The role of tourism in the development of border regions in Hungary

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bstract: Following the changes of regimes in Central Europe, research into border regions has been increasingly adverted. However, various suggestions of researchers came into light on the definition and role of borders. Prior to the changes of regimes, the development of cross-border tourism was counterworked by administrative tools resulting in settlements in border regions becoming peripheral. Negative effects emerged mostly at border sections demarcated between countries either not able to join (for some reason) or not willing to gain access to the European Union and certain member states (occurring at the Ukrainian, Serbian, Belarusian and, in some cases, the Croatian border). In the field of cross-border cooperation, within the tourism industry, a west-to-east and north-to-south gradient can be detected that, by the present logic, can be explained by the changes of economic circumstances and the succession of European Union accession.

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1. Introduction

Following the changes of regimes in Central Europe, research into border regions has been increasingly adverted. However, various suggestions of researchers came into light on the definition and role of borders. Below, an overview of the most relevant theories and functions of borders as well as on border studies will be given.

According to the theory by Haggett (1979), the features of border regions are connected to the development of borders. By the author, three types of borders are distinguished as subsequent boundaries, antecedent boundaries and super-imposed boundaries. In case the border is demarcated after a given ethnic group is settled down and these coincide, subsequent boundaries are mentioned. When the border was established after the settlement and the ethnic group are adjusted to this line, the border is an antecedent boundary. When the border line does not fit into the ethnic group's line of settlement, such are superimposed boundaries.

Ratti's theory is based on the functions and the impact of borders (Ratti 1993). By the author, closed, filtering and opened borders are distinguished. A closed border will fundamentally determine the given area's regional characteristics as a border with rather limiting features will intensify peripheral processes (Houtum Van 2000). As a consequence of long-term closed ness, cross-border regions become, from the aspects of both geography and socio-economics, peripheral areas (Ratti 1993). Such regions have basic features as transmigration, ageing and lower living conditions. Filtering borders have a role of filtering disadvantageous elements and by this protecting the region's own, internal economy and living standards (Hardi-Rechnitzer 2003). Those residing along such borders are attracted by certain particulars of the neighbouring country (lower prices, higher living standards etc.), thus illegal trade, smuggling and also shopping tourism can be frequent along the border (Süli-Zakar et al., 1999, Michalkó 2004). An unlimited flow of population, labour force, capital and services, the fall down of administrative limitations are achieved at opened borders, thus cross-border regions at both sides will satisfactorily develop making up an integrated economic area.

According to Nemes Nagy (1998), the meaning of borders in everyday life is related to a content of dividing line, end or the rim of something and by this includes peripheral features. Thus basically 4 important functions of borders are emphasized: division, connection, conflict and filtering that can be present in a concentrated, sporadic, linear and zonal form.

The model by Martinez is based on the interrelationships developed between the two sides; his studies were primarily carried out at the U.S.-Mexican border

(Martinez 1994). According to this theory, alienated, co-existent, independent and integrated border regions exist. Their socio-economic features vary according to the intensity of such relations.

Frontier and boundary are distinguished by Mező. Frontier is an imaginary border zone where a given civilisation meets the area not yet influenced whereas a boundary (political border) will also include the area demarcated (Mező F. 2000).

By Hansen and Ratti (1993), border regions are assessed as areas for which socio-economic life is significantly influenced by being situated in the proximity of an international border. Based on this, border regions found along a national border and in a peripheral situation characterized by centripetal forces towards the inner regions of the country as well as cross-border regions where the peripheral situation becomes central and connective and can be described by centrifugal forces are distinguished.

Border regions and cross-border cooperations in Europe are classified into three types (Sersli-Kiszel 2000). The first type has been developed in a Western European environment and is exclusively a feature of this region with several common features as a relative backwardness (underdevelopment) to its environment, high unemployment within the country as well as underdeveloped infrastructure. Such are the French-Italian or the Spanish-Portugal borders. The second type is a somewhat modified version of the above with the difference being that problems originate, in general, in the cross-border planning (environmental, infrastructural or border stations) deficiencies of the neighbouring regions. The third type includes countries either not only bordering EU countries or even themselves are not as such. This type can be further divided into three subtypes. The first includes the border regions of nations classified as among the developed regions of the continent as e.g. Austria, Switzerland, Norway or Finland. The second subgroup, the so-called Central European type includes the border regions of the Czech Republic, Poland, Slovakia, Slovenia and Hungary, whereas the third one is the so-called Eastern European type with the Baltic States, the European member states of the former Soviet Union and the countries of the Balkan Peninsula). These areas can be described by peripheral features; they are basically the peripheries of the periphery (migration, ageing, and high unemployment).

A model of cross-border relations and border regions of the Eastern Central European post-socialist countries was created by Tóth J. (1996). By his model, a perfectly closed and controlled border line is assumed that was dependent on the rather centralised power and decisions of the countries involved (Kovács 1990).

During the beginning of the 20th century, in the Austro-Hungarian Monarchy, the freedom to travel within the borders of the empire was provided to everyone (Bagdi

2007). The Monarchy had borders with 7 countries, namely the German Empery, Russia, Romania, Serbia, Montenegro, Italy and Switzerland. The new state borders demarcated after World War I divided the previously integral state formation into fragments also pulling apart the formerly developed economic and tourism connections. Hungary lost more than two third of its territories and became bordered by 4 countries that (against Hungary) underwent significant area accruals (i.e. Czechoslovakia, Romania, the Serb-Croat-Slovene Kingdom and Austria). Following the closure of borders, the previously integral Carpathian Basin was resolved. The developing regional and town twinning connections became demeshed, catchments areas were transformed and international relations with the newly established countries reached their lowest ebbs. The situation was further worsened by Hungary's role taken in World War II, its defeat and the succeeding treaty.

2. The role of tourism in the development of border regions

2.1. General socio-economic features of border micro-regions

The classification according to which 174 micro-regions are found in Hungary has been in force since September 2008. Of these 174 micro-regions, 49 are located along the state border (Figure 1).

micro-regions
cross-border micro-regions

Figure 1 -The system of micro-regions in Hungary

In the first part of our research, we intended to explore, by applying statistical indicators, to what extend the situation of border micro-regions is different from other micro-regions and the national average.

Table 1 - Main statistical indices

Index	Border micro-regions	Other micro-regions	Hungary
Population, 2008 (2000=100)	96.8	98.8	98.3
Population density	81.4	118.6	107.8
Migration balance per thousand inhabitants, 2000-2008	-1.5	0.4	0.0
Unemployment rate, 2008	9.9	6.3	7.1
Number of operating enterprises per thousand inhabitants, 2007	55.7	72.0	68.4
Number of inhabitants per hundred flats, 2008	241.5	231.1	233.3
Per capita income in the percentage of the national average, 2008	85.6	104.1	100.0

Border micro-regions cover 29% of Hungary's area while 21.9% of its population as on 1 January 2009. Based on the most important statistical indicators, they unequivocally can be classified as backward micro-regions as low population density, significant transmigration, high unemployment rate, low disposition to entrepreneurship, high inhabitant density and unfavourable income status are among their features (Table 1). It is worth of elaborating how uniform this group of micro-regions can be considered and what regional differences can be observed.

2.2. Spatial differences within the study periods

The question whether these micro-regions should be studied jointly or a classification in accordance with the national borders is entirely contingent thus differences among border micro-regions are so significant that such classification has no raison d'être is arisen. Consequently, as a next step, we focused on the rate of spatial differences between border micro-regions and the other micro-regions by using data for the period between 2001 and 2008.

In this present research, Hoover index frequently applied in Hungarian studies was used. On a scale 0 to 100%, it indicates the percentage of a given

parameter (in this case, the income making the basis for personal income tax) that should be redeployed among the given micro-regions to have its distribution exactly in accordance to the distribution of the other parameter examined (i.e. population) among the micro-regions. Its formula is:

$$h = \frac{\sum_{i=1}^{n} |x_i - f_i|}{2n}$$

where x_i and f_i are partition ratios (in this case the share of the population and incomes of micro-region 'i' from the total population and total incomes of the given section), to which the following two equations can be applied: $\sum x_i = 100\%$ and $\sum f_i = 100\%$.

As seen above, 49 of the country's micro-regions are classified as border micro-regions. In order to obtain comparability for differences between them and the remaining micro-regions, the calculated Hoover indices were divided by the number of micro-regions for each group and multiplied by one hundred. Therefore, in our study, average spatial differences per micro-region were introduced.

Table 2 - Average Hoover indices for the differences
in the level of development

Year	2001	2002	2003	2004	2005	2006	2007	2008
Border micro-regions	0.28	0.28	0.27	0.27	0.26	0.26	0.25	0.25
Other micro-regions	0.11	0.10	0.10	0.10	0.10	0.10	0.09	0.09
National average	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07

As indicated by the data in Table 2, spatial differences are significantly higher among border micro-regions compared to other micro-regions or to the national average. Although border micro-regions, similar to the national tendency, witnessed a considerable decrease in spatial differences between 2001 and 2008, they have remained to be rather outstanding.

As a second approach, instead of incomes, guest nights of public accommodations were applied. In this respect, it can be concluded that spatial differences in tourism on the micro-regional level, on the national average, are

significantly higher compared to the level of development (Table 3). Moreover, an especially high concentration can be observed among border micro-regions, consequently such micro-regions should be classified based on certain aspects in order to have differences within each group better indicated.

Table 3 - Average Hoover indices for the differences in tourism

Year	2001	2002	2003	2004	2005	2006	2007	2008
Border micro-regions	0.80	0.79	0.79	0.82	0.82	0.83	0.85	0.85
Other micro-regions	0.38	0.38	0.37	0.38	0.39	0.38	0.38	0.38
National average	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.28

2.3. Cluster analysis to classify micro-regions from the aspect of tourism

As a next objective, our research focused on how, from the point of view of tourism, the micro-regions studied can be distinguished beyond the significant spatial differences represented above as well as on to define the most relevant groups and the differences among them (Dávid-Baros 2007). To explore this, data sets for the period between 1990 and 2008 were compiled and 5 indicators, namely capacities of public accommodation facilities, domestic and international guests and guest nights of public accommodation facilities were applied. For the data compiled, a mean value was determined for the entire period followed by a standardisation prior to beginning the research.

Then, cluster analysis was carried out for the above 5 indicators. By applying cluster analysis, our results and the statistical study of the division of objects comprising the heterogeneous population into homogenous groups can be demonstrated simultaneously. Such groups are called clusters. The objective of cluster analysis is to classify objects into homogenous groups disjunctive for each pair and covering the entire carrier. In our study, among the non-hierarchal methods of cluster analysis, K-means algorithm was applied. K-means algorithm classifies each element to the cluster that has a mid-point closest to the given element.

Two micro-regions are classified into Cluster 1, i.e. the micro-regions of Szeged and Győr (Figure 2). The centres of both micro-regions are also regional centres in Hungary. Due to the economic, political and administrative role of the two

large towns, these two micro-regions are somewhat distinguished from other border micro-regions. From the point of view of tourism, it can be claimed for both micro-regions that they are, for all 5 indicators taken into account, well ahead to border micro-regions.
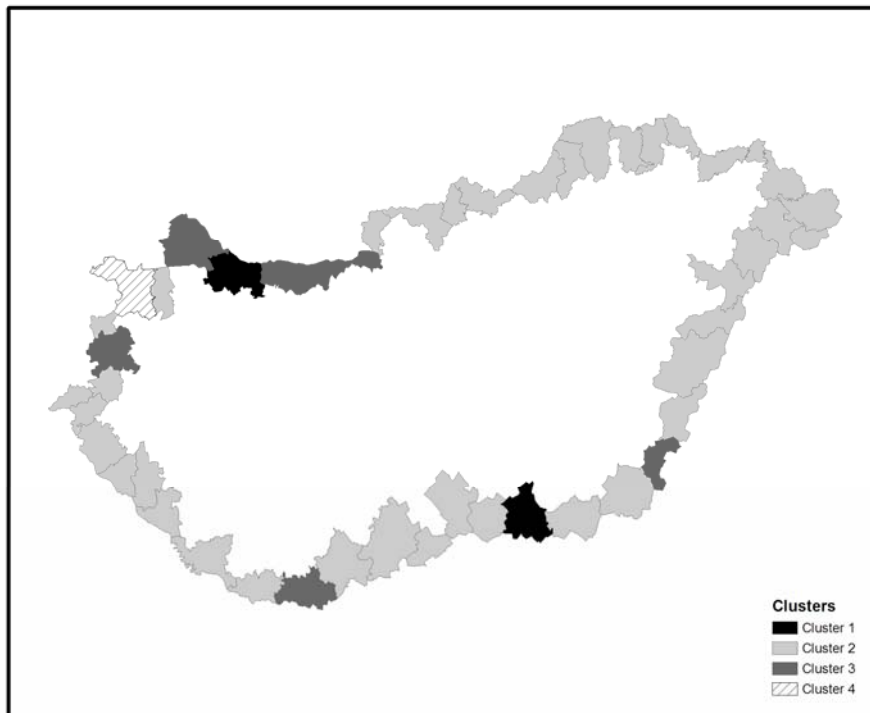

Figure 2 - Final results of the cluster analysis

Cluster 2 includes a significantly higher number of micro-regions with the vast majority of border micro-regions, i.e. approximately 39 micro-regions. As their general feature, a low value for all 5 tourism indicators is observed.

7 micro-regions are classified into Cluster 3 all of them, with only one exception, located in the western part of the country. Capacity and international guest nights exceed the average.

Finally, Cluster 4 contains only one micro-region, i.e. that of Sopron-Fertőd. Here, for all indicators, extremely high values even exceeding those of micro-regions classified into Cluster 1 can be seen.

Table 4 - Main indicators for tourism, 2008 (2000=100)

Area	Capacities	Domestic	International	Domestic	International
		guests		guest nights	
Cluster No. 1	181.1	145.8	60.4	191.5	75.1
Cluster No. 2	217.7	122.7	37.8	159.1	54.5
Cluster No. 3	177.6	158.7	63.2	216.5	76.0
Cluster No. 4	191.9	190.5	82.5	254.1	164.4
Border micro-regions	192.7	148.4	58.6	197.9	78.6
National average	162.0	257.4	103.6	292.8	92.9

Based on the clusters obtained, a more detailed study on the most relevant processes related to border micro-regions can be carried out. As indicated by Table 4, the increase of capacities in the border micro-regions significantly exceeded the national average in the period between the changes of regimes and today. Unfortunately, the situation is considerably more unfavourable regarding turnovers as the number of domestic guests increased to a lower extent coupled by a more intensive drop in the number of international tourists for the study period compared to the national average.
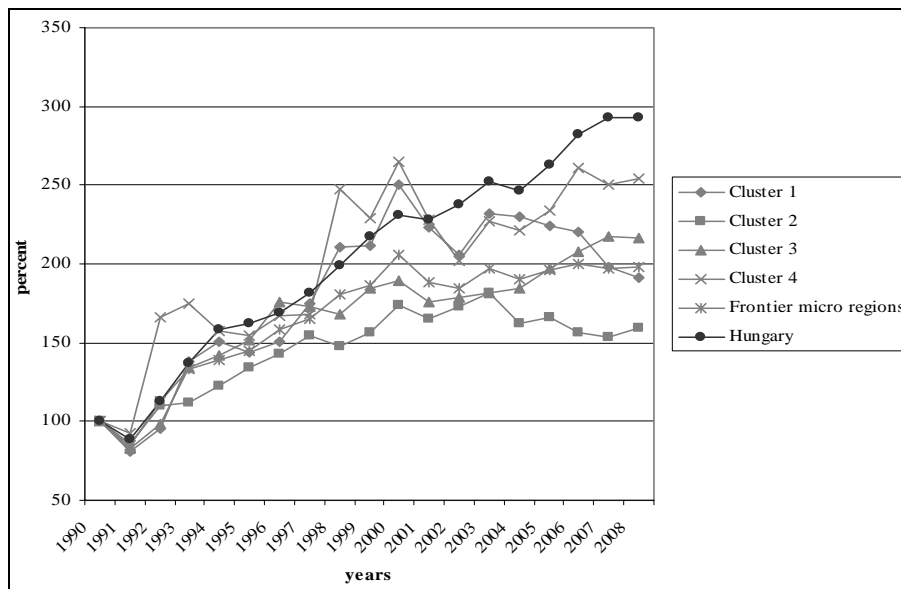
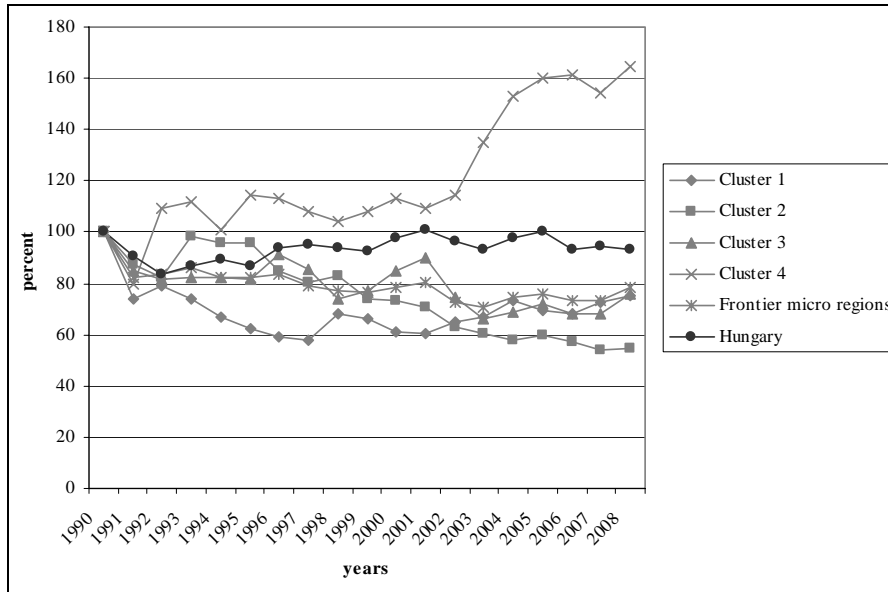

Figure 3 - Number of domestic guest nights, 2000=100

Figure 4 - Number of international guest nights, 2000=100
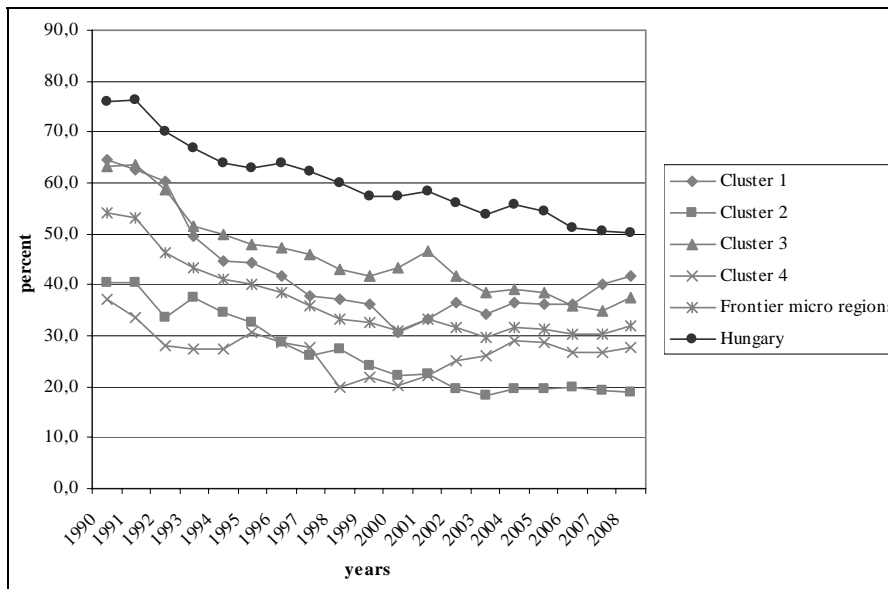

Figure 5 - The share of international guest nights, 1990-2008, %

After having Figures 3, 4 and 5 studied, it can be concluded that since 1990, for the number of domestic guests, a continuous and intensive increase is indicated while for the number of international guests, along with significant fluctuations, a fallback can be observed in Hungary.

For border micro-regions, the growth of dynamics of domestic guest nights is lower compared to the national average that could be approached only by the Micro-region of Sopron-Fertőd included in Cluster 4 with the most advanced situation. Regarding the number of international guest nights, for border micro-regions, the fallback was even more significant compared to the national average with the only exception being the micro-region classified into Cluster 4.

The share of international guest nights in the border micro-regions is significantly behind, by more than 20 percentage points the national average. Unfortunately, for all 4 clusters, a negative tendency can be observed with no difference seen in this respect between border micro-regions and the national average.

2.4. Competitiveness in the border micro-regions

Based on the basic data of capacity and overturns, primarily negative tendencies can be mentioned for the border micro-regions examined. However, it was suggested that closer correlations should be also studied in more detail, thus tourism competitiveness of micro-regions was also focused on.

A wide range of international literature on regional competitiveness is available, mainly due to the works of Michael Porter (see, among others Porter 1996; 1998, 1999). Tourism competitiveness related publications have also been released in recent years (Schroeder 1996; Enright – Newton 2004), however in this present paper the focus was, somewhat differently, on potential measurement methods.

On the potential methods for the measurement of regional competitiveness, a number of remarkable studies have been carried out in recent years of which results are applied in this present paper. These works give a review on how relative residential incomes can be desaggregated into the product of quantifiable social-economic factors with distinct content. (Lengyel, 2000; Nemes-Nagy, 2004). In this paper, on the one hand, by applying the approach by this latter author and, on the other, similarly by applying the method of desaggregation, the authors intended to study tourism competitiveness and its components in the tourism regions of Hungary.

After some mathematical modifications conducted (logarithms of values will have to be applied), the product is transformed into a more easily manageable sum as according to the formula below:

$$log(\frac{GDP}{Number\ of\ population})=log(\frac{GDP}{Number\ of\ employed})+log(\frac{Number\ of\ employed}{Number\ of\ active\ aged})+log(\frac{Number\ of\ active\ aged}{Number\ of\ population})$$

In our study, the micro-regions' total incomes from public accommodation fees, the number of guest nights and capacities and the number of inhabitants were used. An adequate estimation can be obtained for the level of development of the given micro-regions' tourism by the income from accommodation fees per capita, for efficiency by the income from accommodation fees per guest night, for the capacity per capita by the number of guest nights per bed and for the encasement of the micro-region's tourism by the number of beds per capita.

The basis of our classification was the relation of the values of certain micro-regions to the national average for specific incomes from accommodation fees as well as the three resolving factors (Tóth-Dávid 2010). Returning to the definition of competitiveness, regions with residential incomes above the average are regarded as with competitive advantage while those below the average are with competitive disadvantage. Within this, complex competitive advantage is also assessed where the given region indicates values for all three components of residential incomes exceeding the average whereas competitive advantage is of multi- or one-factorial when this presupposition is fulfilled for two or one factor. The features of competitive disadvantage are interpreted analogically.
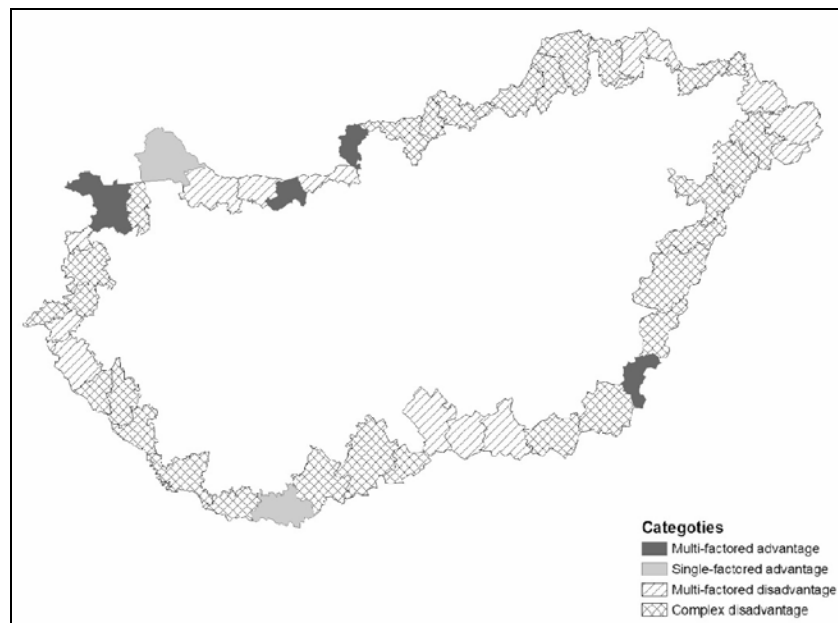

Figure 6 - Tourism competitiveness types in the border micro-regions of Hungary, 2008
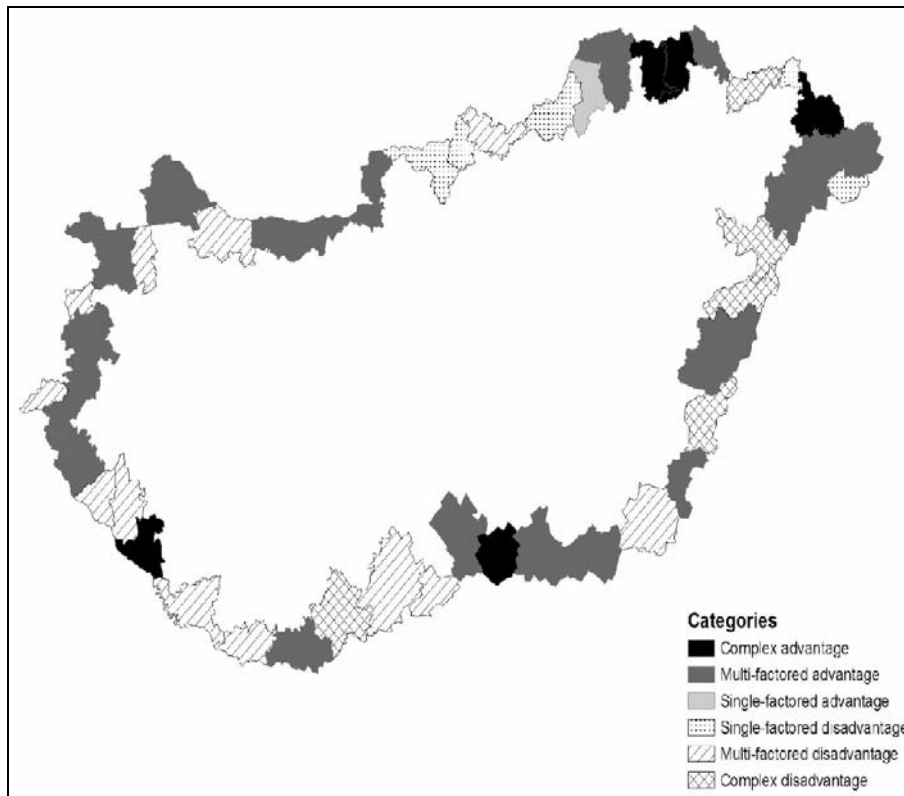
Figure 7 - Tourism competitiveness types in the border micro-regions of Hungary, 2000-2008

Based on the results of the static competitiveness study carried out in 2008, the overall picture drawn from the cluster analysis can be slightly modified (Figures 6, 7). From the point of view of tourism, 6 micro-regions of Hungary can be considered as competitive. Of these 6 micro-regions, 5 are located in the western part of the country and only one, i.e. the Micro-region of Gyula is situated to east of the River Danube. No complex advantage is observed for any of the border micro-regions while for four of them a multi-factored and for two, single-factored advantage was detected. The vast majority of micro-regions (43) were found with disadvantage also in this research. Among them, in 29 micro-regions complex while in 14 multi-factored disadvantage was observed.

In order to study changes taken place between 2000 and 2008, dynamic research was carried out. (The term 'dynamic research' was used by József

Nemes Nagy. It should be noted however that such calculations should not be considered as really dynamic as by applying them, not the entire period is analysed but its first and final years are compared.)

In this context, it is unequivocally seen that the picture indicated by border micro-regions is not as disadvantageous as represented above. In more than half of the border micro-regions (27) dynamics considered to be more advantageous compared to what observed for the national average is seen thus they can be regarded as competitive. Among the micro-regions indicated, there are 5 micro-regions with complex advantage with only one of them located in the western part of the country. In addition to this, multi-factored advantage was observed for 21 micro-regions and single-factored for 1 micro-region. Among the 22 micro-regions with disadvantage, 5 can be described as with single-factored, 12 with multi-factored and 5 with complex disadvantage.

3. Conclusions

After having our results summarized, it can be claimed that while studying cross-border tourism, conclusions typical not only for Hungary but also for countries of the Central Eastern Europe were reached.

The European Union accession of the region's countries had a positive impact on the development of cross-border tourism.

Prior to the changes of regimes, the development of cross-border tourism was counterworked by administrative tools resulting in settlements in border regions becoming peripheral. During the 1990s, attempts were made at all these locations in order to change this peripheral situation as well as to establish good relations with countries previously accessing the European Union. Thus, as concluded the best cooperations in cross-border tourism developed between countries already being EU members (e.g. between Austria and Hungary).

European Union's financial resources also played an important role in the emergence of cooperations (pre-accession funds then the joint PHARE CBC, Interreg and Territorial Cooperation programs).

Joint approaches were further facilitated by cooperation formed already during the 1990s (euroregions, associations) whose establishment was also supported by the European Union.

According to the results of our surveys, countries wiling to gain access were not blocked from each other by Schengen borders as they received facilitations in cross-border tourism. The eastward drifting of Schengen borders and the cease

of former state borders further advanced the development of joint tourism partnerships.

Negative effects emerged mostly at border sections demarcated between countries either not able to join (for some reason) or not willing to gain access to the European Union and certain member states (occurring at the Ukrainian, Serbian, Belarusian and, in some cases, the Croatian border).

In the field of cross-border cooperation, within the tourism industry, a west-to-east and north-to-south gradient can be detected that, by the present logic, can be explained by the changes of economic circumstances and the succession of European Union accession.

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