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Daniel MICHNIAK*, Vladimír SZÉKELY*

RELATIVE ACCESSIBILITY OF DISTRICT CENTRES IN SLOVAKIA BY PUBLIC TRANSPORT IN 2003 AND 2017

Abstract. Transformation of the transport system in Slovakia after 1989 has influenced the pattern of public transport. This article focuses on the analysis of public transport accessibility in district centres in Slovakia. The results show a decrease of connectivity in the network of direct bus and train connections and also a decrease in the number of direct connections between district centres in Slovakia in the period from 2003 to 2017. The main factors that have caused these changes include growing motorisation and individual automobile transport, zero-fare trains for selected categories of inhabitants since 2014, the construction of the motorway network, and the liberalisation of the public transport market.
Key words: public transport, accessibility, direct connections, district centres, Slovakia.

1. INTRODUCTION

The concept of accessibility is one of the basic concepts in human and regional geography. However, it is also one of the most difficult concepts to define. During its several decades of application in geography, there have been a number of understandings and also many different methodological approaches to its study, which were also related to the development of geographical thinking. A relatively flexible understanding of accessibility is advantageous, in terms of the broad possibilities of its application. It is reflected in the existence of a large number of different indicators and measures, with the aim of expressing the meaning of this notion in the most diverse contexts.

* Daniel MICHNIAK, Vladimír SZÉKELY, Institute of Geography of the Slovak Academy of Sciences, Štefánikova 49, 814 73 Bratislava, Slovakia; e-mails: geogmich@savba.sk, szekely@savba.sk

An overview of the different ways of measuring accessibility and the different approaches and applications relating to it were explored in many studies, e.g. Handy and Niemeier (1997), Bruinsma and Rietveld (1998), Halden *et al.* (2000), Spiekermann *et al.* (2002), Michniak (2002, 2014), Geurs and van Wee (2004), Gutiérrez (2009), Komornicki *et al.* (2010), Rosik (2012), Niedzielski and Boschmann (2014) and others. The term 'accessibility' usually refers to the concept of proximity, ease of spatial interaction and the potential contact with various services and activities. Put simply, accessibility can be defined as the ease of reaching a specific location (region) from other locations (regions) using a transport system.

One of the important tasks in studying accessibility is the choice of mode of transport (means of transport). Depending on the mode of transport used, accessibility by public transport and individual transport must be distinguished. Before 1989, public passenger transport had a dominant role in the modal split of the former Czechoslovakia, as well as other socialist countries in Central-Eastern Europe. A significant shift in the demand for different types of transport occurred after 1989. The position of public passenger transport has been influenced by the very fast increase of motorisation levels. The motorisation level in Slovakia increased from 165 cars per 1,000 inhabitants in 1990 to 375 cars per 1,000 inhabitants in 2015. The role of individual transport (mainly personal cars) increased at the expense of public road and railway transport (see Howkins, 2005; Pucher and Buehler, 2005; Lijewski, 2007; Horňák and Pšenka, 2013; Michniak, 2016).

Before 1989, public transport was ruled by the state monopolies: the Czechoslovak State Railways (ČSD) and the Czechoslovak Automobile Transport (ČSAD). Their transformation to companies operating in market conditions was influenced by the division of Czechoslovakia into two independent states. Since the beginning of 1993, Slovakia had to develop its own public transport system in different social, economic, and political conditions. Since 1998, when the political orientation of Slovakia towards accession to the European Union was clearly declared, the transport policy of the EU has significantly influenced the public transport system in Slovakia.

The aim of this paper is to assess the public transport accessibility of district centres in Slovakia, within the network of direct public transport connections in 2003 and 2017, and to identify the factors influencing the changes. The article is organised as follows. We begin by focussing on the problems of the organisation of public transport in Slovakia. Next, the data regarding the public transport connections and methods used is introduced. Attention is paid to the identification of the main changes of public transport accessibility in individual district centres in Slovakia and we compare the situation in 2003 with that of 2017. Finally, we discuss the factors that influenced these changes.

2. CHANGES IN THE ORGANISATION OF PUBLIC TRANSPORT IN SLOVAKIA

The transformation of the state monopoly of public transport (the Czechoslovak State Railways (ČSD) and the Czechoslovak Automobile Transport (ČSAD)) to market-oriented companies was influenced by the division of Czechoslovakia into two independent states.

For a long time, railway transport had been in the hands of the state railway carrier and its transformation was slow. On 1 January 1993, the Czechoslovak State Railways were divided into two separate entities: the České dráhy (Czech Railways – ČD) and the Železnice SR (Railways of the Slovak Republic – ŽSR). ŽSR was established by SR Government decree upon the establishment of a state enterprise. On 1 January 2002, the ŽSR was divided into two separate entities: ŽSR and Železničná spoločnosť (Railway Company – ZSSK) according to the ŽSR Transformation and Restructuring Project. Subsequently, on 1 January 2005, ZSSK was split into the Železničná spoločnosť Slovensko (providing passenger transport) and Cargo Slovakia (providing freight transport) (ZSR 2017). The opening of the passenger railway transport market began in 2012 and the process of liberalisation of passenger railway services has not yet been completed.

The Slovak companies of the Czechoslovak (State) Automobile Transport were divided in January 1994 by transport type and renamed: Slovak Bus Transport (SAD) and Freight Transport (NAD or ND). Bus companies were gradually privatised (mainly between 2002 and 2005) and some of them are in the hands of foreign companies (e.g. Arriva). Nowadays, public bus transport is operated by regional self-governments (NUTS 3 level). Under Act no. 56/2012 Coll. on Road Transport (as amended), the self-governing regions have a legal obligation to provide transport services to the territory of their region by regular suburban bus services. Self-governing regions contract selected transport companies to provide services in the public interest. In 2018, 19 companies provided public bus transport under those contracts. Transport licenses for other companies that provide bus services (on other suburban and long-distance lines) in Slovakia are also the responsibility of regional self-governments and such carriers operate suburban and long-distance bus services on a commercial basis.

However, the organisation of public railway transport lies within the state´s authority, based on the Contract on Transport Services in the Public Interest that exists between the Ministry of Transport and Construction of the Slovak Republic and ZSSK (Železničná spoločnosť Slovensko – state carrier).

The state (Ministry of Transport and Construction of the SR) also creates the conditions for the optimal functioning of public transport at a national level and its regulating measures should contribute to a higher quality of life for its inhabitants. Public transport is one of the services of general interest, defined in the official documents of the EU (European Commission, 2011).

3. DATA ON PUBLIC TRANSPORT CONNECTIONS AND METHODS USED

Slovakia is divided into 79 districts (LAU 1), although 5 of them represent districts within Bratislava (the capital city of Slovakia) and 4 within the city of Košice, which is also the district centre for the Košice-okolie district. There are 71 district centres (DCs) in Slovakia (Fig. 1, Table 1), and each of them can have a maximum of 70 interactions (public transport connections) with other centres. There are 4,970 possible mutual interactions of the district centres in Slovakia.

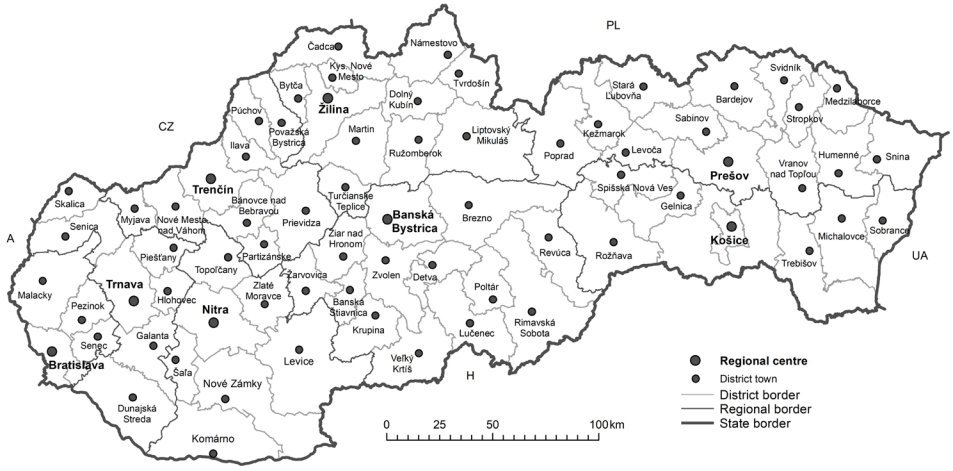

Fig. 1. Districts and their centres in Slovakia

Source: own work.

Table 1. Number of inhabitants in district centres in Slovakia in 2017

No.	Town	Population	No.	Town	Population	No.	Town	Population
1	Bratislava	429 564	25	Topoľčany	25 492	49	Galanta	15 029
2	Košice	239 095	26	Trebišov	24 587	50	Skalica	14 967
3	Prešov	89 138	27	Čadca	24 315	51	Detva	14 751
4	Žilina	80 978	28	Rimavská Sobota	24 010	52	Levoča	14 803
5	Banská Bystrica	78 484	29	Partizánske	22 653	53	Sabinov	12 700
6	Nitra	77 048	30	Vranov nad Topľou	22 589	54	Revúca	12 249
7	Trnava	65 382	31	Dunajská Streda	22 643	55	Veľký Krtíš	12 115

No.	Town	Population	No.	Town	Population	No.	Town	Population
8	Trenčín	55 537	32	Pezinok	22 861	56	Myjava	11 708
9	Martin	54 978	33	Šaľa	22 219	57	Zlaté Moravce	11 583
10	Poprad	51 486	34	Hlohovec	21 715	58	Bytča	11 362
11	Prievidza	46 408	35	Brezno	21 082	59	Svidník	11 096
12	Zvolen	42 476	36	Senica	20 342	60	Stropkov	10 654
13	Považská Bystrica	39 837	37	Snina	20 342	61	Banská Štiavnica	10 097
14	Michalovce	39 151	38	Nové Mesto nad Váhom	20 066	62	Tvrdošín	9 195
15	Nové Zámky	38 172	39	Žiar nad Hronom	19 188	63	Krupina	7 890
16	Spišská Nová Ves	37 326	40	Rožňava	19 190	64	Námestovo	7 876
17	Komárno	34 160	41	Senec	19 410	65	Medzilaborce	6 612
18	Humenné	33 441	42	Dolný Kubín	18 905	66	Turčianske Teplice	6 390
19	Levice	33 332	43	Bánovce nad Bebravou	18 350	67	Žarnovica	6 284
20	Bardejov	32 587	44	Púchov	17 810	68	Sobrance	6 289
21	Liptovský Mikuláš	31 345	45	Malacky	17 430	69	Gelnica	6 099
22	Lučenec	27 991	46	Kežmarok	16 481	70	Poltár	5 693
23	Piešťany	27 666	47	Stará Ľubovňa	16 348	71	Ilava	5 485
24	Ružomberok	26 854	48	Kysucké Nové Mesto	15 132			

Source: SOSR (2018).

The data on direct public transport connections was obtained from online timetables at www.vlak-bus.cz (for 2003) and www.cp.atlas.sk (for 2017). The choice of a specific day and time interval (a representative moment), during which the mutual connections were counted, was the basis for the counting of mutual connections of nodes in a transport network, and their intensity was expressed by the frequency of train and bus connections. To exclude the influence of the different organisation of weekend transport (it also applies to Mondays and Fridays) the equal working days in the middle of the week: Wednesday 10/9/2003 and Wednesday 28/06/2017 were selected for the transport connection analysis.

For this study, two accessibility measures were used. Accessibility measure 1 (*Acc1*) is defined as the existence of direct (bus or train) connections in the direct public transport network for a 24-hour workday (Wednesday). Accessibility measure 2 (*Acc2*) is represented by the frequency (number) of direct (bus or train) connections with other nodes for a 24-hour workday (Wednesday) in the direct public transport network.

The transport connections were counted for both directions and a connection in only one direction (from point A to point B or from point B to point A) was sufficient for the registration of the existence of a mutual connection of two DCs. The acquired values on the existence and the frequency of direct train and bus connections were inserted into matrices that became basic databases for comparative statistical and cartographic analyses.

The basis for the selection of accessibility measures was the definition of accessibility by Ingram (1971) that distinguishes relative and integral accessibility. Relative accessibility is the degree to which two places on the same surface are connected and is represented by *Acc1*. Integral accessibility is the degree of interconnection of one point with all other points on the same surface and is represented by *Acc2*.

The results of this study could be influenced by the territorial-administrative division of Slovakia because there is a difference between the northern part of Slovakia (with smaller districts) and southern Slovakia (with larger districts). The probability of the existence of a connection between two DCs with the same number of inhabitants at a smaller distance is higher than between two DCs at a longer distance.

There could be some debate concerning the role of direct connections for ensuring accessibility to DCs. In many cases, a change of means of transport entails an increase in travel expenses: there are often problems when purchasing tickets for journeys requiring changes, as well as problems with luggage while embarking and disembarking a means of transport, and many potential consequences caused by delays. Direct public transport connections between two towns enable savings in terms of time, uncertainty, and safety. Only direct links can constitute competitive transport links for inter-regional transport, as one or more changes during a single trip from one region to another may act as a time barrier and bring discomfort for passengers (Horňák *et al.*, 2013). Therefore, the analysis of the existence of direct transport connections between locations and regions by public transport is often regarded as one of the basic transport accessibility indicators and is a frequent subject of scientific interest in Slovakia (Székely, 2004 and 2008; Michniak, 2008; Horňák *et al.*, 2013 and 2015; Horňák and Pšenka, 2013). Fan *et al.* (2012) pointed to the fact that direct rail connections are associated with large, statistically significant gains in accessibility to low-wage jobs.

4. DIRECT PUBLIC TRANSPORT CONNECTIONS BETWEEN DISTRICT CENTRES IN SLOVAKIA

A necessary condition for the direct transport connection of any two towns is their formal status as nodes in a transport network. The shape of the railway network is relatively stable in contrast to the more dynamic road network. The railway network in Slovakia has existed for 160 years and the course of the railway lines has been greatly influenced by the natural conditions of the country and by the spatial distribution of the population. In Slovakia, there has been considerable investments in the motorway and expressway network and other roads that ensure access to newly developed areas.

4.1. Direct train connections of DCs

Only 702 direct train connections were identified among the 4,970 theoretically possible direct train connections between DCs in Slovakia in 2017. Compared to the year 2003 (with 798 train connections), their number had decreased by 12%.

It is important to note that 11 DCs (15.5%) in Slovakia have no train connections (Fig. 2). Four peripherally located districts in the northern and eastern part of Slovakia (Námestovo[1], Stropkov, Svidník, and Sobrance) have never been connected to the railway network. Another three districts (Krupina, Veľký Krtíš, and Levoča), do not have regular public transport. District towns of Skalica, Banská Štiavnica, Rožňava, and Rimavská Sobota are located on regional tracks that only have train connections to other municipalities in the proximity of these railways. When passengers want to travel to other DCs, they have to transfer to other trains.

In the period from 2003 to 2017, the connectivity of the majority of DCs decreased. DCs located on the main railway routes (Bratislava – Žilina – Košice) and in Slovakia are characterised by better connectivity in comparison to the worst connected DCs, mainly in the Banská Bystrica and Prešov regions, where transport exclusion is combined with economic and social exclusion (Székely and Michniak, 2018). One exception, which has better connectivity (in comparison to 2003), is the town of Prešov (from 5 to 20 DCs), where the private carrier Leo Express introduced new direct train connections with DCs on the Košice – Prešov – Žilina – Prague route. Another example of connectivity improvement is the town of Malacky in the Bratislava region, where direct trains connecting Malacky and Trnava (through Bratislava) were introduced. Čadca represents a district centre in Slovakia with poor networking to the other district centres, a decrease from 29 in 2003 to 15 in 2017.

The number of direct trains between individual district centres and all other district centres in Slovakia increased by 17% in the period from 2003 to 2017

[1] There is the narrow-gauge track of the Orava Forest Railway (located in the Námestovo district) used for tourist purposes.

(from 10,876 direct trains in 2003 to 13,142 in 2017). The majority of direct train connections between DCs is concentrated on the main railway routes in Slovakia (Bratislava – Žilina – Košice) (Fig. 3) and the international route (Bratislava – Nové Zámky), i.e. from the Czech Republic to Hungary. There is a visible concentration of trains in Zvolen, an important railway node in the central part of Slovakia. Other DCs have a small number of train connections and the inhabitants of those regions can only use bus transport if it is available.

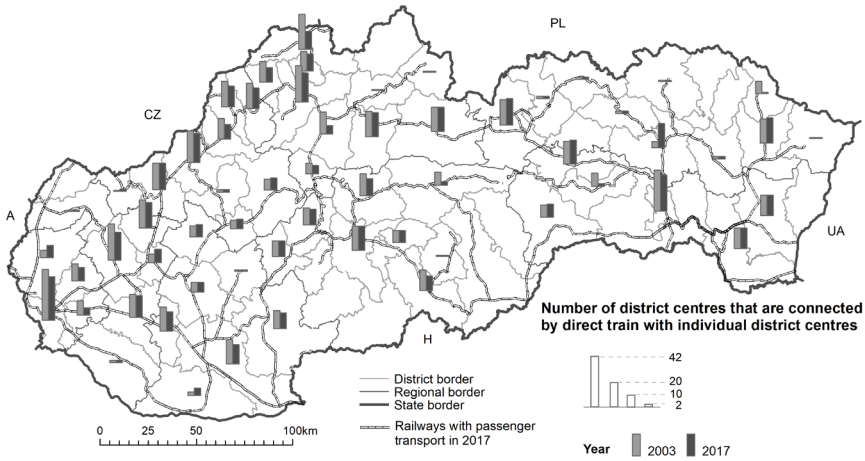

Fig. 2. Number of district centres that are connected by direct trains with individual district centres in Slovakia

Source: own work.

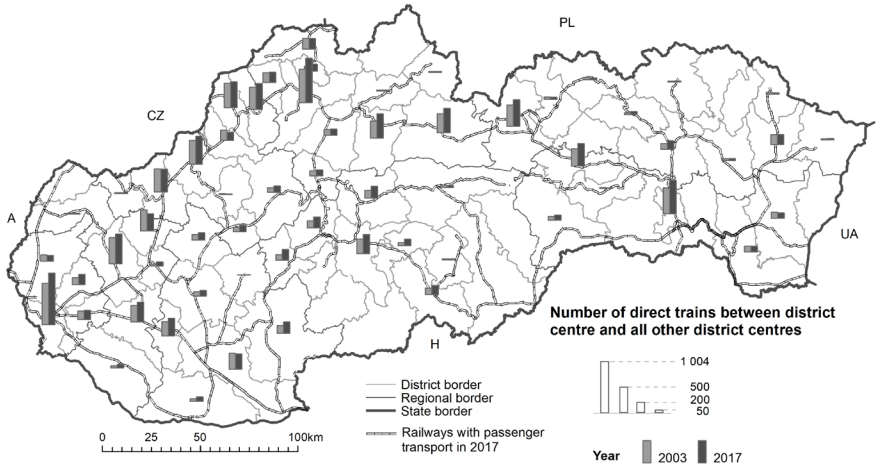

Fig. 3. Number of direct trains between individual district centres and all other district centres in Slovakia

Source: own work.

4.2. Direct bus connections of DCs

DCs in Slovakia are better networked by bus connections than by train connections. In 2017, 1,448 direct bus connections were identified from a maximum of 4,970 theoretically possible direct bus connections of DCs in Slovakia. In comparison to the year 2003, with 2,262 bus connections, their number decreased by 36% and the network of direct bus connections lost more than a third of its connections in the period from 2003 to 2017.

The huge decrease in bus connectivity of DCs was observed in the whole of Slovakia (Fig. 4). The exceptions were four peripheral districts in Eastern Slovakia (Snina, Medzilaborce Humenné, and Sobrance) that only had a few direct buses to other DCs in 2003 and obtained new direct buses to Bratislava and the Czech Republic that served mainly commuters.

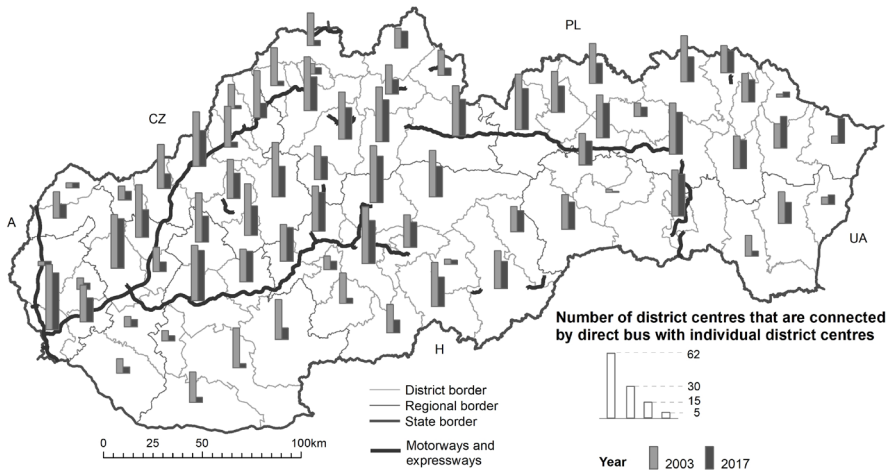

Fig. 4. Number of district centres that are connected by a direct bus with individual district centres in Slovakia

Source: own work.

The regional centres of Bratislava, Trnava, Nitra, Košice, Prešov, Banská Bystrica, and Žilina only had a small decrease in the period from 2003 to 2017 and have the highest connectivity to other DCs. The towns of Ružomberok, Poprad, and Zvolen also have direct connections to other centres at a very good level. Peripherally located small towns, such as Medzilaborce, Sobrance, Gelnica, Poltár, Banská Štiavnica, and Skalica have only direct connections to a small number of other DCs. Centres near Bratislava (such as Malacky, Pezinok, Galanta, Šaľa, and Dunajská Streda) also have limited possibilities when it comes to travelling directly by bus to other centres, but they can use a wide spectrum of direct connections from Bratislava, which is easily accessible from these towns.

The town of Snina is an example of a centre with a substantial improvement of bus services; the number of DCs with a direct bus to Snina increased from 7 in 2003 to 24 in 2017. One of the possible reasons for that change was the re-routing of some long-distance bus connections from eastern Slovakia. DCs in the western and northern parts of Slovakia have better direct bus connections with other DCs, although, in many cases, they lost connections in the period from 2003 to 2017.

An example of worsening connectivity by direct buses is the town of Ilava. The number of DCs with direct busses to Ilava decreased from 39 in 2003 to 5 in 2017. Ilava lost connections to many centres because it became connected to the D1 motorway and, at present, long-distance buses use the motorway without stopping in this small town.

The number of direct buses between individual district centres and all other district centres in Slovakia decreased by 43% in the period from 2003 to 2017, from 35,360 direct buses in 2003 to 19,982 in 2017.

The majority of direct bus connections between DCs is concentrated in the western and central parts of Slovakia (Fig. 5). The greatest number of bus connections are found in Bratislava, Nitra, Zvolen, Banská Bystrica, Prešov, and Košice. DCs in the southern part of Slovakia have only a small number of direct buses to other centres. In the above-mentioned district centres with improved bus connectivity (Snina, Medzilaborce, and Sobrance), the number of connections to other centres is relatively small.

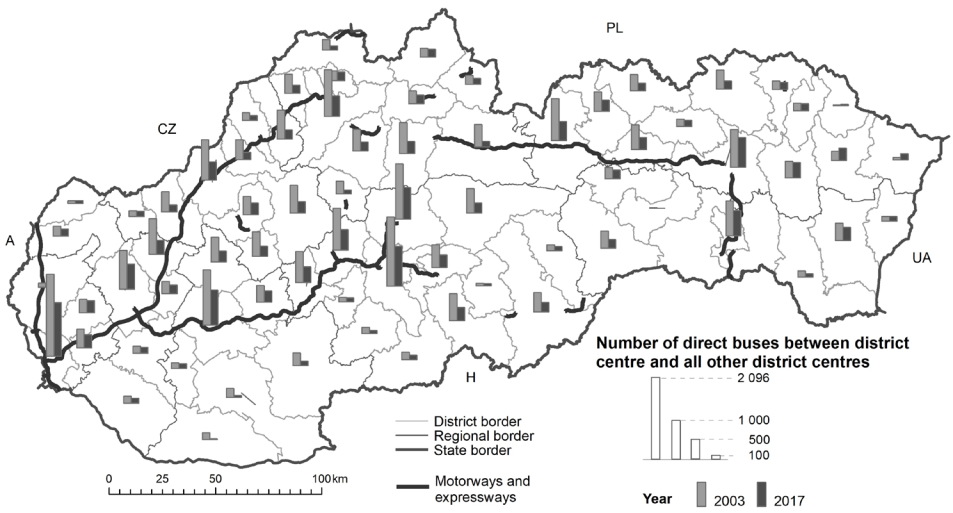

Fig. 5. Number of direct buses between individual district centres and all other district centres in Slovakia

Source: own work.

5. FACTORS OF CHANGES IN DIRECT CONNECTIONS OF DCS BY PUBLIC TRANSPORT

The changes in the direct connections of DCs by public transport for the period from 2003 to 2017 noted above are large and, in many cases, can be regarded as dramatic. In the following part of the article, we will try to answer the question: why there are such changes in the direct connection of DCs.

These changes are the result of many changes in the transport system and the travel behaviour of passengers. There are many important factors.

First of all, after 1989 there was an evident increase in individual automobile transport and a decrease in the importance of public transport in Slovakia, particularly public transport on the road. The decrease of public transport was observable in terms of the number of passengers and also the performance of public transport. The highest increase in individual transport was in the first decade but it grew slowly until 2015 (MDaV SR, 2017).

Railway transport (in terms of public transport) worsened in Slovakia until 2005. This was also related to a decline in the demand for railway transport and the closure of public transport on several regional tracks, with great losses of railway operations. Those railway closures affected railway transport in many regions but they did not influence direct connections between DCs. Then, there was a phase of stabilisation in the railways and, during the last few years, the position of railways improved, especially since 2014. This positive a trend concerning railways is the result of the introduction of the zero-fare public railway transport services for selected groups of passengers. This specific governmental decision is another important factor that influenced the direct public transport connection of DCs.

Zero-fare public railway transport services have been valid on the trains of the state carrier Železničná spoločnosť Slovensko (ZSSK) and on the Bratislava – Komárno route of the private carrier RegioJet since 17 November 2014 (the Day of Struggle for Freedom and Democracy – a public holiday in Slovakia). This form of state support benefits all children under 15 years of age and seniors over 62 without limitation of their citizenship or residence, as well as students and seniors under 62 who are citizens or permanent residents of other EU member states. By the end of 2017, 1.125 million passengers were registered for zero-fare transport. The structure of zero-fare passengers during 2017 (ZSSK 2018) was dominated by-students in the age range 15 to 26 (59%), followed by seniors over 62 years (19%), seniors under 62 years (12%), and children or students under 15 years (10%).

The position of bus transport in public transport in Slovakia worsened until 2010 and then began a phase of stabilisation. Bus transport is within the remit of 8 self-governing regions and the market for bus transport has opened up for private operators.

Since the end of 2014, zero-fare trains also influenced bus links. According to the information from the Bus Transport Association (SITA 2016), suburban regional buses operating on demand and, with the support of self-governing regions,

carried 2.3% fewer passengers in 2015 than in 2014. Long-distance bus services that are not subsidised (by regional governments) transported, on average, 12.7 per cent fewer passengers in 2015 than in 2014. It is evident that zero-fare trains negatively influenced direct connections between DCs.

The liberalisation of the transport market in passenger railway transport started in 2012 but, until 2018, it only functioned to a limited extent. In 2012, the private carrier RegioJet took over operation of the Bratislava – Dunajská Streda – Komárno railway route in the suburban zone of Bratislava. The improved operation of the private carrier has led to an increase in the number of direct connections between these DCs and also the number of passengers (Michniak, 2018). The liberalisation has also contributed to an improvement of the networking and an increase of the number of direct connections, mainly in the case of the regional centre of Prešov because of new trains provided by the private operator LEO Express, from Košice to Prague and also leading through Prešov.

Transport investments in Slovakia after 1989 were oriented mainly to the development of the road transport infrastructure (i.e. the construction of motorways and expressways). Small towns that obtained a connection to the motorway network lost many direct transport connections because before the construction of a motorway buses stopped there, but after the construction buses used the motorway without stopping in the small towns and thus, long-distance buses tried to compete with trains and car transport through better transport times. The town of Ilava is an example of a small town that lost all inter-regional, long-distance bus connections. A similar negative change was observed in the case of towns such as Nové Zámky, Bytča, Považská Bystrica, and Nové Mesto nad Váhom. The town of Levoča is an example of a small historical town (listed as a UNESCO World Heritage Sites) that was negatively influenced by the loss of many direct bus connections and by unfavourable public transport accessibility.

6. CONCLUSIONS

Investments in transport in Slovakia after 1989 were mainly oriented towards the development of the road transport infrastructure (construction of motorways and expressways). Together with growing motorisation, it was also one of the reasons for the strengthening of the position of personal automobile transport to the detriment of public transport.

Changes in transport have also influenced the pattern of public transport, which is what we have observed through the network of direct public connections between DCs in Slovakia. The main results include a decrease of connectivity in the network of direct bus and train connections (by 12% and 36% respectively) and also a decrease in the number of direct connections between DCs in Slovakia (by 17% and 43% respectively) in the period from 2003 to 2017.

Those general trends did not manifest uniformly for all regions and their centres. In some cases, the decrease in public transport was bigger than the general trend was. In the period from 2003 to 2017, the town of Čadca lost direct train connections to almost half of DCs. The town of Ilava lost all direct bus connections with distant centres. A similar situation of the deterioration of bus connections was observed in Nové Zámky, Bytča, Považská Bystrica, and Nové Mesto nad Váhom. All of these DCs are located on the main railway routes in Slovakia and, for their inhabitants, it may not be a problem because they can use train connections. After the introduction of the zero-fare trains in 2014, many bus carriers stopped operating long-distance buses (SITA 2016) or focused on regional lines that go to the centres with railway connections.

Yet there were some exceptions that pointed to better connectivity of some DCs by train (Prešov and Malacky) or by bus (Snina, Humenné, Medzilaborce and Sobrance) that were mainly the result of a change in train or bus routes.

The main factors that have caused changes in the public transport connection of DCs include growing motorisation and personal automobile transport, the zero-fare trains for selected categories of inhabitants since 2014, the construction of the motorway network, and the liberalisation of the transport market.

The role of public transport is to ensure the transport accessibility to places of basic importance and activities for the inhabitants of all regions. Inhabitants need access to shops, services, work, and other social contacts in a safe, convenient, comfortable and relatively cheap manner (Musselwhite and Haddad, 2010). There are many groups of inhabitants that are dependent on public transport, e.g. children and students, the elderly, disabled persons and persons with low income. If public transport does not offer any or suitable connections, such groups become excluded and it is possible that this will lead to transport-related social exclusion (Preston and Rajé, 2007; Lucas, 2012). The results concerning direct public transport connections between DCs in Slovakia point to some aspects of transport exclusion of peripheral centres in the southern of the central parts of Slovakia and eastern Slovakia that are closely related to economic and social exclusion, but this concept is better better applicable to the regional and local levels.

The direct public transport connections of DCs point to the importance of individual DCs in the settlement structure of Slovak towns and cities and their position in settlement hierarchy. Our results confirmed the dominant position of Bratislava as the capital city of Slovakia (Buček and Korec, 2013), and the important position of eight regional centres, and other towns, that have favourable transport locations, e.g. Zvolen and Poprad. Then again, there are many small DCs with a peripheral transport and economic position, e.g. Gelnica, Poltár, Medzilaborce, Sobrance, and others.

An important challenge for public transport in Slovakia is the creation of the integrated transport systems of the regions with the largest cities and towns in

Slovakia. The fact that regional bus transportation is controlled by self-governing regions and regional railways are still under the control of the state is one of the main obstacles for their development. The integrated transport system in Slovakia is developing mainly in the Bratislava region. Integration of transport is not about ensuring direct access to the centre of an area but it is a system of public transport within a region that includes more than one transport mode and some carriers in which passengers are transported under common transport and tariff conditions. It offers better access to the centre but, in many cases, with a transfer between different modes of transport in transfer nodes.

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