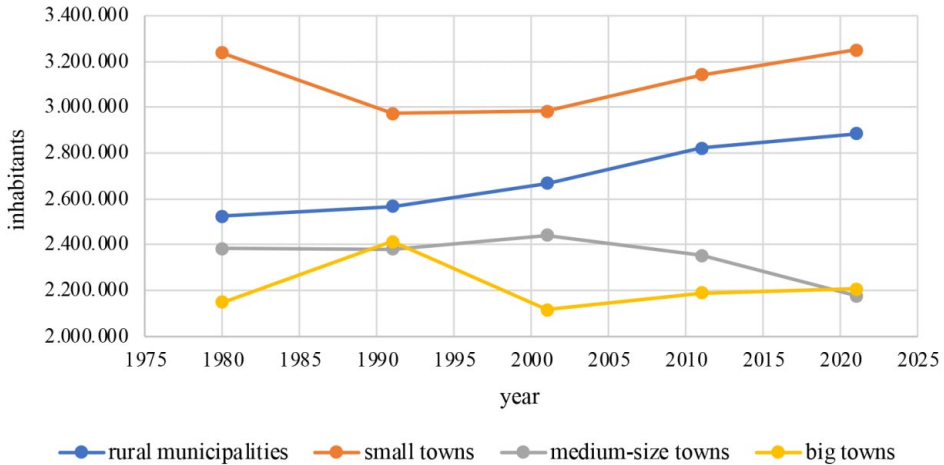
The analysis could be approached from the perspective of regional development theories. We can name neo-Keynesian theories, endogenous growth theories, localization theories, Perroux's growth theory, Friedman's core-periphery model, Schumpeter's theory of innovations¹, Krugman's new economic geography, Florida's creative class theory. The problem is that these are mostly economic theories based on the perspective of companies and their clusters and somehow automatically assuming that economic growth of regions is equal to regional development.

None of these theories can explain why, for thirty years, the number and share of the population of rural municipalities and small towns in Czechia has been growing at the expense of medium-sized cities (Figure 1). These economic theories do not include, except very marginally, such categories as the quality of life of residents, the environment and relationship to nature, demands and stress in congested regions, the impossibility of obtaining housing in economically progressive areas, and the like. These changes can be explained by the theory of the transition from a productive (material, fordist) to a post-productive (post-material, post-fordist) way of life. Krugman's new geography, although it is focused on agglomeration and globalization, also considers a post-productive economy, which emphasizes the shift of labor to services and new communication technologies (Krugman, 1997). Puga (2010) emphasizes the economic benefits of agglomeration. However, regional development is no longer just about economic development, as we want to show in our contribution.

1• Schumpeter comes from Třešť, a small town located in our studied region.

Figure 1.

Czechia: Population development in individual categories of municipalities 1980 - 2021



Explanation: Rural municipalities under 2,000 inhabitants, small towns 2,000 – 19,999 inhabitants, medium-size towns 20,000 – 99,999 inhabitants, big cities 100,000 and more inhabitants. Data source: Population censuses 1980, 1991, 2001, 2011, 2021 (Czech statistical office Prague). Own elaboration.

However, post-productivism primarily means a change in values. The point is that after the basic physical and economic needs of a decisive part of society are met, people in developed countries reorient themselves towards meeting other needs associated with the quality of life (Inglehart, 1971). In general, it is a gradual shift from production and work to consumption. Post-productivism is manifested in the shift in government policy priorities from agricultural production to ecological restoration, the shift in urban consumer demands for quality food to rural producers' demands for quality of life, and in the growing desire of city dwellers to experience a rural idyll, which has translated into demands for rural space for urban consumption (Wu et al., 2024). Even if the share of workers in agriculture increases slightly because of European support for a return to more extensive forms of production, the original values will not return.

Rural residents will also be increasingly interested in the quality of their life, the amount of free time, access to services, and their relationship with the environment. This may also be behind the change from the previously completely predominant migration from rural areas to cities at the beginning of the economically

active age to today's two-way migration, in which urban-to-rural migration is gradually gaining dominance. It is also necessary to consider the aging of the European population, which is reflected in the increasing proportion of residents who do not depend on local economic growth because they subsidize their pensions from the state.

Some scholars use multifunctional rural development as an alternative to post-productivism. However, Almstedt et al. (2014) point out that multifunctionality is more suited to local empirical studies, while post-productivism is better suited to broader geographical contexts and political discourse. One of the possible approaches to peripherality (from our point of view, more like marginality) is aspatiality (Copus, 2001), which overcomes the core-periphery model with new communication and technological means and enables polycentric development.

In our work, we will refer to remote regions with disadvantageous geographical conditions as peripheral. On the other hand, we will refer to underdeveloped regions with a decline of the well-being of inhabitants as marginal (Scott, 2019). According to the core-periphery theory, these should usually be the same areas. However, we will hypothesize that peripheral regions do not necessarily always have to be marginal. We will test this hypothesis using the example of the Vysočina region.

The second assumption, based on the core-periphery theory, is that the intensity of most indicators changes (in the positive or negative sense) with distance from the center. However, peripheries often have weak centers, which may not cover the entire administrative region with their influence, and the values of the indicators change according to other causes. Given that Jihlava, capital of the Vysočina region, is the weakest regional center in the Czech Republic, we will also test this hypothesis.

2. Rural periphery

While large cities are increasingly converging under the pressure of globalization, rural areas, which are much more dependent on the differentiation of natural conditions, are more closely linked to traditional regional patterns of behaviour and vary in distance from regional centres (Lin et al., 2019). Such a differentiation occurs also in a small country such as Czechia, even at the level of a

single region. These differences can also manifest themselves in the quality of life of residents (Bernard, 2018).

However, the concept of rural areas needs to be clarified first. Definitions are mostly based on the rural-urban dichotomy. They use legal status, infrastructure, central functions, and differences in lifestyle. The first question is whether the countryside is still where the city is not. At present, the transition between the city and the countryside is not sharp. In the countryside, we find urban elements, while rural elements penetrate the city. The realistic definition should therefore determine the representation of rural elements in a particular seat or micro-region. However, this is not easy, moreover, these characteristics change both in space and over time. Such an analysis goes beyond the aims of our paper. At the European level, rural definitions are based on population density. There are also some reservations about them, but this is a criterion that is easy to grasp and can be applied without problems in a critical approach in specific cases. However, Johansen and Nielsen (2012) emphasize the local point of view. Some authors (Galluzzo, 2018) developed a special indicator of rurality using quantitative data. Today, the European countryside is increasingly seen as a multifunctional space with diversified functions, where agriculture is increasingly playing the role of landscape maintainer. Pinto-Correia and Breman (2009) tried to illustrate this development with the example of Portugal.

It is clear from the multitude of different definitions, approaches and regional differences that we cannot think of the countryside as a unified space. From a practical point of view, attention is primarily drawn to the peripheral countryside, which theoretically seems to be the most economically and socially threatened. In an industrial society, where the countryside is understood primarily as a space for primary production and a source of primary raw materials, peripherality is derived from the quantity, quality, and accessibility of these resources (Martínez and Ruiz, 2021). In Italy, geographic peripheries are defined by the government in an institutional document as areas affected by increasing depopulation, high rates of ageing, geographic marginality, and various degrees and forms of inequalities in the provision of services and infrastructure (Vendemmia et al., 2021). Peripheral regions are those that have lower-quality resources (for example, less fertile land), a lower-quality human factor, are far from the market, and so on. This manifests itself in lower economic performance, lower investment potential, lower population density, depopulation, unemployment, poorer education level, etc. These ideas are based on

Friedman's core-periphery model, according to which the periphery is characterized by an uneven population and lagging economic development (Oppido et al., 2023).

In a post-productive society, the values of territory are changing. Macroeconomic indicators, employment, population development and other indicators suggest that regions with structural problems are more problematic than regions on the periphery. In the Czech context, these are mainly old industrial regions and, to a lesser extent, micro-regions with intensive agriculture. In the indicator of net disposable household income per capita, the value of the peripheral Vysočina region was the third highest in 2023 after Prague and the Central Bohemian Region. In rural areas, the importance of agriculture for economic development and employment is significantly decreasing (Basile and Cecchi, 2001). Moreover, agriculture itself is undergoing a period of servitization (Vidickiene and Gedminaite-Raudone, 2019). The values of the countryside and rural landscape for consumption, which are represented by tourism, housing without an agricultural function, leisure and services in general, are gaining importance.

Therefore, post-industrial changes can lead to substantial changes in the understanding of the rich and poor countryside, and thus to the relevance of re-evaluating the concept of the periphery. Mountain and foothill regions are generally more attractive for tourism (Salvatore et al., 2018), are not so threatened by climate change and are suitable for subsidized organic agriculture – especially in protected areas (Perpar and Udovč, 2019).

3. The Czech countryside and its differentiation

The simplest divide of rural areas is usually based on the accessibility of regional centers. As a rule, peripherality, measured as the distance from regional centers, is combined with marginality, which is defined as backwardness, expressed by depopulation, aging, unemployment, exclusion, lack of investment and the like. However, this idea relates to the productive (industrial, material, fordist) epoch, where the availability of raw materials, energy, labor, markets and the like was addressed as one of the basic localization factors. In the pre-productive society, where rural regions were relatively self-sufficient, remoteness from the centers did not play such a significant role. On the

contrary, it could have been an advantage, as remote areas were safer in terms of various wars and armed attacks. It can be assumed that even in a post-productive society, the relationship between peripherality and marginality is changing. Remote areas tend to have a more preserved environment and tend to be more attractive to tourism, which is essential for the transition to a consumerist way of life.

Remoteness can be perceived from several different perspectives. From a European point of view, a west-east gradient applies in Czechia; i.e. the further to the east, the more remote the region is. The north-south gradient is related to urbanized north in relation to the rural south. From a national point of view, the availability of the main regional centers is essential. We can also talk about physical-geographical remoteness, which mainly concerns mountainous areas, about political-historical remoteness, which is a consequence of the post-war population exchange on the ethnic basis (expulsion of Germans), emphasized in the border areas by the consequences of the 40-year-old Iron Curtain, or also about mental remoteness, which is often associated with notions of poor and rich regions (usually based on soil fertility or mineral wealth).

According to the more detailed accessibility of regional centres, the countryside is divided into suburbanized, intermediate and peripheral (Schmitz, 2014). It is theoretically the peripheral countryside that is at risk and in need of support. However, the question is which countryside it is. It is possible to operate with the concept of remoteness which is given mainly by the distance (length, time, cost) from the regional capitals. However, we can also operate with the notion of marginality, which means relative backwardness. This is where problems such as depopulation, lack of job opportunities, lack of investment capital and social exclusion apply (Pileček and Jančák, 2016). Some approaches mix both concepts (Pezzi and Urso, 2016). This concept follows Friedman's concept of core-periphery, frequently applied in geography (Klimczuk and Klimczuk, 2019). However, the Vysočina region is characterized by the fact that it was not set aside based on this theory but was created by the peripheries of neighbouring regional centres.

Rural typology can be also focused on functions of the countryside (agricultural, recreational, residential, energetic, etc.). New trends are followed by the proposal of the typology of van Eupen et al. (2012). In Czechia, for example, Perlín et al. (2010) singled out eight types of rural areas according to different criteria. Factor analysis for the typology of the Czech countryside was used by Klufová (2016). Stonawská and Vaishar (2018) conducted a rural typology in the historical Moravian territory, who singled out

three types of rural micro-regions using the marginality concept: progressive, deficit and suburban. Hruška (2013) developed a rural typology for the Moravian-Silesian Region, Zemánková (2018) for the South Moravian Region, Schmied (2018) for Královéhradecký Region. The rural typology is included in the Regional Development Strategy of the Czech Republic 2021+, which singles out structurally disadvantaged regions and economically and socially disadvantaged areas, among others.

Rural typologies are also available in some other European countries. Examples include the works of Bański and Sztola (2002) for Poland or Prieto-Lara and Ocaña-Riola (2010) for Spain. Murdoch et al. (2003) divided the English countryside into preserved, influenced, paternalistic and cliential. Hedlund (2014) divided the Swedish countryside into five categories: two categories represent the suburbanized countryside (middle class and working class), others include rural areas outside urban areas, industrial countryside and resource countryside. Outside the European Union, Karácsonyi (2010) conducted a relatively multidisciplinary typology of rural Ukraine and Bogdanov et al. (2008) of Serbia.

It is quite clear that the different rural typologies are implemented about the differentiated approach of decision-making institutions and bodies. From this point of view, the most significant practical benefit is the allocation of peripheral rural areas (Vitale, 2022).

4. Region Vysočina and methods of study

The Vysočina (Highland) region is located on the historical border of Bohemia and Moravia. The two lands have historically been separated by a difficult-to-penetrate border forest. The region has always been peripheral from a geographical point of view, as evidenced by the fact that, except for the Carpathians on the border with Slovakia, it was settled the latest. Moreover, it is a typical internal periphery that was not influenced by external relations. The region is sparsely populated with predominantly small settlements. The regional city of Jihlava does not have enough strength to integrate the entire region. Peripheral parts of the region partly gravitate to the surrounding regional centers, namely Prague, Brno, Pardubice and České Budějovice. The settlement of the region does not belong either to the concentric settlement

system of Bohemia or to the transit settlement system of Moravia. Its main characteristic, as in the only region of the Czech Republic, is its intermediate character. The demographic analysis of the Vysočina region was prepared by Vaishar (2014).

Vysočina is an inland region, although a small part of the Třebíč district approaches the state border with Austria at several kilometres. This part of the region was affected by the expulsion of the German population and its consequences, which can manifest themselves in the social environment to this day. The southern and western part of the region belongs to the Silva Nortica Euroregion.

In 2024, the region had 518,000 inhabitants in an area of 6,796 km². In the five-year period of 2018-2022, the region recorded a natural decrease in population of 2,860 people (which has been affected by the COVID pandemic in the last two years); it was offset by a migration increase of 13,569 inhabitants (which could be related to international migration, especially from Ukraine in the last year). Overall, the population of the Vysočina region is highly stabilized. In that period, 8,158 dwellings were completed, i.e. almost 16 dwellings per thousand inhabitants.

The entire territory of the Vysočina region lies in the geomorphological unit of the Bohemian-Moravian Highlands. The main European watershed between the North and Black Seas passes through it. A large part of the area falls into the protected landscape areas Žďárské vrchy Hills and Železné hory Mts., possibly other protected areas of lower categories. However, there are also several cultural monuments, three of which are UNESCO World Heritage Sites. Arable land covers 46 %, forests 31 % and permanent grassland 12 % of the area. The most important water areas are the Velké Dářko pond and the Dalešice waterworks on the Jihlava River. The advantage is the relatively less disturbed natural environment. The population density is 75 persons per km², which is the second-lowest among Czech regions.

The primary sectors have favourable conditions for milk production, potato growing, possibly rapeseed and wood production. In the industry, there are more industries focused on the processing of local raw materials (food, glass, wood processing), or engineering, electrical engineering and textile production. A significant energy activity is the Dukovany Nuclear Power Plant (together with the pump-water plant Dalešice 2,520 MW of performance). The region contributes to the creation of the gross domestic product of the state by about 4 %. Entrepreneurial activity is below average. The Vysočina region is a transit region through which the busiest Czech D1 motorway and other important roads and railways pass.

41.7 % of the economically active population work in industry and construction (2021), 7.0 % in agriculture, forestry and fishing, and the remaining 51.3 % in services, which corresponds to the beginning of the transition to a post-productive economy. Of the services sector, trade and repair activities are the most represented (10.0 % of the total number of economically active), followed by health and social work (7.7 %), and education (6.5 %). Tourism services (accommodation and catering) employ only 2.8 % of the population. The unemployment rate in June 2023 was 2.5 %.

In 2022, there were 473 mass tourism facilities with 26,487 beds in the region. They accommodated 645 thousand guests (of which 10.9 % were foreign), who spent 1,550 thousand overnight stays here, which is 5.9 % more than in the best pre-Covid year. The focus was on lower-category hotels and guesthouses. Cottages are a large accommodation capacity in the countryside. The Vysočina region is a destination primarily for domestic tourism and its potential is still little used in comparison with other regions. The advantage is favourable conditions for the development of winter recreation, which means two seasons of tourism.

The center of the region is Jihlava (53 thousand inhabitants, 2022). The second, almost equivalent center is Třebíč (35,000 inhabitants). Other district centers are Havlíčkův Brod (23 thousand inhabitants), Žďár nad Sázavou (21 thousand inhabitants) and Pelhřimov (16 thousand inhabitants). Other cities can already be considered small towns. Velké Meziříčí, Humpolec and Nové Město na Moravě still have about ten thousand inhabitants. Most small towns in the region are also the seats of authorized municipal authorities or offices with extended powers².

In 2021, out of a total of 704 municipalities, there were 330 very small rural municipalities (up to 200 inhabitants), 207 small rural municipalities (201-500 inhabitants) and 101 medium-sized rural municipalities (501 to 1000 inhabitants) in the Vysočina Region. Many of these consist of several small settlements. Of the total number of 1,400 Czech municipalities with less than 200 inhabitants, 23.7 % are in the

2• As a result of administrative reforms after 1989, many very small municipalities (with less than 200 inhabitants) were established in the Czech Republic. After the abolition of district offices, part of their powers was transferred to regional authorities, part to municipalities. However, very small municipalities do not have the financial neither human resource to exercise these powers. Therefore, some larger municipalities (usually small towns) were commissioned to exercise these powers at a professional level for small municipalities in their hinterland. However, self-governing functions remain with small municipalities.

Vysočina region. The settlement structure of the region can therefore be very fragmented.

The settlement of the Vysočina region can be characterized as polycentric, while individual parts of the region belong to various centres of higher order. It is therefore possible to ask the question of whether the Vysočina region is a nodal region in terms of settlement structure, or whether it is more of a homogeneous region, allocated since natural and spatial characteristics of the territory. This may be essential, for example, for the solution of public transport (there is still no integrated public transport system in the region), in real inclination to centres outside the region and the like.

For the analysis, we will use the comparative method of several key indicators. We will compare the level of marginality of the Vysočina region with other regions of the Czech Republic (except Prague, which is a completely exceptional and non-comparable unit), and we will further compare individual microregions within the region to determine whether the core-periphery model applies.

The countryside of the Vysočina region was evaluated not by municipalities, which would probably bring a mosaic of individual cases, influenced by specific conditions of individual municipalities, but by micro-regions, which allow a certain generalization. The catchment areas of municipal authorities with extended powers were selected for the analysis. There is a total of 27 of these districts in the region. These units fully cover the entire territory of the region and respect regional and district borders.

The second step was to segregate towns. In this case, the population density criterion was used. This criterion, used by the European Union for rural allocation, is somewhat controversial, but it has proved its worth in the reality of the Vysočina region. Based on the knowledge of the territory, it can be stated that 15 municipalities can be considered towns.

Several criteria come into play for the analysis. In our work, we used the migration balance of the rural municipalities of the micro-regions for the five-year period 2018 – 2022 (five years because with a relatively small population in some micro-regions, the data for one year would be too affected by random fluctuations). The aging index, expressed as the proportion of seniors (aged 65 and over) and children (0-14 years), is linked to it. We also used the criterion of education, which partially replaces the social status of the population. The transition to a post-

productive society could be partly characterized by the proportion of those employed in services (which was calculated as economically active people total minus those working in agriculture, forestry, fishery and industry). The fifth criterion was the housing construction index, which characterizes a certain attractiveness of micro-regions for living. In the case of inter-regional comparison, the criterion of gross disposable household income per capita was also used. This data is not available for lower territorial units.

In the next step, the individual territorial units were compared based on the values of individual indicators, as well as on the basis of logical considerations arising from the knowledge of the territory (considering also territorial concentrations of micro-regions with similar characteristics).

5. The position of the Vysočina region in the Czech Republic

The first task of the contribution was to find out how marginal the Vysočina region really is. For this purpose, its indicators were compared with the values of other regions (except for Prague, which far exceeds other regions of the Czech Republic and is above average even from the point of view of the European Union) (Table 1).

Table 1.

Comparison of administrative regions of the Czech Republic. Selected indicators

Region	Population in municipalities under 2,000 inhabitants [%]	Migration balance 2022 [‰]	Age index(65 + / 0–14)	At least a high school diploma [%]	The proportion of employees in services [%]	Completed dwellings per thousand inhabitants 2017–2021	Unemployment rate (November 2025) [%]2021	Net disposable household income per capita 2023 (thousand CZK)
Středočeský	40.1	+37.4	1.05	51.3	63.8	23.6	3.8	406
Jihočeský	35.0	+25.5	1.33	47.7	55.2	13.3	4.0	358
Plzeňský	33.1	+46.6	1.33	47.0	53.4	19.8	3.7	360
Karlovarský	21.3	+39.6	1.39	39.2	59.9	9.2	5.6	333
Ústecký	21.0	+19.8	1.28	40.2	56.7	7.2	6.9	334
Liberecký	24.8	+28.4	1.28	44.5	49.3	9.5	5.3	340
Královéhradecký	33.9	+25.0	1.42	47.2	57.1	13.8	4.0	366
Pardubický	38.5	+29.2	1.30	46.7	51.4	14.8	3.7	356
Vysočina	44.3	+22.7	1.34	46.2	50.9	14.5	3.7	374
Jihomoravský	30.1	+28.0	1.24	52.6	62.1	18.9	5.1	372
Olomoucký	36.3	+16.1	1.35	47.8	57.2	14.6	4.8	344
Zlínský	30.5	+16.3	1.41	47.4	51.6	11.7	3.8	357
Moravskoslezský	15.3	+13.3	1.35	46.0	56.8	10.6	6.3	341
Czech Republic	27.0	+30.6	1.27	50.0	60.6	15.7	4.6	

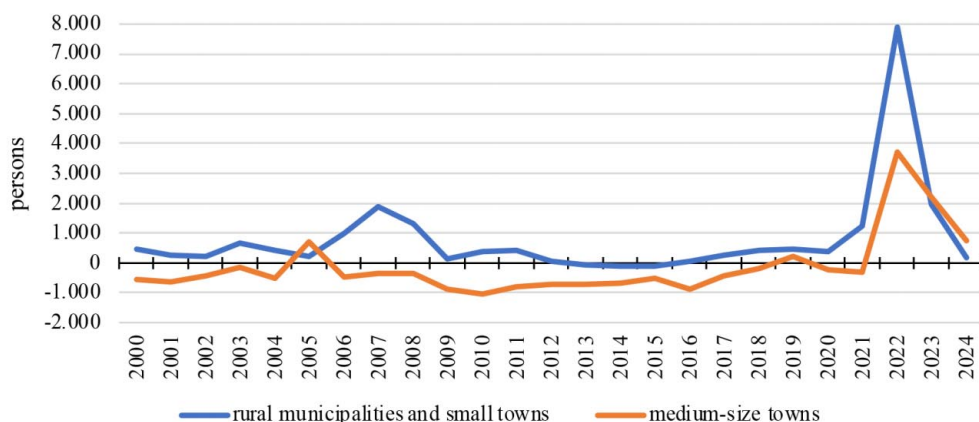
Source: Public database. Czech Statistical Office Praha; Labor market statistics. Labor Office of the Czech Republic Praha.

The Vysočina region is the most rural of all regions in terms of the share of inhabitants living in municipalities with up to 2,000 inhabitants (Table 2). But is it also marginal? From the point of view of the west-east gradient, the region lies in the middle of the Czech Republic. Geomorphologically, it is a highland, i.e. again in the middle between lowlands and mountains. Political-historical marginality mostly does not concern it. It has always been considered a poor region. A fundamental discussion should be about the accessibility of regional centers.

In 2022, the population of the Czech Republic increased by more than 3 % thanks to immigration. All regions also had an increase in migration balance. The increase in migration in the Vysočina region was slightly below average among other regions. The development since 2000 (when new administrative regions were created) is shown in the Figure 2, which divides the migration balance for medium-sized cities on the one hand and villages and small towns on the other. The sharp development of the migration balance in 2022 and 2023 was caused by the influx of immigrants from Ukraine because of Russian aggression. However, the rural part of the Vysočina region shows a positive migration balance throughout the monitored period.

Figure 2.

Migration balance in the Vysočina region 2000-2024



Source: Public database. Praha: Czech Statistical Office.

The population of the Vysočina region is slightly older than the Czech average, but the situation is not extreme. Vysočina is in a similar situation in terms of education and the completed dwellings per thousand people. It significantly lags in the proportion of workers in services, which is ten percentage points lower than the average of the Czech Republic. High employment in industry is a result of Czechia being by far the most industrialised country in Europe. According to EUROSTAT, the share of people employed in industry across the EU out of all residents in the last censuses (usually 2021) was 7.3 %. Industrial employment in Czechia is almost double (13.7 %).

High shares of people employed in industry are also found in rural areas including the Vysočina region, which is due to the dense network of small towns in which industrial capacities are concentrated and good commuting conditions. Many smaller industrial enterprises are also located in villages and small towns. In the significantly rural NUTS 3 regions, industrial employment in the EU is 19.6 % of all employed. In the Czech Republic, it is 34.6 %. Czechia is followed by Slovenia (28.2 %), Hungary (27 %), Croatia (25.2 %), Slovakia (24.4 %) and Germany (24 %).

The employment structure is available from the results of the 2011 and 2021 censuses (Table 2). According to these data, the development is slightly against the transition to a postmodern society, as the shares of workers in manufacturing sectors increased slightly in the past. One reason may be the development of the EU supported organic livestock farming, which is more labor-demanding. Data by size groups of municipalities are available from the 2011 census. This confirmed that the share of people employed in manufacturing sectors is slightly higher in rural areas.

Table 2.

Vysočina Region: shares of employed people in individual economic sectors [%]

	Census 2011	Rural areas 2011	Census 2021
Agriculture, forestry, fishery	6.3	10.1	7.0
Industry	32.9	33.9	34.2
Construction, transport, storage	12.2	13.3	12.7
Others (services)	48.6	42.7	46.1

Source: Public database. Praha: Czech Statistical Office.

The level of unemployment, on the other hand, is the lowest. The net disposable household income per capita is among the highest, although the differences compared to other regions are not large. The indicated indicators show that the Vysočina region is not one of the most progressive regions of the Czech Republic, but it cannot be characterized as significantly peripheral either. It is rather a stabilized region with a relatively high quality of life.

The Vysočina region is located on the border of the influences of the two most important centers of Czechia - Prague and Brno, and at the same time on the border

of two settlement systems - Bohemian and Moravian. The peripheral parts of the region partly belong to other centers, especially Pardubice or České Budějovice. Together with Karlovy Vary, Jihlava is the weakest regional town with a declining population. Its integration force covers the Jihlava district, possibly peripheral parts of neighboring districts, but not the entire administrative region. The public transport system of the region was not created, of which Jihlava would be the central point. Due to its position on the D1 highway, Jihlava has an excellent connection with the two largest cities of Czechia, but the connection with its own hinterland is weaker - also due to the more difficult terrain conditions of the Bohemian-Moravian Highlands (Černý et al., 2018). It is therefore questionable whether Jihlava can be considered a full-fledged regional center and therefore the surrounding larger cities should be considered regional centers. From this point of view, Vysočina seems to be peripheral.

The fastest connection to Jihlava by car is indeed faster from all the centers of the rural microregions of the Vysočina region than from the surrounding regional centers. Only in three cases is there a faster connection to Brno. However, from several peripheral micro-regions, the connection to the surrounding regional centers is only a few minutes longer. Because the neighboring regional centers are generally stronger, these marginal microregions fall more towards the centers of the surrounding regions according to Newton's law of gravity or Reilly's model (Kraft and Blažek, 2012).

6. Ananalysis of the countryside in the Vysočina region

An overview of the values of indicators for individual micro-regions, which were used for the typology, is in Table 3.

Table 3.

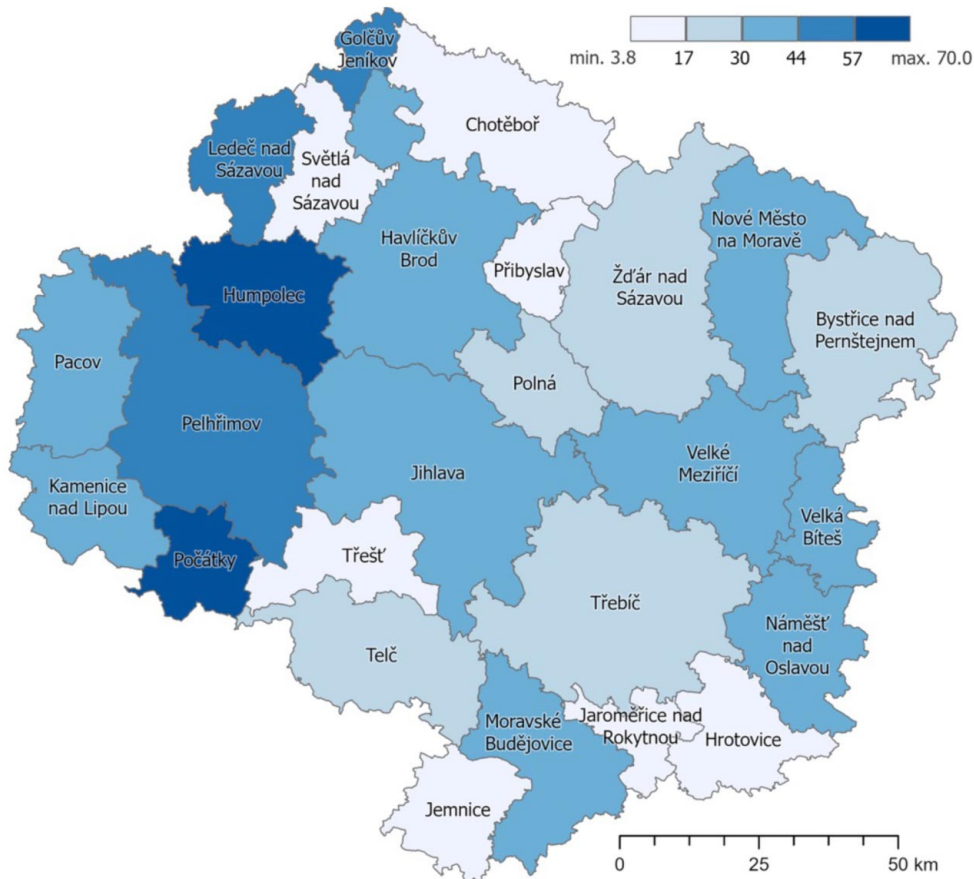
Rural micro-regions in the Vysočina region: selected indicators

Area	Population at 31.12.2022	Migration balance 2018–2022 [‰]	Age Index(65 + / 0–14)	At least a high school diploma [%]	The proportion of employees in services [%]	Completed dwellings per thousand inhabitants 2018–2022	Unemployment rate (July 2023) [%]
Havlíčkův Brod	20,197	+34.6	1.15	46.0	51.8	17.8	2.5
Golčův Jeníkov	3,302	+51.8	1.44	43.0	55.5	14.0	3.6
Chotěboř	12,636	+14.3	1.51	43.6	47.9	11.8	2.4
Ledeč n. Sázavou	4,354	+52.3	1.20	43.9	55.7	20.6	3.5
Přibyslav	6,437	+5.9	1.13	43.8	46.2	11.2	2.4
Světlá n. Sázavou	3,562	+7.9	1.23	41.7	53.1	14.1	3.2
Jihlava	28,337	+35.9	1.10	42.7	58.4	15.9	2.8
Polná	10,859	+23.0	1.05	40.4	54.2	27.1	2.0
Telč	7,806	+26.0	1.28	38.7	50.8	13.3	3.3
Třešť	11,252	+9.8	1.32	40.7	52.5	10.1	2.6
Pelhřimov	15,310	+52.9	1.32	43.6	53.3	15.3	1.4
Humpolec	7,159	+70.0	1.18	43.7	58.2	25.6	2.6
Kamenice nad Lipou	7,749	+42.8	1.71	40.6	53.2	12.6	1.1
Pacov	9,478	+39.2	1.85	42.1	49.2	13.0	1.2
Počátky	6,328	+66.1	1.77	38.1	48.3	9.5	1.3
Třebíč	25,294	+29.4	1.34	42.0	54.3	16.0	3.4
Hrotovice	7,607	+10.4	1.29	41.4	35.5	14.6	2.3
Jaroměřice/R.	5,618	+6.8	1.43	37.9	59.5	9.6	3.8
Jemnice	7,334	+3.8	1.36	37.8	49.3	10.4	2.2
Mor. Budějovice	8,426	+30.1	1.45	35.4	51.9	16.6	2.9
Náměšť nad Oslavou	8,398	+36.6	1.44	40.0	59.9	16.2	2.1
Žďár nad Sázavou	20,763	+24.2	1.10	45.5	53.5	17.0	2.7
Bystřice n. P.	11,540	+22.2	1.47	39.8	50.0	11.2	3.0
Nové Město na Mor.	9,340	+37.5	1.21	45.1	62.3	17.4	3.2
Velká Bíteš	9,126	+41.5	1.02	49.0	54.3	22.8	2.9
Velké Meziříčí	16,152	+36.7	0.99	42.8	48.2	25.2	2.8
average		+31.2	1.32	41.9	52.6	15.7	2.6
standard deviation		18.0	0.22	2.9	5.2	4.9	0.7

Source: Public database. Czech Statistical Office Praha; Labor market statistics. Labor Office of the Czech Republic Praha.

In terms of migration, all micro-regions have been positive over the past five years (Table 3, Figure 3). Interestingly, the micro-regions of the district centers did not record the greatest mechanical population increase, but the micro-regions of some smaller towns did. However, migration is growing around the district centers. This may mean that suburbanization tendencies are in the nearest rural settlements around the district towns, but do not cover the entire catchment areas.

Figure 3.
Migration balance 2018 - 2022

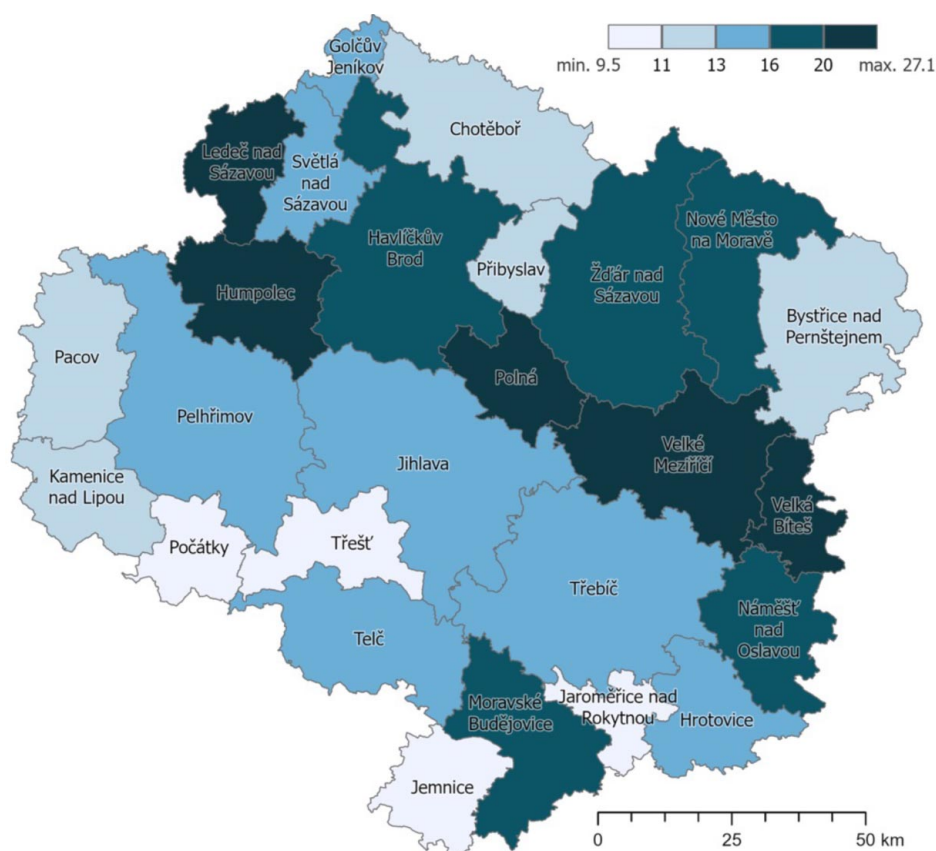


Source: Public database. Czech Statistical Office Prague. Own elaboration.

The largest variance is shown by the values of the migration increase and completed apartments (Figure 4), which are related to each other. The values of the unemployment rate also have a higher dispersion, but at such a low level that it is not clear whether lower or rather higher unemployment can be considered positive. On the contrary, the variables age structure and education are less different. However, the Vysočina region, as a classic inner periphery of the Czech Republic without a significant urban center, cannot in any case be referred to as a depopulating area.

Figure 4.

Completed dwelling per thousand inhabitants 2018-2022



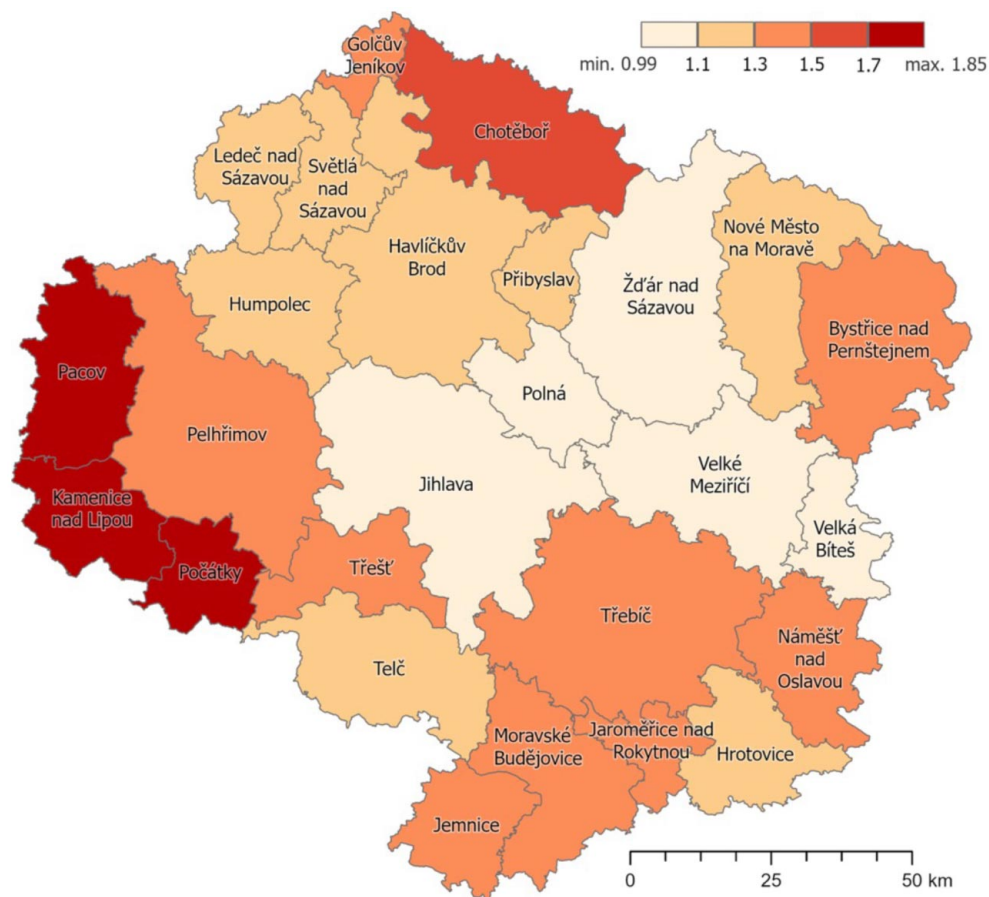
Source: Public database. Czech Statistical Office Prague. Own elaboration.

However, it is known from the theory that migration movements are conditioned not only by push-up (attracting) factors but also by pull-out (repelling) factors. It can be, for example, displacement from cities because of expensive housing, annoying urban traffic or freeing up apartments for descendants. That is why we also introduced an indicator of the number of newly built apartments. We assume that if someone invests in a new apartment, the place is attractive for them. Only five microregions recorded a higher number of newly built apartments per thousand inhabitants than the Czech average (Figure 4). Therefore, it seems that immigrants in the Vysočina region tend to move into existing apartments, where they can change owners or tenants who have moved elsewhere. It seems that we can talk about returning migration (Farrell et al., 2012). The set of micro-regions with the largest housing construction only partially overlaps with the list of micro-regions with the highest positive migration balance. Moreover, there is no micro-region of the district town among microregions with higher residential construction. While in the south-west part of the region, we recorded high migration increases, but minimal flat construction, in the south-east, the situation is the opposite.

Aging is cited as one of the signs of marginality. This assessment is ambiguous, because in Czechia, statistically, the smallest villages are shrinking the most, but they are immediately followed by the largest cities - while medium-sized and large villages represent the youngest part of the Czech settlement structure. Aging is not a negative thing, although it is tacitly assumed that seniors no longer bring innovation to the territory. But this may also not be true given greater experience and social capital among seniors.

However, in the case of this indicator, the lack of a clear assessment is also accompanied by a lack of logical connections. Perhaps it is significant that the youngest population has a part of the region that tends to fall more towards Brno as a regional center. But even the surroundings of Jihlava have a relatively younger population (Figure 5).

Figure 5.
Age index (65-/0-14)

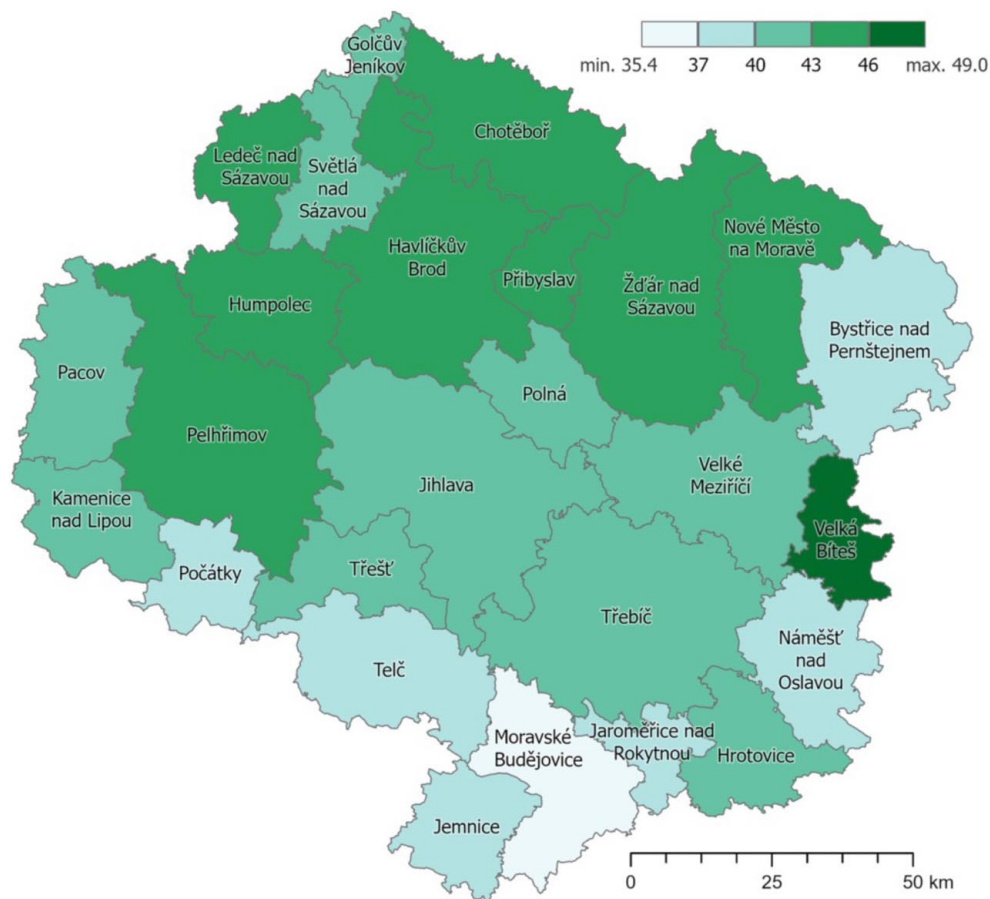


Source: Population census 2021. Czech Statistical Office Prague. Own elaboration.

The education indicator of the population is disproportionately more important. Lower education is one of the biggest shortcomings of the Czech countryside. It is mainly caused by the absence of career opportunities in rural areas, which leads to the emigration of more educated people to the cities. Additionally, the (lower) educational structure tends to reproduce itself. Moreover, the relationship between education and regional development is obvious.

Figure 6.

Share of the population aged 15 and more with at least a high school diploma



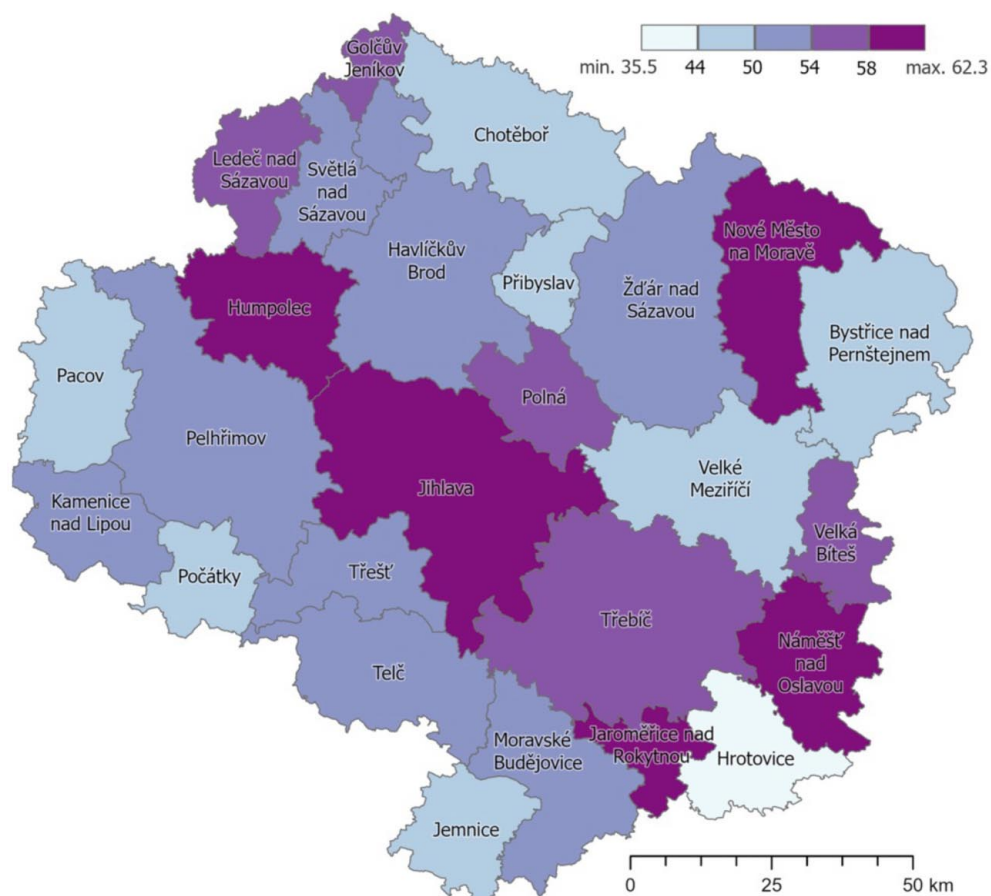
Source: Population census 2021. Czech Statistical Office Prague. Own elaboration.

As could be expected, all micro-regions of the Vysočina region are below the national average in terms of the proportion of people over 15 years of age who have at least a high school diploma (Figure 6). In this indicator, the presupposed marginality and rurality of the region manifest itself most clearly. The only institution of higher education, Jihlava Polytechnic focused on tourism, health and social care, administration and technology cannot substantially improve the situation.

The transition to a post-productive economy is probably best characterized by the share of people employed in services. Seven rural micro-regions still recorded service employment below 50 % (Figure 7).

Figure 7.

Share of economically-active people employed in services

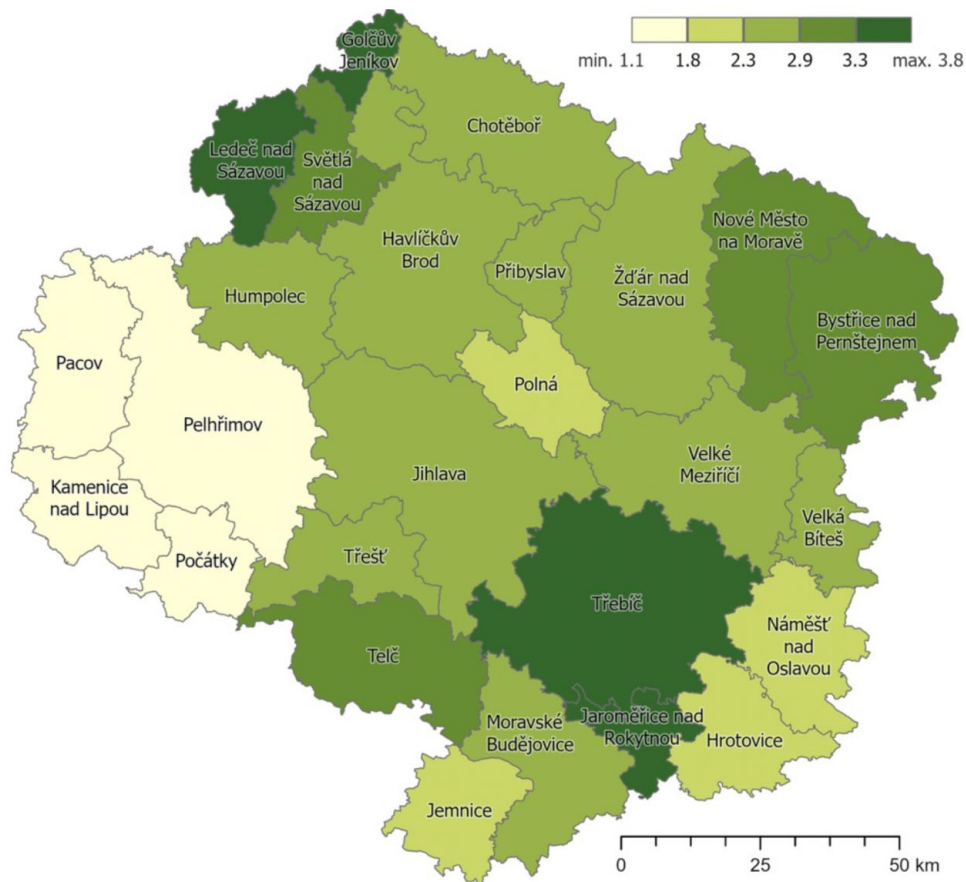


Source: Population census 2021. Czech Statistical Office Prague. Own elaboration.

The unemployment rate is usually also included among the indicators of marginal areas (Figure 8). However, the question is how to evaluate this indicator in

our case. Low unemployment means fewer people are dependent on social assistance. However, unemployment that is too low may indicate that there is no free workforce in the labor market. This results in the congestion of the labor market and the inability of companies to expand production if, of course, it is not an impulse for automation, digitization and other innovations in the long term. Unemployment below 2 % is usually considered inflationary (which of course is valid on the national scale).

Figure 8.
Unemployment rate in July 2023



Source: Ministry of Labour and Social Affairs of the Czech Republic Prague. Own elaboration.

If we proceed from the mentioned indicators and their distribution within the region, we conclude that practically the only indicator for which it is possible to determine whether its growth is positive is the education indicator. That is why we use this indicator for the typology, and the others will serve for detailed elaboration.

The most developed part of the Vysočina region can be considered a strip of microregions on the northern edge, which benefits from the proximity of Brno, can join them. In addition to a more educated population, these micro-regions also have a significantly younger population, above-average employment in services, lower unemployment of up to 2.5 % and, above-average housing construction as a rule.

The second most developed part of the Vysočina region consists of microregions in the northwest of the region, which gravitate to Prague: These micro-regions have a relatively high migration rate, mostly an older population. Rural microregions on the Jihlava – Třebíč axis reach average values. It is the central part of the Vysočina region in the northwest-southeast direction, including the micro-regions of the two most important centers of the region. The values of individual indicators are mostly average or fluctuating.

Less developed micro-regions include the perimeters of some small centers. They are joined by the district of Bystřice nad Pernštejnem, which is affected by structural problems after the end of uranium mining. The least favorable development characteristics were recorded by the micro-regions of southwestern Moravia, which are among the most problematic in the whole of Moravia. For possible targeted support, concentration on the last two groups of microregions can be recommended. This also corresponds to the definition of economically and socially problematic micro-regions according to the Regional Development Strategy of the Czech Republic 2021+.

In general, it can be said that the typology of microregions of the Vysočina region led to its regionalization at the same time. It turned out that the most developed micro-regions are those that partially fall within the two largest Czech cities of Prague and Brno, while the least developed is the south, which partially falls within České Budějovice. The center of the region (Jihlava and surrounding microregions) achieves average characteristics. Except the last group, whose centers are 40 minutes or more from Jihlava, no relationship between the level of micro-regional development and the distance from the regional center of Jihlava was demonstrated. This confirms the assumption that Vysočina is not a standard region that is made up of the regional metropolis and its rural hinterland, but rather a set of micro-regions connected by their remoteness.

7. Discussion

The Vysočina region is peripheral according to the usual geographical criteria. It was settled as one of the last territories, it has a mountainous relief with conditions not suitable for intensive agriculture, its capital is the weakest of all Czech regional centers. Vysočina has the highest number of very small settlements under 200 inhabitants, it lies on the border between the gravitational influences of stronger regional centers. According to current knowledge, known from the literature, its economic and social characteristics should correspond to this characteristic.

Theoretically, it should be an emigration region, with an aging and less educated population, with higher unemployment and lower incomes of the population. However, the facts found do not indicate this. The Vysočina region, especially its rural municipalities, is profitable in terms of migration. Net household incomes are above average, unemployment is among the lowest. The indicator of the share of the population in services, which is the second lowest, corresponds most to marginality. The population of the region shows above-average levels of religiosity (30.7 % in 2021), which, in Czech conditions, is more an indicator of stability than faith.

This statement opens several questions. Post-industrial development in the sense of changing values provides a framework. However, it is essential to find out which aspects and mechanisms caused the positive development of the Vysočina region. Perhaps we also need to ask what we mean by regional development and what criteria and indicators would be suitable for measuring it. It is certain that we cannot rely solely on economic indicators.

Another question is to what extent the findings of the Vysočina region are generalizable to other peripheries. The specificity of the Vysočina region is that, apart from its obvious peripherality, its situation is not complicated by any other significant problem, such as structural or cultural changes. The Bohemian-Moravian Highlands has always been a periphery. Its social system has adapted to this fact over a long period of time and can take advantage of the transition to a consumer society. Peripheral regions that previously benefited from heavy industry do not have this advantage.

The Vysočina region does not have the conditions for intensive agriculture. It does not have heavy industry (except for the energy system of the Dukovany nuclear power

plant and the Dalešice pumped-storage hydroelectric power plant with an installed capacity of 2,500 MW). Highly innovative companies are rare. Let us mention První brněnská strojirna Velká Bíteš (with its branch in Bengaluru, Karnataka) which is a leading European innovator in the production of engines for light aircrafts and drones. So, what could be the reason for the region's stable to progressive development?

Without sociological research, we can only offer more or less probable possibilities. The Vysočina region has a relatively little disturbed environment. Its landscape with a mosaic of fields, forests, meadows, ponds and villages is considered attractive. The social environment of villages and small towns still has a partly rural character, free from city hustle and stress. The ethnographic characteristics of the typical inhabitants, who are known for their thriftiness, may also play a role. Among economic factors, a better opportunity to obtain cheaper housing than in large and medium-sized cities may play a role.

Another issue is the sustainability of regional development in the Vysočina region. Prudký and Šmídová (2019) characterize the Vysočina region as an area with a strong social and environmental pillar but a weak economic pillar. However, current statistics (except Prague) show that its GDP per capita is the fourth in Czechia (2023). Within the NUTS 2 region Jihovýchod (Vysočina together with the Jihomoravský region, which includes the second most important city of Czechia, Brno) its GDP is highest at all both quantitatively and per capita. The rural periphery can hardly compete with urban regions in quantitative economic indicators. The countryside without universities and research centres cannot be any innovative hub. It should focus on quality of life, which can mean, for example, enough job opportunities capable of satisfying the self-realization ambitions of the population, the production of unique products and services.

The fundamental problem of regional sustainability is the balance between the three pillars. Central regions tend to be economically sustainable, perhaps also socially, but they are usually not very sustainable from an environmental point of view, while peripheral regions tend to be the opposite. However, the Vysočina region shows a rare balance of all three pillars. The question is whether peripheral regions do not have an aspect of overall sustainability incorporated into them. If this is the case, then it is not surprising that Vysočina has a positive migration balance. In an industrial economy, workers usually move for work. However, it is possible that in a post-productive economy, job opportunities will, at least partially, move for workers. The structure of small and medium-sized enterprises in the Vysočina region is flexible and less dependent

on the possible bankruptcy of large enterprises or individual sectors. Agriculture will be oriented towards extensive livestock production supported by subsidies.

The localization factors of the production period are giving way to the localization factors of the consumption period. Vidickiene and Gedminaitė-Raudonė (2019) describe this process as servitization. In the case of the countryside, it is important to capture this process to prevent it from falling behind the cities again. Bednaříková (2015) claims that the economic performance of the Vysočina region could be boosted by investments in tourism. Kuncová et al. (2018) identify the highest efficiency in tourism development in the regional capital of Jihlava, in microregions with UNESCO World Heritage sites (Třebíč, Telč, Žďár nad Sázavou), and in microregions with natural attractions like Nové Město na Moravě, the centre of outdoor sports. However, the regional development of the Vysočina region cannot depend solely on tourism. Possibly, the over-average share of employment in production could be another advantage in the future in relation to the de-globalization. The development may be also affected by problems of global, international and national development, questions about the future of subsidy titles, and the like.

Contrary to assumptions, the Vysočina countryside is not differentiated in the typical core-hinterland manner. The most developed microregions are not clustered around the regional capital. Instead, the arrangement of microregions with similar characteristics is belt-like, with development decreasing from north to south.

8. Conclusions

Regarding the first hypothesis, we found that the Vysočina region is not among the most marginalized regions. These are rather urbanized regions with restructuring after the decline of heavy industry. These regions were previously strongly supported from the center, so that economic decline is followed by social decline, while the environment was disturbed precisely by heavy industry. In this case, peripheral does not equal marginal.

In terms of the second hypothesis, we found that, except for the immediate hinterland of the regional metropolis, the values of the indicators are not

differentiated by distance from the center. The question is what the situation would look like if the Vysočina region had not been created, but parts of it had been assigned to the regions of neighboring more significant centers. However, the core-periphery model does not work in the case of the Vysočina region.

This work demonstrated one approach to evaluating the countryside, which can be applied also to other regions not only in Czechia. Of course, different territorial units and indicators could have been chosen. However, the crucial point is not the selection of indicators but the mindset, which acknowledges the countryside's heterogeneity and significant differentiation. The peripheral countryside cannot be viewed as an automatically backward, unpromising territory that remains in the shadow of urbanized regions. It is increasingly necessary to consider non-economic indicators focused on the quality of life.

Effective rural development measures cannot be implemented uniformly from the central level but should be tailored at the regional and micro-regional levels. Intensive support should be directed to the most problematic micro-regions, but the form of this support is critical. Simply injecting financial and other resources into marginal areas is ineffective and demotivating. This highlights the practical application of our findings.

Our analysis identifies roughly two-fifths of the Vysočina region's micro-regions as needing development attention, primarily from the regional government. The challenge is that the southern part of Vysočina lacks significant urban centers, is far from regional hubs, and borders Austria, which was part of the Iron Curtain for a long time. The neighboring Austrian micro-regions of the Waldviertel region also exhibit unfavorable development characteristics (Sedlacek et al., 2009).

Given that changes in the European countryside are ongoing, it is essential to monitor and analyze this process further. Comparing Vysočina with other peripheral regions in Czechia and Europe can provide valuable insights. Specifically, comparing it with the border periphery within Czechia and using similar criteria for other European countries could be beneficial. According to EUROSTAT, there were more depopulating rural regions in EU on the NUTS 3 level in 2024 mostly due to the emigration and consequently also due to the natural decrease: most of Portugal, a part of inland Spain and France, southern part of Italy, most of Greece, Bulgaria, Romania and Poland, parts of Croatia and Hungary, some regions in Baltic states and Finland. No such

region was situated in Czechia. This does not mean, of course, that depopulation regions cannot occur on a micro-regional scale there.

The main challenge is adopting a new perspective on rural issues. As European regions gradually transition to a post-productive model, the countryside is evolving from an agricultural production area to a multifunctional consumer sphere. Institutional support should be oriented towards this differentiation. Only parts of the countryside can be characterized as poor, marginal, and depopulating, with a lack of jobs and investment opportunities. We must also move away from the outdated notion that every village needs job opportunities. Instead, the focus should be on the accessibility of service centers and employment opportunities via private and public transport (Vaishar and Št'astná, 2021). De Toni et al. (2020) point out, the Inner Peripheries concept needs to be further explored, especially concerning the environmental aspects.

Considering the post-productive transition, the priorities of European, national, and regional rural support should also change. The current focus on supporting competitiveness and creating job opportunities is outdated and perpetuates rural underdevelopment. Supporting the primary sector in peripheral areas makes sense mainly for landscape maintenance, which is vital for developing tertiary functions such as tourism and housing. Additionally, the development of the tertiary sector, which supports job creation, education, and cultural enhancement in the countryside, should be much more emphasized. Creating low-paid, non-prestigious jobs in agriculture, especially when existing positions are vacant, is not practical.

9. Acknowledgment

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Authors' contribution

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Conceptualization	100 %	0 %
Data curation	100 %	0 %
Formal analysis	100 %	0 %
Funding acquisition	0 %	100 %
Investigation	50 %	50 %
Methodology	100 %	50 %
Project administration	0 %	100 %
Resources	100 %	0 %
Software	0 %	0 %
Supervision	0 %	100 %
Validation	40 %	60 %
Visualization	100 %	0 %
Writing – original draft	100 %	25 %
Writing – review & editing	20 %	80 %

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