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FUNCTIONAL REGIONS IN EAST-CENTRAL EUROPE DEFINED ON THE BASIS OF THE FREQUENCY OF PUBLIC BUS TRAFFIC

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The present paper has the intention to dispute functional regions based on the frequency of public bus traffic as documented by the map Communications 1 - Bus Traffic (1:2 000 000) published in the Atlas of Danubian Countries. Connecting all points of the lowest value of the frequency of bus traffic between the centre in question and neighbouring centres the catchment area of macro- and mesoregional centres was delimited.

Key words: functional region, public bus traffic, East-Central Europe, Atlas of the Danubian Countries

1 METHODOLOGICAL REMARKS

1.1 The importance of defining functional regions

Delimitation of functional regions in the sense of regions the internal relations of which are oriented towards an urban centre or agglomeration is of great current

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importance. Investigations in the extent and shape of functional regions are a precondition for regional planning and regional development in general, for all public measures and private activities on the regional and local level.

But they have a special meaning in a time, when in most countries of East-Central Europe new administrative subdivisons are taken into consideration or are in the process to be implemented. This refers to Poland, Czechia, Slovakia, Slovenia and Croatia, where administrative patterns having essentially been coined by communist policies are going to be replaced by new administrative systems[1]. In Hungary the traditional county system had not experienced so significant changes during the communist era and is not so much under discussion now.

In the discussions on new administrative systems in Poland, Czechia, Slovakia, Slovenia and Croatia historical administrative patterns are playing a major role as well as ethnic and other characteristics of regional identity. Nevertheless, functional relations in the sense quoted above remain a crucial feature. Taking them into account will certainly be most decisive for the sucess of any new administrative subdivision.

1.2 Frequency of public bus traffic as a means of defining functional regions

As a scientific basis for political decision in this respect more recent and topical studies on functional regions are available mainly for Czechia (Hampl et al. 1989), Slovakia (Bezák 1991), Slovenia (Vrišer 1990) and Hungary (Regionale Zusammenhänge 1992).

The present paper has not the intention to dispute these studies or any proposal of a new administrative subdivision, but to submit a pattern of functional regions in East-Central Europe elaborated on the basis of a homogenous criterion. It is certainly only one of many possible approaches and does not cover all aspects to be considered when administrative subdivisions are reshaped, but it might be interesting as an additional aspect when it comes to discussions on functional regions and new administrative subdivisions. This criterion is the frequency of public bus traffic.

Public bus traffic (bus transport available for the public)[6] in general is a very useful means of determining functional regions since it reflects labour commuting, school attendance and daily as well as weekly supply - the main indicators of functional relations. It is of special use for former communist countries, where public bus network was much denser than in the West and frequency of public bus traffic much higher due to a low level of private motorization and the preoccupancy of railway in freight transport. Irrespective of rentability almost every small village had its public bus connection. Frequency gradients in the surroundings of centres were steep due to high peak frequencies near cities and bigger towns, thus providing a good spatial differentiation.

Only rarely "blank spots" and longer route sections of stable frequencies occur, which might raise questions about drawing the boundary of a functional region here or there.

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[1] Croatia implemented in 1993 a county system (županje).

[6] Not included are transport services provided to meet special requirements (of enterprises, institutions etc.).

1.3 The special method applied

The elaboration of functional regions to be presented here is based on frequency of public bus traffic as documented by the map "Communications I-Bus Traffic" in the 1:2 000 000 scale (Jordan 1984), published in 1984 within the Atlas of the Danubian Countries. This map was compiled on the basis of bus time-tables (as of 1980/81) and displays the weekly frequency of public bus services by routes, actual frequencies represented by 14 value classes. All kinds of public bus services are included, short distance and daily commuter services as well as far distance and international services, perennial as well as seasonal services.

The following cartographic method was applied to delimit the functional regions of Czechia, Slovakia, Hungary, Slovenia and Croatia by the help of this map:

1. Identification of macro- and mesoregional centres according to the number of converging bus services and by additional consultation of national central place classifications.

2. Identification of points of lowest bus traffic frequency adjacent macro- and mesoregional centres, resp.

3. Determining the belonging of lower-rank bus nodes in the transitional zone of adjacent macro- and mesoregions to the respective macro- and mesoregional centres by comparing the number of bus services between these and adjacent nodes. Marking the points of weakest traffic around these nodes.

4. Connecting all marked points (points of weakest traffic) by a line.

This method has certain shortcomings:

1. While it is most suitable to define the functional regions of lower rank centres, it looses in validity when it comes to the delimitation of larger functional regions. To define with higher reliabilty of which mesoregions a macroregion is composed it would be necessary to supplement frequency of bus traffic by frequency of railway traffic, taking into account that railway traffic plays a major role over longer distance and in traffic between major centres.

2. Also over shorter distance the regularity and completeness of the pattern of public bus traffic is partly disturbed by highly efficient railway services. This is especially true for the suburban zone of big cities. Thus, the relation Budapest-Cegléd-Szolnok is very well served by railway, the railway substituting bus services completely[7].

3. The classification of cities as macro- and mesoregional centres is somewhat subjective. As already mentioned the overall number of converning bus services was used as a main criterion, supplementary also national studies on functional regions were consulted. It remains nevertheless a question where to put the treshold between macro- and mesoregional and between meso- and microregional centres. Thus, the evaluation of all Hungarian macroregional centres but Budapest might be a matter of discussion. The same is true for Brno and Maribor. It is also a question whether it is justified to consider Karlovy Vary, Liberec, Jihlava, Žilina, Nyíregyháza, Kaposvár or Salvonski Brod as mesoregional centres.

It might be called in question whether a data base of 1980/1981 is appropriate to define topical functional regions. It is probably true that the bus network of today differs

[7] Erdősi (1993, p. 270).

considerably from the network of 1980/1981. But the data of 1980/1981 reflect a state of affairs, when the communist system was not yet subject to as many economic constraints as during the economic decline of the 1980s. Data of 1980/81 might therefore be more complete and nearer to real functional relations than later ones. A second and even more principal question is whether investigations in spatial patterns created by the former command economy have any significance for present spatial planning aiming to meet the new requirements of an emerging market economy. This is certainly a serious argument. But a negative answer would mean, that not only this investigation, but all others in the field of human geography based on documentations and statistical data from before 1990 would be in vain.

2 THE RESULT: THE PATTERN OF FUNCTIONAL REGIONS IN EAST-CENTRAL EUROPE (SEE ALSO MAP)

The enclosed map (Fig. 1) representing functional macro- and mesoregions is only a rough generalization of an original elaboration in the scale of 1:2 000 000. By the following some of its more interesting features are to be highlighted.

Czechia is subdivided into two macroregions (Praha, Brno) instead of one (Brno) as documented by Hampl, Gardavský and Kühnl. The subdivision was not difficult except in the area of Jihlava, Havličkův Brod and Pelhřimov. Besides the evaluation of Karlovy Vary, Liberec and Jihlava as mesoregional centres the functional attribution of southwestern Bohemia is the most disputable case. Especially Strakonice could be attributed to the Prague, Plzeň or České Budějovice mesoregions almost with the same justification.

In Slovakia the rather confined areal extension of the Košice macroregion might be surprising. Even the Spiš region is not included. Compared with the former East-Slovakian region (Východoslovenský kraj) also the larger part of the Rožňava district (okres) is missing. It is a question, whether Nitra and Žilina should be referred to as mesoregional centres. But as far as bus network is concerned they hold even a stronger position than Banská Bystrica. Along the Slovak-Czech border the Czech macroregion of Brno extends to Slovakian territory. The reason is than Hodonín as a major Czech labour centre and bus node right at the common border extends a good half of its catchment area to a part of Slovakia situated "behind" the Carpathians and connected with Slovakian centres only loosely.

In Hungary the justification of Pécs, Szeged, Debrecen, Miskolc, Győr and Szombathely to be called macroregional centres is rather weak. In fact Budapest is dominating the largest part of the country except some peripherical zones in the west, south and northeast. The coherence of the Miskolc and Debrecen regions, in Hungarian literature frequently referred to as a single macroregion, is too weak to be regarded as a unit. Miskolc and Debrecen do not function as complementary centres but each as a solitary centre with comprehensive functions for its region. The situation in the western macroregion is not so different. Also there we are facing not really a partition of functions among the centres Győr and Szombathely, but rather the coexistence of individual regions. But there exists at least a high degree of interconnection making it, e.g., difficult to draw a boundary between the Győr, Szombathely and Zalaegerszeg mesoregions.

Fig. 1. Functional marco- and mesoregions based on frequency of public bus traffic.

Within Slovenia it is quite clear and simple to draw boundaries between macro- and mesoregions. A major question is only the area of Trieste and northwestern Istria. In the bus network of 1980/81 the impact of Trieste on its Slovenian hinterland is not yet reflected. This might be significantly different today. The attribution of the northwestern Croatian corner of Istria was doubtful even on the basis of the 1980/81 data. The region of Buje, Umag and Buzet could be attributed to the Slovenian mesoregion of Koper with almost the same right. A remarkable deviation between functional and country boundaries occurs in the hinterland of Rijeka, where the Slovenian commune of Ilirska Bistrica gravitates to the Croatian macro- and mesoregional centre of Rijeka.

Along the Croatian-Bosnian border further major deviations of functional boundaries from the country border can be observed: one in the Sava Valley, where the Croatian macroregion Osijek includes the Bosnian communes (općine/opštine) of

Bosanski Brod and Derventa; a second along lower Una river, where the Bosnian Banja Luka macroregion includes most of the Croation Banja communes Dvor and Hrvatska Kostajnica; a third in the east of the Lika, where the northern part of the Croatian commune of Donji Lapac belongs to the Bosnian Banja Luka macroregion; the fourth in the Bosnian hinterland of Split, where the communes of Glamoč, Livno and Tomislavgrad (former Duvno) belong to the Croatian Split macroregion; and a fifth in the hinterland of Dubrovnik, where the Croatian Split macroregion comprises 4 Bosnian communes (Trebinje, Bileća, Gacko and a larger share of Ljubinje), although the intensity of this relation is not too high.

To define the functional regions of Austria in the same manner proved to be not possible because of the low density and frequency of public bus transport in Austria.

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Resumé vypracoval Peter Mariot