

# CHARACTERISTICS OF TERRITORIAL DEVELOPMENT IN THE WEST-HUNGARIAN BORDER AREA

**BUSKÓ Tibor László**

PhD, Senior Lecturer, National University of Public Service,  
Faculty of Public Administration, Budapest, Hungary  
Address: Nemzeti Közszerológiai Egyetem H-1118 Budapest, Ménesi út 5  
E-mail: Busko.Tibor@uni-nke.hu

## ABSTRACT

“Permeability” is one of the most important characteristics of borders. It is a commonplace that borders not only divide, but also connect the two territories on either side. Otherwise, the permeability of borders has a large effect on the development of the border areas. Our examination tests this hypothesis using the example of the West Transdanubian Region. During the State-Socialist regime, this area under the shadow of the impermeable Iron Curtain became a typical periphery, where the ruling power hardly sent any resources for development. After the democratic transformation, the Austrian-Hungarian border became semipermeable border, whose connecting and filtering functions slowly came into equilibrium. Finally, after the accession to the European Union in 2004, and, even more so, the Schengen Area in 2004/2007, dominance of contact functions led to a completely open border. In order to better understand this process, our examination tries to quantify the general development level/dynamism of West Hungarian Border Area micro-regions/districts on the basis of Regional Statistical Yearbook of Hungary in 1994, in 2004, and in 2013 – in comparison with the similar data of whole Hungary. We perform this task by using one of the most widespread data reduction methods, Principal Component Analysis (PCA). Although the PCA justifies a positive correlation between the permeability of the borders and the development level/dynamism of the West Transdanubian micro-regions/districts, we point out significant intra-regional developmental differences between the micro-regions/districts as well, that depends on, in part, their proximity to the border and their degree of urbanization.

**Keywords:** state borders; permeability; barrier; semipermeable borders; open borders; West Transdanubian Region; microregions; districts; (micro)regional development; Principal Component Analysis.

## Introduction

Permeability is one of the most important characteristics of borders (Buskó, 2012). It is often mentioned that borders not only divide, but also connect the two territories on either side. In other words, the permeability of borders has

a large effect on the development of areas along a border. In the sections that follow, we try to test the truth content of this hypothesis, using the example of the West Transdanubian Region. During the State-Socialist regime, the essence of the Austrian-Hungarian border could be best described by the word “*barrier*”. The areas of Transdanubia under the shadow of the Iron Curtain – areas which otherwise traditionally had been among Hungary’s most developed – became typical peripheral areas during this period, where the ruling power sent hardly any resources for development. Although the impermeability of the Austrian-Hungarian border gradually dissolved from the 1960s onward, this only made the picture somewhat more nuanced. Thus, based on the manufacturing history of Győr-Sopron County – mainly in Győr and Mosonmagyaróvár, and starting in the seventies in Csorna and Kapuvár – vigorous industrialization began, and as a result the county gradually caught up with the economically advantaged areas of Hungary. (Rechnitzer, 2005). Elsewhere, however, investment remained subdued. After the democratic transformation, this situation fundamentally changed: the Austrian-Hungarian border became a so-called *semipermeable border*, in which the connecting (contact) and the filtering functions slowly came into equilibrium. But the real breakthrough was Hungary joining the European Union and, even more so, the Schengen Area, which happened in 2004 and 2007 respectively. As a result the Austrian-Hungarian border came to have exclusively a contact function, becoming essentially an *open border*. (An overview of the process is given in: Hardi-Nárai, 2001; Rechnitzer, 2005; Hardi, 2005). In this study we review the effects of this process on the development level of the West Transdanubian Region that lies along the Austrian-Hungarian border. To do this, in order to make evident the developmental differences within the region as well, we use the Hungarian Central Statistical Office’s (Hung: Központi Statisztikai Hivatal, KSH) Regional Statistical Yearbook, which contains micro-regional data. We scrutinized three years:

- 1996, when the KSH first published sufficiently detailed micro-regional level data sets;
- 2004, the year when Hungary joined the European Union;
- 2013, the latest year in which the Regional Statistical Yearbook’s micro-regional level data are accessible.

## Compilation of the database

In this study, first of all we must clarify some problems related to the compilation of the database. The first issue to be clarified concerns the *primary regional area of the test*. Although our primary goal is to examine the effect that being on the border has on the development level of the West Transdanubian Region, we have marked this area at the micro-regional level so that we can demonstrate the differences within a region. However, the micro-regional examination within a region poses a few problems. The statistical accounting unit of the micro-region was institutionalized by the President of the KHS in communication 9006/1994 (s.k.3). According to this, the “*statistical system of micro-regions is comprehensive throughout the country, and does not cross county*



For this study, we do not consider the relatively small changes in the number/area of micro-regions/districts of the West Transdanubian Region, only for the compilation of the 2013 database, in the case of which we restrict ourselves to working with the compilation of the combined data of Budapest instead of the 23 districts named in the area of the capital. Thus, the 1996, 2004, and 2013 datasets become more similar structurally, which makes our computed results easier to compare.

In the course of the study the development trends of both micro-regions and districts will be examined as a function of two dimensions:

- *border status*: micro-regions/districts that are directly on the border are called *border micro-regions/districts*, while those that do not touch the border are called *remote from the border micro-regions/districts*.
- *Degree of urbanization*: the micro-regions/districts that have an urban center with county rights are called *metropolitan micro-regions/districts*, while those without an urban center with county rights are *less urbanized micro-regions/districts*.

The second problem to be cleared up concerns *the subject matter of the study*. This was earlier denoted by the (micro) regional development level, or the trends in (micro) regional development level. But since a “development level variable” does not occur in any of the statistical sources, with the help of a multivariable mathematical-statistical method we had to create this from the actual variables in our data sources. We performed this task by using one of the most widespread data reduction methods, Principal Component Analysis (PCA). Without going into details of the mathematical analysis, I would just like to mention that PCA is usually considered successful if:

- (a) The individual variables fit fairly tightly – at least with 0.25 communality values – with our principal component,
- (b) The principal component maintains a large fraction of the heterogeneity (variance) of individual variables – usually at least 50%.

Here we mention that in the course of our earlier studies on a similar subject (e.g. Buskó, 2012) we usually found the following 11 development metrics to be relevant, that is, to have at least 0.25 communality values with the principal component:

- Resident population change of x+y year as compared to x year, percentage
- Share of inhabitants living in settlements with a population density over 120, percentage
- Gross income serving as a basis of the personal income tax/tax-payer, thousand HUF
- Rate of registered unemployment/jobseekers, percentage
- Dwellings built in x year per thousand inhabitants
- Households consuming piped gas as a percentage of dwelling stock
- Households connected to the public sewerage network as a percentage of dwelling stock
- Number of registered/active corporations per thousand inhabitants
- Consulting hours in outpatient service per thousand inhabitants
- Full-time Secondary school students per thousand inhabitants
- Passenger cars per thousand inhabitants

Of course the individual variables did not meet the dual criteria mentioned above (individual variables having at least 0.25 communality values; principal component retaining at least 50% heterogeneity) in every year. With all this in mind, the principal components derived from data from the 1996, 2004, and 2013 years looked as follows:

Table 1

**The principal component analysis communality values/retained heterogeneity, 1996**

Communalities		
	Initial	Extraction
Urbanization	1.000	.578
Sewerage	1.000	.721
High schoolers	1.000	.533
Pers. Income tax	1.000	.715
Registered bus.	1.000	.767
Vehicles	1.000	.588
Patient hours	1.000	.443
Unemployment	1.000	.485
Retained heterogeneity: 55.388%		

*Source:* Author's calculation based on KSH 1996.

Table 2

**The principal component analysis communality values/retained heterogeneity, 2004**

Communalities		
	Initial	Extraction
Urbanization	1.000	.515
Pop., vs. 2001	1.000	.345
Pers. Income tax	1.000	.742
Gas	1.000	.328
Sewerage	1.000	.517
Registered bus.	1.000	.664
Vehicles	1.000	.760
Buildings built	1.000	.488
Unemployment	1.000	.632
Retained heterogeneity: 52.210%		

*Source:* Author's calculation based on KSH 2004.

Table 3

**The principal component analysis communality values/retained heterogeneity, 2013**

Communalities		
	Initial	Extraction
Pop., vs. 2001	1.000	.440
Urbanization	1.000	.516
Pers. Income tax	1.000	.764
Gas <sup>3</sup>	1.000	.249
Sewerage	1.000	.436
Operating co.'s	1.000	.802
Vehicles	1.000	.564
Buildings built	1.000	.508
Jobseekers	1.000	.611
Retained heterogeneity: 54.334%		

*Source:* Author's calculation based on KSH 2013.

## Results of the study

The results of the study can best be shown by creating so-called principal component scores. For this, every Hungarian micro-region/district is assigned a standardized value consisting of a comparison of its level with the levels of every other micro-region/district. The following chart shows the number of Hungarian micro-regions/districts above and below average for the years 1996, 2004, and 2013.

Table 4

**Number of Hungarian micro-regions/districts above and below average, 1996, 2004 and 2013**

	1996	2004	2013
Number of above-average Hungarian micro-regions/districts	61	72	80
Number of below-average Hungarian micro-regions/districts	77	96	96
Maximum principal component score	3.42144	2.43565	3.01552
Minimum principal component score	-1.74712	-2.14236	-1.85712

*Source:* Author's calculation based on KSH 1996, 2004, 2013.

In the following, we first check which of the micro-regions/districts of the West Transdanubian Region are above the Hungarian average and which are be-

<sup>3</sup> Since the number of households with gas falls just 0.1% short of the traditionally agreed 25% communality value, with a little goodwill we decided to include it in the principle component analysis calculation.

low the Hungarian average for the given years, with special attention to their border proximity and urbanization level.

Table 5

**Above-averagely and below-averagely developed  
micro-regions/districts in the West Transdanubian Region,  
1996, 2004 and 2013**

1996	Above average	Below average
Number of metropolitan / border micro-regions	4	0
Number of metropolitan / remote from border micro-regions	1	0
Number of weakly urbanized border micro-regions	4	3
Number of weakly urbanized remote from border micro-regions	2	4
2004	Above average	Below average
Number of metropolitan / border micro-regions	4	0
Number of metropolitan / remote from border micro-regions	1	0
Number of weakly urbanized border micro-regions	5	3
Number of weakly urbanized remote from border micro-regions	3	6
2013	Above average	Below average
Number of metropolitan / border micro-regions	4	0
Number of metropolitan / remote from border micro-regions	1	0
Number of weakly urbanized border micro-regions	6	1
Number of weakly urbanized remote from border micro-regions	6	2

*Source:* Author's calculation based on KSH 1996, 2004, 2013.

In the case of metropolitan micro-regions/districts, at first glance it does not appear that there were any significant changes during the period under consideration. However, it is worth examining the situation of the aforementioned districts/micro-regions when they are compared with each other.

Table 6

**Principal component scores and ranking of urbanized  
micro-regions/districts in the West Transdanubian Region,  
1996, 2004 and 2013**

1996	Principal component score, ranking	2004	Principal component score, ranking	2013	Principal component score, ranking
<i>Szombathely</i>	1.93408 (4th)	<i>Győr</i>	1.86605 (8th)	<i>Győr</i>	2.35442 (3rd)
<i>Győr</i>	1.75345 (8th)	<i>Szombathely</i>	1.67906 (14th)	<i>Sopron</i>	2.11389 (6th)
<i>Zalaegerszeg</i>	1.63523 (9th)	<i>Sopron-Fertőd</i>	1.30495 (24th)	<i>Szombathely</i>	1.52757 (17th)
<i>Sopron</i>	1.61247 (10th)	<i>Zalaegerszeg</i>	1.17178 (28th)	<i>Zalaegerszeg</i>	0.82688 (35th)
<i>Nagykanizsa</i>	1.02172 (26th)	<i>Nagykanizsa</i>	0.73959 (40th)	<i>Nagykanizsa</i>	0.30314 (64th)

*Source:* Author's calculation based on KSH 1996, 2004, 2013.

Most prominent is the markedly differing development paths in the areas belonging to city with county rights of the three affected counties (Győr-Moson-Sopron, Vas, Zala). As regards to the dynamically developing Győr-Moson-Sopron County, above all the *Győr-centered micro-region/district*, which is most connected with Austria – the M1 motorway toward Austria, and the main train route № 1 go through this region – had a true success story in its development following the democratic transformation. Although this area had already been at a high degree of development during the State Socialist period, following the democratic transformation its development accelerated noticeably. The minor decline between 1996 and 2004 (from 4th → 8th place) is only illusory: during this period the micro-regions that came to surpass the micro-region of Győr were practically and exclusively those micro-regions which became independent from the Budapest agglomeration under the 1998 revision of the micro-region system. Of the other non West Transdanubian metropolitan micro-regions, it went on to surpass both that of Szeged and Pécs, and only Székesfehérvár and Veszprém remained ahead of it. Between 2004 and 2013, however, the Győr micro-region/district went on to surpass not only the micro-region/district centered around the other non West Transdanubian cities with county rights, but also Budapest and (except for the Dunakeszi and Budakeszi districts) the whole Budapest agglomeration. The development path of the Sopron micro-region/district shows similar characteristics. During the period under consideration, in 2004 it surpassed the micro-region centered around Zalaegerszeg, although during that period regarding rankings it was more characteristically falling behind: besides the micro-regions of the Budapest agglomeration that have just been mentioned, certain resort areas (the micro-regions around Lake Balaton and Lake Velencei) as well as a few non West Transdanubian micro-regions whose centers have county rights (Nyíregyháza, Debrecen) surpassed it. However, by 2013 it advanced to be the 6th most developed district, surpassed only by the districts of the Budapest agglomeration, Budakeszi, Dunakeszi, Budapest and Szentendre, as well as the Győr district.

As regards to Vas County, which is also close to the Austrian border, but less fortunate regarding transportation-geography, the *micro-region/district centered around the county seat Szombathely* is characterized by a kind of duality. On the one hand, it can be observed that it was unable to keep pace with the most dynamically developing micro-regions/districts. While in 1996 it was the West Transdanubian Region's most developed micro-region – and was surpassed only by the Budapest agglomeration, and by the micro-regions of Szeged and Pécs – by 2004 it was surpassed not only by the micro-region centered around Győr, but by most micro-regions of the Budapest agglomeration, certain resort areas on the shore of Lake Balaton, and other dynamically developing county seats and their surrounding region (Eger, Székesfehérvár, Veszprém) as well. After Hungary joined the European Union, this trend noticeably slowed and Szombathely was more or less able to retain its position: although certain districts of the Budapest agglomeration that became independent under the district system reform (Érd, Gyál, Vecsés districts), certain recreational areas (Gárdony), as well as the districts of Sopron and Szeged surpassed it, but the districts of Székesfehérvár and Veszprém were once again behind it. Overall, we must note that the change in rank of the Szombathely



micro-region/district (1996: 4. → 2004: 14th → 2013: 17th) – especially when we take into account that in 2004 several micro-regions of the Budapest agglomeration surpassed it – which in 1996 had achieved 1<sup>st</sup> place as parts of the combined Budapest agglomeration – cannot be interpreted as a clear setback. It is simply that a few other micro-regions/districts took advantage of their more favorable conditions to get ahead, whether due to their proximity to the capital or to lakes Balaton/Velencei, or their more favorable transportation-geographic connection with Austria.

However, we have to evaluate as a clear decline the cases of two metropolitan micro-regions located in Zala County – which are not connected with the Austrian border, rather the Slovenian and/or Croatian borders – namely, Zalaegerszeg and Nagykanizsa. In the case of *the Zalaegerszeg-centered microregion/district*, which is remote from the Austrian border, its relatively isolated transportation-geographic location might be the main reason that it was unable to show an advance in its development. The rail line connecting Hungary with Slovenia that was commenced in 2001, conducting a very low level of traffic, was not able to change this substantially. The possibilities of the *Nagykanizsa-centered micro-region/district* were hindered by its less fortunate historical inheritance – the remains of state socialist industry and the difficulties in structural change that were less characteristic of the West Transdanubian Region. This trend of setbacks can be seen as similar to the case of both micro-regions/districts (Zalaegerszeg micro-region/district – 1996: 9th → 2004: 28th → 2013: 35th; Nagykanizsa micro-region/district – 1996: 26th → 2004: 40th → 2013: 64th place), with the following differences:

- The micro-region centered around Zalaegerszeg started with a relatively more favorable position (in 1996 it was the 9th most developed micro-region in Hungary);
- In the case of Nagykanizsa the decline is much more spectacular. In 2013 with its principal component score of 0.30314, its result was absolutely average, which in the case of a West Transdanubian district whose center has county rights, is a decidedly poor result. Among similar non West Transdanubian areas, in 2013 only the districts centered around Kaposvár, Hódmezővásárhely and Salgótarján performed more poorly than this.

Finally let's have a look, with the help of following table, at the development paths of the poorly urbanized micro-regions/districts.

With some simplification we can divide the development paths of these micro-regions/districts into three groups, and these can hardly be separated from what we have said about the urbanized micro-regions/districts. Dynamic development is most characteristic of the Győr-Moson-Sopron County micro-regions/districts. The development path of the *Mosonmagyaróvár micro-region/district* found here is very similar to that of the Győr district/micro-region, thus presumably here too the proximity to the border (more precisely, the M1 motorway, and the main rail line № 1) are highlighted as the driving force behind development. In other words, as in the case of Győr, we find that the Mosonmagyaróvár micro-region already had a relatively favorable position in 1996 (43rd place), but later – primarily in the period after joining the European Union – it was able to improve even on this position: by 2013 it was Hungary's 23rd most developed district, which –

Table 7

**Principal component scores and ranking of less urbanized micro-regions/districts  
in the West Transdanubian Region, 1996, 2004 and 2013**

1996	Principal component score, ranking	2004	Principal component score, ranking	2013	Principal component score, ranking
Keszthely-Hévíz	1.89066 (6th)	Keszthely-Hévíz	1.37057 (22nd)	Mosonmagyaróvár	1.21265 (23rd)
Kőszeg	0.79045 (31st)	Csepreg	0.9745 (30th)	Keszthely	1.1181 (25th)
Mosonmagyaróvár	0.37827 (43rd)	Kőszeg	0.87657 (35th)	Kőszeg	1.05335 (26th)
Szentgotthárd	0.37313 (44th)	Mosonmagyaróvár	0.60538 (46th)	Pannonhalma	0.86124 (32nd)
Sárvári-Répcelak	0.104 (59th)	Körmend	0.25978 (58th)	Szentgotthárd	0.63513 (46th)
Körmend-Őriszentpéter	0.08393 (60th)	Sárvár	0.22599 (60th)	Sárvár	0.50686 (50th)
Celldőmölk	-0.11486 (71st)	Szentgotthárd	0.13648 (69th)	Kapuvár	0.44139 (57th)
Lenti	-0.14331 (73rd)	Kapuvár	0.07619 (72nd)	Csorna	0.34684 (60th)
Kapuvár	-0.16977 (74th)	Pannonhalm	-0.06947 (77th)	Körmend	0.33237 (62th)
Csorna	-0.56704 (91st)	Csorna	-0.1228 (78th)	Tét	0.09135 (74th)
Zalaszentgrót	-0.69226 (101st)	Lenti	-0.14419 (79th)	Celldőmölk	0.04732 (77th)
Letenye	-0.75196 (102nd)	Celldőmölk	-0.17219 (82nd)	Lenti	0.00142 (80th)
Vasvár	-0.97924 (113th)	Zalaszentgrót	-0.28253 (93rd)	Zalaszentgrót	-0.28949 (98th)
		Tét	-0.41817 (100th)	Letenye	-0.53924 (111th)
		Letenye	-0.6116 (111th)	Vasvár	-0.58028 (114th)
		Őriszentpéter	-0.7271 (122nd)		
		Vasvár	-0.88112 (133th)		

Source: Author's calculation based on KSH 2013.

in view of the large number of districts that became independent of the Budapest agglomeration in 1998 – suggests even greater progress than the raw data describes. The advances in the *Pannonhalma micro-region/district*, which were heavily influenced by the suburbanization process in Győr (in 1996 it was still part of the Győr micro-region, in 2004 it had a below-average level of development in 77th place, however by 2013 it became the 32nd most developed Hungarian district) can be characterized similarly. Also worth mentioning are the *Csorna and Kapuvár micro-regions/districts* located between Győr and Sopron: although they did not approach a level of development similar to Mosonmagyaróvár or Pannonhalma in 2013, the improvement in relative ranking (also starting at a below-average level in 1996) is remarkable in these cases as well. In Győr-Moson-Sopron County even *the district/micro-region of Tét*, which is the most distant from the Austrian border, showed a significant improvement: throughout the period under examination it went from a below-average micro-region to an averagely developed district.

In contrast, the micro-regions/districts of Vas County are characterized by a large spread in their development levels, and stability in their development rankings. As a rule of thumb it can be said that the proximity to the Austrian border and to the county seat of Szombathely more or less determine the development level of the individual micro-regions/districts in Vas County, except perhaps in the cases of the Celldömölk- and Óriszentpéter-centered micro-region. The *Celldömölk-centered* one is a typical remote from the border – and remote from the county seat – micro-region/district. However, since Celldömölk is one of the most important West Transdanubian railway junctions, the micro-region/district took moderate advantage of its favourable transportation-geographic location: throughout the period under examination it remained an average developed micro-region/district. In contrast is *the Óriszentpéter-centered micro-region* which is near the Austrian border but due to its particular settlement structure is nevertheless on the periphery of development. As for the development dynamism, smaller, less spectacular development than in the case of our Győr-Moson-Sopron examples can only be seen in the regions around the Szombathely area. Thus *the micro-region/district centered around Sárvár* gradually went from an averagely developed micro-region to a medium well-developed district during the course of the period under examination. Incidentally, the most developed (*Kőszeg, Szentgotthárd*), the average (*Körmend, Celldömölk*), and the least developed (*Vasvár*) micro-regions/districts more or less maintained their positions in a stable manner. *The micro-region of Csepreg*, under the effect of the suburbanization process in Szombathely, joined the list of most developed micro-regions in 2004, while the least developed was the traditionally lagging, peripherally situated Órség, with its center Óriszentpéter. The latter two did not become a district when the system of districts was developed, so we cannot review their development paths in the current study.

Finally, the poorly urbanized *Zala County micro-regions/districts*, similarly to the circle of cities with county rights mentioned here, did not perform well either regarding their development levels, or their development dynamism. The only exception is the *Keszthely* (in 1996 and in 2004: the Keszthely-Hévíz) *micro-region/district*, consistently considered one of the West Transdanubian region's

most developed micro-regions/districts, but with regards to the characteristics of this area, perhaps it is best thought of as belonging to the Balaton shore micro-regions/districts rather than the region we are examining. Other than this, the examined units located here (with the exception of the 2013 results of the district of Lenti), were not able to achieve even the average level of development of Hungarian micro-regions/districts. And this is true not only for the inner periphery of the *Zalaszentgrót-centered micro-region/district* that is far from the border, but also for the *Lenti and Letenye micro-regions/districts* which border on Croatia.

## Conclusions

From the results of our examination we can conclude that the permeability of borders has a positive effect on the development of the areas along the border. After the democratic transformation, when the Austrian-Hungarian border became firstly a semipermeable, and later an open border, significant development has been detected in the area of the Hungarian West Transdanubian Region. However, this development process is far from homogeneous. Micro-regions/districts of the traditionally most advanced Győr-Moson-Sopron county show a more dynamic development than those of the moderately developed Vas County or the poorly developed Zala county. Moreover, development levels and dynamism of the West Transdanubian micro-regions/districts are also connected with their border status and degree of urbanization. Thus we found that the micro-regions/districts that are directly on the Austrian-Hungarian border – especially those whose urban center is a city with county rights – have more favourable positions than those which are less urbanized and remote from the border. Finally, it is important to remark that the results of the micro-regions/districts that are close to the Croatian (or less characteristically: the Slovenian), and not the Austrian border, are decidedly poor. It seems that the developmental effect of the Austrian border (in the European Union and totally open since 2007), and the Croatian border (only in the European Union since 2014, but still not part of the Schengen Area) have a qualitative difference, and themselves may illustrate the complexity of the (micro-)regional effects on the development of the Western borders.

## SOURCES

---

1. *Regional Statistical Yearbook 1996*. KSH, Budapest 1997.
2. *Regional Statistical Yearbook 2004*. KSH, Budapest 2005.
3. *Regional Statistical Yearbook 2013*. KSH, Budapest 2014.
4. *Területi atlasz – Járási rendszer*. (Regional Atlas – District System) Available: [https://www.ksh.hu/teruleti\\_atlasz\\_jarasok](https://www.ksh.hu/teruleti_atlasz_jarasok) (accessed: 8 September, 2015).

## REFERENCES

1. Buskó, T.L. (2012). Néhány megjegyzés a hazai kistérségek 2009/2010. évi komplex fejlettségi rangsorának meghatározásához [A Few Remarks on Determining Complex Development Ranking in Domestic Micro-Regions]. In: A. Reisinger (ed.). *Széchenyi István Egyetem Kautz Gyula Gazdaságtudományi Kar Évkönyv 2012*. Győr: SZIE.
2. Buskó, T.L. (2014). Az államhatárok átjárhatóságáról – politikai földrajzi vázlat [On the Permeability of State Boundaries – A Political Geographical Outline]. *Acta Humana: Emberi Jogi Közlemények*, vol. 2, n. 4, pp. 21–38.
3. Hardi, T. & Nárai, M. (2001). A határ menti területek jellegzetességeinek átalakulása a 20. század végi Nyugat-Magyarországon (The Transformation of the Characteristics of Border Regions at the End of the 20th Century in West Hungary). *Tér és Társadalom*, vol. 15, n. 2, pp. 107–129.
4. Hardi, T. (2005). Grenzüberschreitende Pendlerei, Erwerbstätigkeit im Österreichisch-Ungarischen Grenzraum [Transborder Commuting, Employment on the Austrian-Hungarian Border Region]. *Tér és Társadalom*, vol. 19, n. 2, pp. 199–218.
5. Nárai, M. & Rechnitzer, J. (eds.). *Elválaszt és összeköt – a határ. Társadalmi-gazdasági változások az osztrák-magyar határmenti térségben* [Separates and Joins – the Border. Social and Economic Changes in the Austrian – Hungarian Border Area]. Pécs-Győr: MTA RKK.
6. Rechnitzer, J. (2005). Vergangenheit und Gegenwart der grenzüberschreitenden Kooperation im Österreichisch Ungarischen Grenzraum [The Past and the Present of Austrian – Hungarian Transborder Cooperations]. *Tér és Társadalom*, vol. 19, n. 2, pp. 135–162.