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***Agglomeration challenges among the municipalities of Győr***<sup>8</sup>

*This paper presents the results of my research in the urban area of Győr. My research is based on semi-structured interviews with decision-makers (mayors, deputy mayors) and professional leaders (e.g. chief architects, notaries) of more than 10 municipalities.*

*The aim of the research was to typify, collect and analyse the challenges that municipalities face due to suburbanisation in a comparative analysis. Another important objective was to identify good practices, in particular to capture the specific challenges of different agglomeration municipalities.*

*In most cases, health, education and transport services are the most affected by growing population demand, while more affluent neighbourhoods are looking for better leisure, cultural and sports facilities. The integrated, vision-driven development of these emerging agglomeration areas is hampered by the funding structures and 'project mentality' of the municipalities studied. The main finding of my research is that medium-sized agglomeration municipalities face the main challenges in the study area, where everyday municipal management also poses significant challenges in everyday life.*

*Keywords: agglomeration, suburbanisation, Győr, local governments, cross-border residential mobility,*

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## **Introduction**

The research focuses on the settlements of the Győr functional urban area, one of the most dynamically changing urban areas in Hungary. My research examines the socio-economic processes taking place in the metropolitan area and the agglomeration challenges of the municipalities in the agglomeration through the lens of local government functions. An important aim of my research is also to shed light on what other aspects determine municipal success.

The study of agglomeration areas is particularly acute nowadays, since the data of the 2022 census clearly show that while the population of the core cities is decreasing everywhere except Kecskemét and Sopron, the population of agglomeration areas is growing dynamically, especially in Győr, the second largest agglomeration area after Budapest.

The population of the agglomeration's municipalities (with the exception of 12 municipalities) could increase by 2022 compared to 2011. The most dynamically growing municipalities in the agglomeration are the inter-island municipalities, where the population of Vámoszabadi increased by more than 80%, while the population of Győrzámoly and Győrújfalú increased by 60% and 70% respectively. Overall, it can therefore be said that the inter-island region is one of the most dynamically developing "hotspot" areas in the agglomeration today. This is also confirmed by the fact that, with the exception of Győr, the housing stock in Győrújfalú has grown most dynamically, with an increase of more than 50%. It is also important to note that the housing stock increased everywhere except in Mérges, Vének, Rábaszentmiklós, Kisbabót, Árpád and Bakonytérd.

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The agglomeration of Győr, although not one of the regions with particularly favourable indicators in Central Europe, is from a Hungarian perspective the most developed region of the country outside the capital, and is considered by a significant part of Hungarian society and politics as a model area where the economic restructuring caused by the regime change in Hungary has been very successful, thanks to internationally significant multinational companies such as Audi Motor Hungária. The region is also a very interesting and valuable location from a geographical and geopolitical point of view. The functional urban area of Győr is located in the middle of the Vienna-Pozsony-Budapest metropolitan area, which has a significant impact on social and economic developments due to its proximity to Slovakia and Austria (the latter being undoubtedly more important) and its excellent transport infrastructure, and thus also gravitates somewhat towards the Hungarian capital, although it is considerably further away than, for example, Bratislava or Vienna.

The proximity of the Austrian and Slovakian capitals also determines the life of local governments, as my research confirmed my preliminary hypothesis that the municipalities of the functional urban area have recently become less attractive because of their proximity to Győr or the prosperous Mosonmagyaróvár and Sopron, but mainly because of their proximity to Austria, while some municipalities are attractive because of their proximity to Slovakia and Bratislava.

On the basis of my research, I want to answer the following main research question: what are the main challenges for local governments in providing and financing services in the growing population and its changing composition in the polycentric urban area of Győr?

My research was based on a total of 15 expert interviews with municipalities belonging to the Győr functional urban area and - for comparison - with two significant municipalities outside the official FUA delimitation, recorded online and in person using a semi-structured methodology between September 2023 and spring 2024. My interviewees were either municipal decision-makers or professional managers of municipalities. The municipalities included in the interview research are: Vámoszabadi, Győr, Gönyű, Győrzámoly, Bezi, Lébény, Öttevény, Koroncó, Mecsér, Mórchida, Gyarmat, as well as Rajka and Fertőszentmiklós, which were included as a conjoint sample. In the present study, I aim to synthesise information from the UNKP survey and the expert interviews conducted during my doctoral research, while also drawing on the KSH settlement statistics data as a secondary source.



Figure 1: Population of the settlements in the agglomeration of Győr, based on the data of the HCSO for 2021. Edited by Teveli-Horváth D.- Szöllőssy A. - Kiss B.-Porhajás G. (2022)

## Materials and methods

Many national and international authors have written on agglomeration processes. Among the studies on European agglomeration processes by foreign authors, one should highlight (Ciconne 2002, Gardiner et al. 2011, Burger-Meijers 2017, Foster-Stehrer 2009, Majewska-Truskolaski 2017, Vogel 2012, Szmytkie 2021), while among the works of Hungarian authors ( Tímár 1999, Kocsis J. B. 2000, Czaller 2016, Vasárus 2022, Bajmóczy-Jakus 2023, Kiss-Porhajas 2024)

The development of agglomerations has been studied in detail by representatives of many disciplines, such as sociology, social geography, economics, etc. In the present research, we do not aim to explore the reasons for the emergence of agglomeration as a phenomenon in its entirety, but it is important to place our research in a theoretical context. Generally speaking, agglomeration is "a group of settlements resulting from the concentration and centralisation of productive forces, in which the highly developed city and the surrounding settlements are intensively interconnected in the field of economic and social life, and a concentration of population develops around the central city" (Nemes Nagy 2005). According to another approach, 'an agglomeration is defined as a group of settlements surrounding a metropolitan area and a metropolitan area whose population and businesses are in close, everyday contact with each other' (Kőszegfalvi 1995). The UN defines agglomeration as "the close interaction between cities and their surrounding areas as a result of urbanization processes, whereby the economic, social and infrastructural impacts of cities spread to areas outside cities" (UN 2018). This definition emphasizes the interconnectedness between cities and the fact that the economic and social impacts of cities often spread to surrounding rural areas.

Moving closer to the research area; urban sprawl is a typical urban development process in the Central European region, characterised by the transformation of the relationship between the city and its surroundings, the expansion of the urban area and the emergence of urban characteristics in previously rural areas (Kocsis 2023). By the end of the 20th century, this agglomeration process had significantly transformed the face and interrelationship of the city and its surroundings, but Kocsis (2023) points out that the process is characterised by different features and emphases from country to country and region to region, with general and local factors - economic, cultural, social and historical - shaping different local patterns in this matrix of interdependence. Under the concept of suburbanisation creating agglomerations, we use the approach widely accepted among Hungarian geographers, according to which suburbanisation can be a process of suburbanisation creation on the one hand, and on the other hand, suburbanisation is a process of decentralisation and centralisation (Tímár 1999, Bajmóczy 2003). Within the first approach, there are five different approaches (place-based, statistical-based, technical-based, social-psychological-based and human-ecological-based (Tímár 1999, Bajmóczy 2003). The location-based approach is based on the idea that agglomerations are settlements that are located outside the administrative area of the core city, but still within commuting distance (Hall 2018). However, it is important to note that in countries with a socialist past, such as Hungary, this approach is only partially valid, as, for example, suburbs can be identified within the administrative boundaries of the city in many Hungarian cities (Hardi 2002, Vasárus-Makra 2015). Sociological approaches in particular start from the social composition of agglomeration settlements. On this basis, agglomeration settlements are described as communities with specific values and ideals, where young middle-class families, good neighbourhoods or even active community life play an important role. In terms of their political affiliation, they are typically understood as a more conservative and religious community than those living in the core city (Fishman 1987, Bajmóczy 2003, Szabó 2017). Approaches that interpret suburbanisation as a process of decentralisation and centralisation do not start from the outcome of the process (agglomeration settlement) but focus on the process itself. Some approaches are based on a model of stages of urban development, where agglomeration occurs in the second stage of the urbanisation cycle, the stage of relative deconcentration (Enyedi 1988, Van den Berg 1982). Other approaches consider suburbanisation

as a decentralisation of urban population and activities and thus as a comprehensive part of the urbanisation process (Tímár 1999).

Although I do not intend to explore this in detail in this paper, I think it is important to address the possible causes of suburbanisation, which has been examined from a wide range of approaches from a variety of social sciences. A simpler approach is to divide the causes into two broad (impact) groups. According to this approach, the so-called pull factors (the emerging agglomeration attracts population) and the push factors (the desire to leave existing inner-city residential areas) together shape suburbanisation. The pull factors include the family house lifestyle, quieter living environment, better air quality and a cleaner environment, while the push factors include factors such as dirty, noisy, crowded, slum-like and socially deprived city centres (Csanády et al. 2009, Kocsis 2000). Other approaches distinguish three approaches to suburbanisation: 1. consumer approach; 2. economic approach; 3. socio-psychological approach (Csurgó 2013).

The main feature of the research area under study is that Győr is located in a much wider Vienna-Bratislava-Győr-(Budapest) polycentric urban area. The essence of polycentricity is the principle of decentralised concentration, where the interdependence and interdependence of the city and its catchment area, as well as the interdependence and interdependence of the city and the countryside, are of paramount importance (Somlyódiné 2023, Faragó 2006, Faragó 2008). The essence of polycentric areas is that, when they are created, they create a much more balanced spatial structure, relying on the pull of dynamic centres. Polycentric urban spaces, are spatial elements where urban spaces, by communicating and cooperating with each other, can create dynamic spaces where more peripheral areas are involved in development ( Sen 2003, Faragó 2008, Waterhout et al. 2003 )

It is important to stress, however, that there is no uniform continuity, consistency or consistency in the academic vocabulary of polycentric areas. While some researchers have referred to polycentric urban areas as global city-regions (Scott 2001 ), others have used the term polycentric urban region (Kloosterman-Musterd 2001) or even mega-urban region (Hall-Pain 2006 ). The emergence of polycentric urban regions can be seen as a spectacular element of the economic restructuring in post-Ford. This process has been very successful in regions where firms have adopted a culture of co-opetition and flexible specialisation (Saxenian 1994). The transformation of the economy, with smaller firms co-operating and clustering, has also had an impact on spatial structure, with the increasing value of cheaper agglomeration location choices outside the core cities, a process which has essentially led to the convergence of different metropolitan areas.

In addition to economic restructuring, social influences are also driving the emergence of polycentric urban areas, as in Western Europe, where demographic change has led to major changes in people's lifestyles and mobility patterns, as well as an increase in their need for mobility. (As commuting has become more and more common (with the development of a suitable high-capacity road and rail network), the so-called commuting belt has been steadily moving further and further away from the core city. The growing population in these settlements also had a growing need to spend their leisure time in their new place of residence. As a result, monocentric metropolitan regions have also become increasingly polycentric and, over time, polycentric urban areas are emerging (Kovács-Szabó 2013).

As a consequence of the increase in mobility, polycentric urban areas are characterised by a high level of labour migration from other suburban municipalities to jobs in the urban region. The local workforce moves to other municipalities to work. The result is what is known as 'wasteful commuting' in the regions concerned (Garcia-Palomares 2010). Of course, the historical context of polycentric urban areas should not be ignored either, since in many cases they are based on the fact that, in a particular historical period, the region was able to offer a locational advantage that was highly attractive in a particular economic period and led to an economic boom. Such regions may be, for example, heavy industrial districts built on natural resources such as coal or iron ore deposits (e.g. the Ruhr) or areas along the coastline with a prominent trade and shipping presence, such as the Randstad.

The emergence of polycentric urban areas in the Central and Eastern European region is also facilitated by the fact that the highly compact morphology of traditional socialist cities broke down after the fall of the state socialist system, as different functions and activities were dispersed in a relatively liberal and unregulated environment, and the rate of dispersion was much higher and faster than that observed in Western European cities.

Table 1: Summary table of Polycentric Urban Areas

Term	Definition	Explanation	Example
Polycentric Urban Area	A region with multiple urban centers	A region where several cities or towns are interconnected and interdependent, sharing resources, infrastructure, and labor markets.	Vienna-Bratislava-Győr-(Budapest)
Global City-Region	A type of polycentric area	A region with a global influence, characterized by interconnectedness and competitiveness.	The Randstad region in the Netherlands.
Polycentric Urban Region	A type of polycentric area	A region with multiple urban centers, often focused on specific economic activities.	The Ruhr region in Germany.
Mega-Urban Region	A type of polycentric area	A very large urban region, encompassing multiple cities and towns.	The Tokyo metropolitan area.

Source: edited by the author

The research used a qualitative social science methodology. At the beginning of the study, I identified the municipalities where I would use qualitative methods, interviews, for a deeper analysis, and thus 15 semi-structured interviews were conducted. I chose the selected municipalities to include municipalities of different sizes and to include both those directly affected by rail transport and those not directly affected. Interviews were recorded online and face-to-face using a semi-structured methodology between September 2023 and April 2024. My interviewees were mainly municipal decision-makers (mayors, deputy mayors) or professional managers of municipalities (notaries), who are not mentioned by name due to the sensitivity of the topic and to protect my sources of information. The municipalities included in the interview research are as follows: Vámoszabadi, Győr, Gönyű, Győrzámoly, Bezi, Lébény, Öttevény, Koroncó, Mecsér, Mórchida, Gyarmat, and Rajka and Fertőszentmiklós, which were included as a comparison. As part of the quantitative research, statistical analysis of data from secondary data sources was also carried out; the data sources were the settlement statistics database of the Hungarian Central Statistical Office and TeIR, operated by the Lechner Knowledge Centre.

The primary objective of the data analysis was to gain a picture of changes and processes in agglomerations, both in quantitative and visual terms. The importance of qualitative research lay in the fact that we interviewed actors who, through their position or other involvement, perceive the effects of agglomeration first-hand and who experience the positive and negative processes of suburbanisation in their daily work and life. Finally, the qualitative analysis was based on a series of interviews with local authorities, economic operators, NGOs and other stakeholders.

My research was based on the study of the tasks of local government, as I believe that the real situation of a municipality and the challenges of agglomeration processes and polycentricity can be best understood and an accurate view of the level and challenges of a municipality's ability to perform its tasks can be obtained by examining the level and challenges of a municipality. Following the change of regime in Hungary in 1989, the Parliament of the Republic of Hungary adopted a law providing for a wide range of autonomy and a broad set of responsibilities and powers, which is outstanding by international standards; Act LXV of 1990 on Local Self-Government. Although this law has stood the test of time, the local government system suffers from a number of anomalies. A very important element of this was that by 2010, domestic municipalities had accumulated a debt of over HUF 1 200 billion, which placed a heavy burden on the municipal sub-system of the central budget. Some municipalities came close to financial

and operational insolvency. As a consequence, the legislator decided to reform the entire local government sector. A new law, Act CLXXXIX of 2011 on Local Governments in Hungary, drastically reduced the tasks and powers of local governments. At the same time, under Act CXCIV of 2011 on the Economic Stability of Hungary, the central budget took over some or all of the debt of local governments and made further borrowing by local governments subject to central government approval. On the basis of the new Local Government Act, the following types and groups of tasks were identified in our research: settlement development; settlement planning; settlement management (public cemeteries, public lighting, local roads, public parks and other public spaces, parking), basic health care; local environmental and nature protection; water management, water damage control; cultural services (library, cinema, heritage protection, etc.); and local public services (public services, such as public transport, public transport, public transport, etc.); and local public services (public transport, public transport, public transport, public transport, etc.); child welfare services and care, nursery care; social services and care; housing and premises management; sports, youth affairs; provision of local public transport; waste management.

In the Győr agglomeration, my study area is the core city of Győr and Gönyű, as well as Vámoszabadi, Koroncó and Győrzámoly, Györladamér, which are hotspot areas for agglomeration migration, Öttevény and Lébény, which are easily accessible by public transport, the classic rural areas of Bezi and Mecsér, and Gyarmat and Mórchida, which are located on the periphery of the agglomeration of Győr, the inner periphery, the inner periphery, the Tét district. For comparison, I extended my research to Rajka and Fertőszentmiklós.

It is also important to focus on the case of Rajka because the Rajka area is the site of what the literature calls cross-border residential mobility (CBRM). The reasons for this process are attributed in the literature not only to the usual suburbanisation phenomena, such as trends in the real estate market, but also to the acceleration of the European integration process (Jagodic 2010). Moreover, it should be borne in mind that the emerging cross-border suburbs serve the European Union's Euro-regional plan, which has the political objective of increasing integration between Member States and further strengthening cross-border cooperation, particularly well (Spierings-Velde 2013).

But the reasons behind the CBRM process are not unique. They are basically the same as those seen in the usual suburbanisation phenomena (Jagodic 2010), where we see the phenomenon of rising house prices and rising costs of living in city centres, leading to more people moving to the suburbs (Gerber et al. This process is being accelerated by factors such as motorisation (more cars in families), the development of road and rail infrastructure, and a preference for a more natural lifestyle away from centres (Jagodic 2010). It is also worth looking at other specific motivational factors. Surveys have shown that the reasons for moving out are generally related to a change in living situation. Examples include a change of job (the distance between home and work is a key factor) and changes in income and family situation (Gerber et al. 2017).

Cross-border residential mobility is transforming the areas concerned. On the one hand, it necessarily becomes more colourful and to some extent internationalised, and on the other hand, the people involved become over time dual identities (Gielis 2009). People increasingly see the border less as a dividing factor, but see cross-border areas as an integral part of the urban region. According to studies in the Croatian-Slovenian border region (in my experience, this is also true for the Rajka region), the ethnic tensions that used to exist have been minimised and ordinary people increasingly feel that tensions between the two ethnic groups are generated only by politics. In essence, the border has become a geopolitical construct in people's minds, which has been transcended by everyday life (Jagodic 2010). This is not surprising, of course, as there is a clear parallel between the more we get to know another people, the more direct experience we have, the greater our prejudices and thus the greater our xenophobia. But opinions differ on the extent to which borders can be broken down in society. Strüver, for example, argues that borders are so embedded in social thinking that their separating function is maintained or at most reduced (Strüver 2005).

## Introduction to the Győr Functional Urban Area

The city of Győr has always been one of Hungary's most favourable settlements, becoming a major industrial centre after the Austro-Hungarian unification, which was only strengthened during the socialist period. Thanks to the Rába Hungarian Wagon and Machine Works and many other light industry units, the city became an internationally renowned citadel of machine building and light industry in Hungary.

The city of Győr was not spared the economic shock of the regime change, but within a few years it was able to transform its industrial structure by taking advantage of its extremely favourable infrastructure and transport geography, mainly thanks to the Audi Hungaria Zrt. car and engine factory, which opened in 1992 and is the city's most important employer. In 2021, Audi employed 11 983 people (Source: MTI 2022). As a result, the city and the agglomeration as a whole are dominated by Audi, as there is practically no family that is not at least directly linked to the German Volkswagen Group's engine and car plant in Győr.

Thanks to the rapid transformation following the change of regime and the increasingly important Austrian border, the city and its agglomeration have been an attractive destination for inward migration for decades.

Despite this, Győr's population has been steadily declining since the fall of communism. In 2011, it was 128,193, but the latest figures for 2021 show that the trend has reversed and the city's population has started to grow again, with 132,111 inhabitants.

The city of Győr and its agglomeration are also highly fragmented. The county seat has a significant inner agglomeration zone, which typically includes the parts of the municipalities that were annexed to the city of Győr during the socialist years. These are Pénnyéd, which was annexed to the city in 1950, Bácsa, which was annexed in 1966, and finally Győrszentiván, Gyirmót and Ménfőcsanak, which were annexed in 1970 (Honvári 2014). Based on Suhai's 1984 study, the agglomeration's settlements can be classified into eight clusters using cluster analysis. Although the agglomeration of Győr has changed a lot in the last forty years, the division into cluster groups of the past can still be partially confirmed today. According to the analysis, Győr was considered as an independent cluster. The first cluster includes the settlements in the inner suburbs of Győr, where the number of commuters was already very high in 1984 (e.g. Győrújfalú, Győrladamér, Abda, Öttevény). The settlements in the second cluster have a high degree of functional integration with Győr, they were considered agglomeration settlements and are now the dominant settlements in the agglomeration (Győrújbarát, Győrzámoly, Nyúl).

The fourth cluster included settlements where agricultural activity was dominant, the role of agriculture in these settlements has also declined noticeably, but these settlements managed to maintain their rural, agricultural character (e.g. the sixth cluster was characterised by developed industry, this group includes the settlements of the agglomeration which are now urban (e.g. Pannonhalma, Tét, Lébény). The fifth, seventh and eighth clusters include settlements located to the periphery of the agglomeration, many of which have retained their peripheral status (e.g. Hédervár, Mórchida, Kisbábó, Vaszar, Felpéc) (Honvári 2014).

Nowadays, the second most populous settlement in the agglomeration is Győrújbarát, merged with Győr-Ménfőcsanak, with a population of 8516 in 2021 (KSH 2022). According to official KSH data, the population of the other eight settlements in the agglomeration exceeded 3000 in 2021. These are, in order, Tét (4354), Pannonhalma (4184), Győrzámoly (3866), Győrszemere (3600), Lébény (3391), Abda (3269), Gönyű (3258), Öttevény (3174). However, a significant part of the Győr agglomeration (14 settlements, 20% of the agglomeration) is a so-called „small village”, as the population of these settlements is below 500 inhabitants. The smallest settlement in the agglomeration is Mérges, with 122 inhabitants, but Rábaszentmiklós (142) and Vének (193) also have fewer than 200 inhabitants.

The economic activity of the Győr agglomeration is characterised by the fact that more than 80 percent of the settlements in the region employ at least 10 people, and more than 500 people in

Győr, Győrladamér and Kunsziget. The number of enterprises employing more than 500 persons in 2020 was 17 (source: KSH 2020). The economic activity of the region is outstanding, the unemployment rate is very low, for example, only three municipalities have a number of people receiving 33ot he33 sor looking for a job exceeding 2% of the population. These three municipalities are the villages of Pér, Árpás and Lázi. However, as far as spatial disparities in economic activity are concerned, in nearly 85% of the municipalities the per capita business tax revenue is below HUF 5 000 per capita, while in 6 municipalities the per capita business tax revenue is close to or even above HUF 10 000. These 6 municipalities are Bakonypéterd, Mezőörs, Kunsziget, Vének, Győr and Gönyű. Gönyű, home 33ot he Danube port of Győr, has the highest per capita business tax revenue with HUF 22704, followed by the county seat with HUF 16 076. According 33ot he GKI Economic Research Institute, the per capita income of Hungarian settlements was HUF 1.2 million in 2016. In Győr and in the agglomeration settlements in the immediate vicinity of the city, this amount exceeded HUF 1.6 million per capita, which was only reached by a few agglomeration settlements around Budapest, the wealthier Transdanubian settlements and typically the Buda districts. In the vast majority of agglomeration settlements in Győr, this value is typically above the national average, but below HUF 1.6 million per capita. The only exceptions to this were some of the inner peripheral settlements of the agglomeration – in the district of Téli – which are also disadvantaged in terms of transport geography, with per capita incomes a few tens of thousands HUF below the national average.

## Results

As you can see, these municipalities are in many different situations. Some of the municipalities studied are also located in one of the most dynamically developing regions of Hungary, in a priority area. Rajka, inter-island municipalities, other municipalities are in an internal peripheral situation. However, it can be seen that suburbanisation processes are common to all settlements. In this paper, we identify the common and challenging difficulties in service delivery that are common to these municipalities and the specific patterns that are unique to certain areas or municipalities, with visible differences.

## Urban development, spatial planning

Urban development and spatial planning is clearly one of the biggest and most important challenges of all the areas examined.

The municipalities studied were all significantly affected by the effects of COVID-19 and the energy crisis, which significantly amplified the agglomeration externalities of suburbanisation processes. One reason for this is the youthful demographic character of many of the municipalities studied, with young adults and people starting families moving to the agglomeration areas, and the growing number of children, which has led to the need to increase nursery and kindergarten capacity. Most municipalities are seeking to implement the energy side of institutional expansion in a sustainable way by installing solar panels and heat pumps to decouple the largest energy consumers from the central grid and ensure a secure long-term energy supply for municipal institutions.

In many cases, municipalities try to implement investments in energy modernisation, infrastructure development and urban development through tenders, so tenders often set the agenda and shape the direction of development, rather than integrated planning and long-term thinking, and conscious, long-term, conceptual urban policy thinking is basically marginalised.

For urban development, it is vital for the municipalities studied to keep population growth within certain limits. If the municipality is a partner in the parcelling out of new land, it must ensure that the appropriate infrastructure is built, developed and expanded, and that the municipality is thoughtfully developed in a complex way, taking into account the needs of the local population, but in many cases these municipalities (as in the north-west of the agglomeration) can be 'full



slabs'. However, the infrastructural developments desired by the new population threaten the traditional characteristics of these settlements. Some municipalities are already finding it difficult to control this process. Inter-island settlements such as Győrzámoly.

On the other hand, there are settlements under study, such as Vámoszabadi, where a new settlement is being created, with a dense suburban development of a similar size to the current settlement, several kilometres away from the current urban area, with inadequate public services. Their provision is far beyond the capacity and resources of the municipality. As a consequence, in the absence of government support or private capital, these developments are unlikely to materialise in the medium term. The example of Vámoszabadi is not unique, as municipalities in areas identified as hotspots for migration have identified this type of challenge to a greater or lesser extent. The study has highlighted that it would be of great help to municipalities if land parcelled out 30 years ago could be 'reclaimed', thus alleviating the burden of what are now clearly long-term mistakes made by previous municipalities, the reality of which is questionable in the light of the benefits lost and the costs already paid for land conversion.

Another major problem is that the needs of the new families differ from those of the municipality, which causes considerable conflict. Often, these families have needs that the municipality or indigenous locals are unable or unwilling to meet or tolerate. This conflict is even more acute in Rajka, where newcomers are typically of a different nationality, namely Slovak.

## **Health**

Health is also a cardinal and common problem in the municipalities surveyed. The radical population growth in the agglomeration areas clearly increases the number of people visiting a doctor's surgery in the area, the number of cases increases, but the number of GPs has not increased significantly in recent decades, the number of patients per GP increases and the size of the surgeries decreases in relation to the population.

The typical problems are in the area of paediatric care, where demand for paediatric care is growing dynamically; as emigrants are usually young couples or families with young children, there are many more patients waiting to see paediatricians. If the assumption that the majority of emigrants are families about to start a family or planning to have children is correct, it is expected that the workload of paediatricians will continue to increase and the demand for paediatric care will also increase. One of the main reasons for this is the central government's Family Support Programme, which provides substantial support for families moving into new-build housing.

At the time of the research, the main problems in the agglomeration hotspot areas were overcrowding (e.g. Győrzámoly) or shared adult and paediatric practices (e.g. Vámoszabadi). In Győrzámoly and the neighbouring Győrújfalu, not included in the study, GPs terminated their contracts with the municipality in 2023 due to high patient card numbers and national health insecurity, and primary health care in this part of the inter-island region has essentially collapsed (Új Szó 2023). Improvements to health infrastructure are particularly needed in the municipality of Vámoszabadi, where the new medical and dental clinic being built in the settlement of Sitia Hill is partly intended to address these challenges.

## **Settlement management**

It is an interesting anomaly that in many cases the more populated a municipality is, the poorer it is, as there are more public workers who could not/would not find a job in the primary labour market. Among the municipalities surveyed, this is only observed in some municipalities on the outskirts of the municipality of Tét. In contrast, in the more prosperous agglomeration settlements, where the tasks to be performed and the infrastructure to be provided increase with the population growth, municipal management costs significantly more, as there are not enough public workers to perform the tasks - or those who remain in public employment are no longer suitable for this.

At the time of my research, it can already be concluded that all the municipalities included in the study successfully weathered the winter energy crisis of 2022/2023 by introducing significant savings measures and rescheduling energy modernisation measures, with some restrictions. It is expected that they will be able to switch to a more sustainable operating model during this period and in the longer term (greater use of renewable energy sources, e.g. use of heat pumps in addition to solar panels, etc.)

The development of the local road network is a challenge in all the agglomeration settlements studied, as one of the most characteristic features of Hungarian agglomeration settlements is that they have not been able to develop the capacity of the local public infrastructure, especially local roads, in line with the pace of the development of the settlement. The issue of parking is a challenge in those settlements, typically those with a significant concentration of new, relatively densely built-up terraced housing estates.

There is also a strong demand for cultural and leisure services in the Győr agglomeration. Many of the municipalities surveyed have serious problems in this area. In the municipality of Vámoszabadi, a new community centre is needed, which is currently one of the main problems of the municipality. A community centre is also needed in Öttevény and Győrzámoly, as the sports hall can only partially meet local needs. An outdoor cultural and leisure facility is needed in Bezi. The main problem is that the cultural and entertainment offer of the agglomerations cannot (and should not) compete with the county in terms of quantity and quality, but the expectations of the population are similar.

#### Transport

The analysis of the transport and mobility situation was not the purpose of my investigation, as the Möt.v. does not mention the provision of agglomeration, urban (inter-urban) transport as a municipal task and the provision of this task is the task of the MÁV Group and the client is the Ministry of Construction and Transport (ÉKM). However, it is important to emphasise that local public transport is a serious problem in Győr, as it is becoming increasingly difficult to ensure its economical operation and the Volánbus, which is entrusted with this task, is seeking to impose ever-increasing costs on the local authority. This is a major problem throughout the country and the local transport system needs to be reformed in terms of financing and organisation. The costs of operators are constantly rising due to higher fuel prices, the increasing cost of staffing and the increasing cost of maintaining the fleet. The situation is made even more difficult by the fact that the average age of local buses in Győr is still very high and renewal is not keeping pace with the replacement of intercity buses. The fare reform introduced on 1 March 2024 has extended the fare structure established in the metropolitan agglomeration to the whole country, which could bring significant changes to transport in the agglomeration areas, although local services are not yet available with national and county season tickets in Győr. (In essence, full integration has been achieved only in Budapest, and among the major rural cities only in Zalaegerszeg, but this was discontinued after the test period due to high revenue losses) The financial burden of the tariff reform on operators in summer 2024 is not yet known, but it is expected that without drastic changes in travel patterns and an increase in the share of public transport, or significant state compensation, the burden on operators will continue to grow in an already resource-poor sector. As a consequence, passengers will ultimately pay the price for cheap travel through a deterioration in service quality. As service quality declines, passenger numbers are also falling year on year.

#### **Resilience of settlements**

The resilience of a municipality is a crucial factor for its success. Agglomerations are particularly vulnerable to social and economic change, as dynamic population growth means that any change has a major impact on them. The most important factor determining the resilience of a municipality is its share of independent revenues in its overall budget. These are the resources that municipalities can use to improve the quality of their compulsory tasks and to carry out their voluntary tasks, which ultimately determine to a large extent their future prospects.

Those municipalities that have significant independent revenues over a predictable number of years have, in all cases examined, significant local business tax revenues. Gyönyű, Lébény, Fertőszentmiklós. These municipalities have typically planned their development along a long-term strategy and have been able to control the development of their urban areas and keep it at a level at which the development of public infrastructure can keep pace. In contrast, the settlements without significant independent income, e.g. the inter-island villages of Vámossszabadi, Győrújfalú, Győrzámoly, which are considered to be the hotspot area, were able to cover the development of public infrastructure after a while only by new parcelling out and land consolidation, i.e. by selling land, but this caused a spiral, where the population was constantly growing, so that the public infrastructure had to be developed strongly again and again. Today, in the most affected municipalities in the Szigetköz, the situation has reached the point where further land reclassification is becoming increasingly difficult to imagine, so that the necessary development is no longer possible without public subsidies, and the municipalities have become the recipients of increasingly uncertain public subsidies, and our resilience has been greatly reduced,

### **Conclusion**

All of the municipalities surveyed are feeling the effects of suburbanisation trends, but the challenges posed by agglomeration processes do not affect the municipalities surveyed in the same way. The main challenges for the agglomeration municipalities studied are in the following areas: urban development, urban planning, settlement management, health care.

The potential solutions to the problems identified are well beyond the current capabilities of local authorities, but local authorities have the most technical knowledge and information to solve these problems with appropriate central assistance. In my opinion, by channelling additional resources into the local government sector, strengthening the coordinating role of district and county governments, and enhancing agglomeration-level thinking and cooperation, local governments may be able to mitigate and solve these problems. In this respect, further studies of other agglomerations or agglomerating urban areas could be proposed, although it should be noted that a comparative international embedding of these studies is less possible due to the different regulatory environment for local government in the European Union.

However, it is also important to stress that, especially in the case of some municipalities in the inner periphery of the agglomeration (district of Tét), the provision of additional resources is far from sufficient, as the shortcomings in the human resource capacity of municipal offices have become so deep that the capacity of these lagging municipalities to make effective use of additional resources has been lost. Moreover, the gap between municipalities is widening: successful municipalities are becoming even more successful, while the backlog of less successful ones is widening, and the human resource capacity of each municipality plays a decisive role in this. Typically, municipalities where a high proportion of municipal staff have a tertiary education (in some of the agglomerations studied, 80-90% of municipal staff have a tertiary education) are more likely to be able to initiate projects and attract funding, and thus become more successful.

Overall, one of the main findings of my research is that agglomeration municipalities with high responsiveness and resilience are the ones that are best able to cope with the challenges of a dynamically changing environment due to social and demographic changes. Resilience is determined most of all by the size of their own revenues, with the size of their local business tax revenue (HIPA) playing a key role. In addition, municipalities with high HIPA revenues tend to have a specific settlement development strategy and vision, and as a result, these municipalities have been less affected by uncontrolled in-migration, and have remained overall liveable.

In summary, my research shows that, due to agglomeration spatial transformation, the most exposed settlements in polycentric urban areas are the medium-developed agglomeration settlements. These are sufficiently attractive to inward investors to create new residential areas, but their public infrastructure cannot keep pace with demand due to the scarcity of space and the

lack of significant local business tax revenues. This leaves municipalities in a vulnerable position and in constant need of improvement, makes day-to-day municipal management a major challenge, and leaves no scope for large-scale, long-term development that can respond to future challenges. For all municipalities, the biggest problem is conurbation transport, but the municipal governments, and even the regional governments and counties, have no role to play in shaping and shaping this, as this is a matter of state competence.

## References

- Albrecht, L. (2001). How to Proceed from Image and Discourse to Action: As Applied to the Flemish Diamond. *Urban Studies*, 38(4), 733-745. <https://doi.org/10.1080/00420980120035312>
- Bajmóczy, P., & Jakus, I. (2023). A szuburbanizáció szakaszai, és azok térbelisége Magyarországon. *Településföldrajzi Tanulmányok*, 12(1-2).
- Bontje, M. (2001). Dealing with Deconcentration: Population Deconcentration and Planning Response in Polynucleated Urban Regions in North-West Europe. *Urban Studies*, 38(4), 769-785. <https://doi.org/10.1080/00420980120035330>
- Burger, M. J., Meijers, E. J., Hoogerbrugge, M. M., & Tresserra, J. M. (2017). Borrowed Size, Agglomeration Shadows, and Cultural Amenities in North-West Europe. In *Second Rank Cities in Europe* (pp. 60-79), Routledge.
- Bajmóczy, P. (2003). *Suburbanisation in Hungary outside the Budapest Agglomeration* (PhD thesis). University of Szeged, Faculty of Natural Sciences, Department of Economic and Social Geography, Szeged. [http://doktori.bibl.u-szeged.hu/id/eprint/32/7/2003\\_bajmoczy\\_peter.pdf](http://doktori.bibl.u-szeged.hu/id/eprint/32/7/2003_bajmoczy_peter.pdf)
- Csanádi, G., Csizmady, A., Kőszeghy, L., & Tomay, K. (2009). *Society-Space-Structure*. Budapest: ELTE TÁTK Centre for Urban and Regional Studies.
- Czaller, L. (2016). Agglomeráció, regionális növekedés és konvergencia. *Területi Statisztika*, 56(03), 275-300. <https://doi.org/10.15196/TS560302>
- Ciccone, A. (2002). Agglomeration effects in Europe. *European economic review*, 46(2), 213-227.
- Csurgó B. (2013). *Living and living in the countryside* Argumentum Publishing Budapest
- Enyedi Gy. (1988). *A városnövekedés szakaszai*. Budapest: Akadémiai Kiadó.
- Faragó, L. (2006). The Conceptual Foundations of a Territorial Policy Based on Cities. *Tér és Társadalom*, 2006(2), 83-102. <https://doi.org/10.17649/TET.20.2.1055>
- Faragó, L. (2008). The Normative Concept of Urban Network Development Based on Functional Urban Areas. *Village-City Region, 3rd Urban Network Development*, 27-31.
- Foster, N., & Stehrer, R. (2009). Sectoral Productivity, Density, and Agglomeration in the Wider Europe. *Spatial Economic Analysis*, 4(4), 427-446. <https://doi.org/10.1080/17421770903317629>
- Fishman, R. (1987). *Bourgeois Utopias: The Rise and Fall of the Suburbs*. Basic Books.
- Garcia-Palomareres, J. C. (2010). Urban Sprawl and Travel to Work: The Case of the Metropolitan Area of Madrid. *Journal of Transport Geography*, 18(2), 197-213. <https://doi.org/10.1016/j.jtrangeo.2009.05.012>
- Gardiner, B., Martin, R., & Tyler, P. (2011). Does Spatial Agglomeration Increase National Growth? Some Evidence from Europe. *Journal of Economic Geography*, 11(6), 979-1006. <https://doi.org/10.1093/jeg/lbq047>
- Gerber, P., Ma, T.-Y., Klein, O., Schiebel, J., & Carpentier-Postel, S. (2017). Cross-Border Residential Mobility, Quality of Life, and Modal Shift: In a Luxembourg Case Study. *Transportation Research Part A: Policy and Practice*, 104, 104. <https://doi.org/10.1016/j.tra.2017.06.015>

- Gielis, R. (2009). Borders Make the Difference: Migrant Transnationalism as a Border Experience. *Tijdschrift Voor Economische En Sociale Geografie*, 100(5). <https://doi.org/10.1111/j.1467-9663.2009.00572.x>
- Hall, T., & Barrett, H. (2018). *Urban Geography* (5th ed.). London: Routledge. <https://doi.org/10.4324/9781315652597>
- Hardi, T. (2002). Suburbanisation Phenomena in the Győr Area. *Tér és Társadalom*, 3, 57-83. <https://doi.org/10.17649/TET.16.3.1980>
- Honvári, P. (2014). *Research and Results of the Agglomeration of Győr from the 1960s to the Present*. Győr: Széchenyi István University.
- Jagodic, D. (2010). Cross-Border Residential Mobility along the Internal Borders of the European Union. In Hardi, T. et al. (Eds.), *Hungarian-Slovak Agglomeration around Bratislava* (pp. 27-43). MTA Regional Research Centre Győr-Somorja.
- Kiss, B. Á., & Porhajas, G. L. (2024). Az önkormányzati feladatellátás kihívásai Magyarország eltérő adottságú agglomerációs térségeiben. *Tér és Társadalom*, 38(3), 95-117. <https://doi.org/10.17649/TET.38.3.3561>
- Kloosterman, R. C., & Musterd, S. (2001). The Polycentric Urban Region: Towards a Research Agenda. *Urban Studies*, 38(4), 623-633.
- Kocsis, J. B. (2000). The Main Theoretical Approaches to the Phenomenon of Suburbanisation in the Literature of Urban Sociology and Other Related Disciplines. *Tér és Társadalom*, XIV.
- Kocsis, J. B. (2023). : Recreating Locality. In Van Damme, I., McManus, R., & Dehaene, M. (Eds.), *Creativity from Suburban Nowheres* (pp. 198-232). Toronto: University of Toronto Press.
- Kovács, Z., & Szabó, T. (2013). Spatial Processes of Polycentric Urban Development in Central Europe. *Settlement Geography Studies*, 2(1).
- Kőszegfalvi, Gy. (1995). *A települési infrastruktúra geográfiája*. Pécs: Jannus Pannonius University.
- Majewska, J., & Truskolaski, S. (2017). Spatial concentration of economic activity and competitiveness of Central European regions. *Challenges for international business in Central and Eastern Europe (Przedsiębiorczość Międzynarodowa)*, 3(1), 47-64. Kraków: Cracow University of Economics. <https://doi.org/10.15678/PM.2017.0301.03>
- Nemes-Nagy, J. (2005) International and Domestic Trends in Spatial Analysis. *International and International Trends in Regional and National Statistics*.
- Saxenian, A. (1994). *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Cambridge, MA: Harvard University Press.
- Scott, A. J. (2001). Introduction. In A. J. Scott (Ed.), *Global City-Regions: Trends, Theory, Policy* (pp. 1-10). Oxford: Oxford University Press. <https://doi.org/10.1093/oso/9780198297994.003.0001>
- Sen, A. (2003). *Development as Freedom*. Budapest: Europe Book Publishing.
- Somlyódy, P. E. (2023). The Validity and Prevalence of Urban Network Development Based on a Polycentric Approach in Hungary. *Comitatus*, 33(246). <https://doi.org/10.59809/Comitatus.2023.33-246.171>
- Spierings, B., & van der Velde, M. (2013). Cross-Border Differences and Unfamiliarity. *European Planning Studies*, 21(1). <https://doi.org/10.1080/09654313.2012.716236>
- Strüver, A. (2005). Spheres of Transnationalism within the European Union: On Open Doors, Thresholds, and Drawbridges along the Dutch-German Border. *Journal of Ethnic and Migration Studies*, 31(2). <https://doi.org/10.1080/1369183042000339954>
- Szebényi, A. (2016). *Spatial-Structural Characteristics of Residential Suburbanisation in the Pécs Area*. PhD thesis. Pécs: University of Pécs, Faculty of Natural Sciences, Doctoral School of Earth Sciences. <https://pea.lib.pte.hu/handle/pea/23135>

- Szmytkie, R. (2021). Suburbanisation Processes within and Outside the City: The Development of Intra-Urban Suburbs in Wrocław, Poland. *Moravian Geographical Reports*, 29(2), 149-165. <https://doi.org/10.2478/mgr-2021-0012>
- Timár, J. (1999). Theoretical Issues on Suburbanisation. *Geographical Bulletin*, 1-2, 7-31.
- Van Den Berg, L., Drewett, R., Klaassen, L. H., Rossi, A., & Vijverberg, C. H. T. (1982). *A Study of Growth and Decline: Urban Europe*. New York, Oxford: Pergamon Press.
- Vasárus, G. L., & Makra, Zs. (2015). Some Issues of Agglomeration Delimitation in the Example of Győr. Győr: Széchenyi István University.
- Vasárus, G. L. (2022). Városhatáron Belüli Szuburbanizáció Magyarországon-egy Paradoxon Feltárása. *Területi Statisztika*, 62(04), 379-404. <https://doi.org/10.15196/TS620401>
- Vogel, J. (2012). Agglomeration and growth: evidence from the regions of Central and Eastern Europe.
- Vogel, J. (2012). Agglomeration and Growth: Evidence from the Regions of Central and Eastern Europe. *ERSA conference papers*, ersa12p1089, European Regional Science Association.
- Waterhout, J., Meijers, K., & Zonneveld, R. (2003). *The Application of Polycentricity in Spatial Development Policies in Europe: One Concept Serving Multiple Objectives*. Eura-Eurocities Conference, Budapest.