

APPLIED RESEARCH OF TRANSPORT INFRASTRUCTURE FOR SLOVAK CAPITAL DEMAND

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Abstract

Bratislava as the capital of Slovakia is very important knot in Slovak business or tourism. That is why transport infrastructure plays very important role. The increase role of green bicycle transportation and the demand for sustainable tourism require building corresponding infrastructure for urban cyclists, cycle commuters and cycle tourists. The priority of government should be to develop this industry. They should also generate pressure on private entrepreneurs operating public transportation to mind the safety of their clients. It is also related to innovation and improving the quality of services that they provide.

Keywords: Tourism, transportation, disabled clients, cyclists, cycling

Introduction

Public transportation in developed country should be automatically supported by Municipal Corporation as well as by government. Each day it transfers thousand inhabitants and tourist. Everybody who uses public transport relies on it and expects it will be in good condition. Many tourists come to cities and towns without their own means of transport and have to rely on public transport services. These visitor are given first destination feeling through contact with railway or airport premises and then with public transport to be able to reach the chosen point. The public transportation network including cycle infrastructure in Slovakia is managed by the Ministry of Transport, Construction and Regional Development, as well as by specific cities and towns where they are or through which they pass. The recent increased attention to improving cycling infrastructure is mainly caused by the citizens themselves who through civic associations and non governmental organisation push local governments to create better conditions for cycle transportation and tourism. The recent actions of the government in improving conditions for cycle transportation and tourism are in accordance with the EU policy to reduce the greenhouse gas emissions by 20% by 2020. (Commission of the European Communities, 2007).

Transportation services are not only used for transportation of domestic or foreign population, but also serve as the town's trademark.

The research was about reconnaissance of public transport places – 8 train stations in Bratislava and city borough and 1 bus station.

Infrastructure as an Important Aspect of Tourism Development

Transportation belongs to the basic services in the tourism product and is one of the conditions of tourism emergence and development. Travelling is connected with movement and accommodation. Movement stage is related to transportation, which acts as a demand driver for transport services. Transportation needs are basic and without their satisfaction it is not possible to talk about tourism.

Transport infrastructure significantly affects economic development. The geographical and geopolitical position of Slovakia connects its transport infrastructure to the European transport network. According to the World Economic Forum, which annually assesses the quality of land transport infrastructure, Slovakia was ranked number 71 out of 139 evaluated countries in 2012. In comparison with the Czech Republic, we are 61 positions lower than our Western neighbours. (Source: Travel & Tourism Competitiveness Report 2011) The competition in the sphere of supply in developed transport markets focuses on qualitative indicators. These include reliability, flexibility, convenience, the quality of service offered. A developed transport market is considered to be a liberalized market, which is able to cooperate and, if necessary, to integrate into international transport markets. Slovakia has substantial reserves for the development and refinement of road transport and cycle infrastructure, which, among other things, will contribute to tourism development. A major factor in road transport is bus transportation. Bus transportation encompasses not only the quality of roads and carriage stock, but further components as well such as bus stops, bus stations, the quality of services provided at stations, the ability of co-operation with other modes of transport and the like. The second most widespread transportation on the territory of Slovakia is rail transport. Railways of the Slovak Republic were subject to extensive development in the previous economic system.

One of very significant transportation within bigger cities in Slovakia is public transport. Unfortunately permanent lack of capital resources distributed through the state budget made it impossible to keep rolling stock in perfect condition all time.

Currently cycle transportation and tourism do not have a high share on overall transportation modes in Slovakia but its importance is rising. In 2012 the share of cycle transportation in Bratislava was around only 3 % comparing to the several Netherlands towns with 35 % - 40% . In countries with a high share of cycling also cycle tourism is much more developed and practised. Bratislava has a great potential for cycle tourism as two international cycle routes EuroVelo 6 and 13 pass through it.

From traveller's point of view, this shortage negatively affects the quality of services provided. There is a permanent decrease in the number of railway passengers, with the main outflow driver being private motor vehicles. Cleanliness of coaches and the stops are slowly improving, but still do not belong to the strong side. The carriage stock undergoes a gradual renewal, but economically weaker regions will still have to wait for the replacement. Cycle tourists and commuters tend to use from public transportation rail transportation the most as the trains are the most convenient for bicycle transportation. In Slovakia only a private transporter RegioJet has all trains adjusted for bicycle transportation. The national rail transporter has only few trains suitable for comfortable bicycle transportation and their recognition in timetables is impossible. Moreover most of Slovak train stations especially in bigger towns do not offer easy access to the platforms and provisions for safe bike storage. Slovakia is competitive in rail transport as we have a very well-established rail infrastructure. In 2011, the report on tourism competitiveness evaluated it more positively than road transport, ranking it number 21 out of 139. (Source: Travel & Tourism Competitiveness Report 2011)

Rail transport should be linked to road transportation. Because it would be inconceivable for passengers to get off the train at any place without being offered a possibility for prompt continuation of their trip to the final destination. Lines should be connected to the bus transportation of national, regional level as well as with the public transport network of cities and towns. Cyclists need safe and foreigners even well signed cycle paths to and from the stations.

OECD supposes that the increase in greenhouse gas emission, particularly in the sphere of transport and industry, creates potential problems for meeting Slovakia's medium

and long term goals in emission reduction. Recommendations that could help to reduce greenhouse gas emissions include the elimination of subsidies for coal in power generation, removal of excise tax exemption for energy intensive industries, and, most importantly, the modernization of railway infrastructure. It is therefore assumed that the improvement of rail services will be one of the priorities as far as the transport in Slovakia is concerned.

Reconnaissance Bratislava regions

Research under the name Reconnaissance of environment for needs of tourism in the capital of Bratislava and its quality evaluation was conducted over four months in 2012 direct in a terrain. The basic model of the research project was prepared under the guidance of prof. JUDr. Ľudmila Novacká, PhD. She has proposed a method of processing research. Research was conducted following methods. By reconnaissance we can understand the field inspection, survey. Reconnaissance was conducted by personal observations by the researchers in the field. They primarily used the information with the help of standardized questionnaire prepared in advance. The questionnaire comprised of certain points which were further processed to fill out. Afterwards we made photo documentation. We evaluated all positive and negative externalities examined the subject by analyses which affect the quality of service. In the end we used the method of synthesis as well as statistical methods for evaluation of established facts.

A partial goal of the research was to map a real situation in terms of transportation to the capital Bratislava. Mainly we focused on the negative externalities that may influence the tourists.

The subject of our partial goal was reconnaissance the railway stations and the bus stations. Research was done by 16 researchers by direct observation in the terrain. Reconnaissance of cycle paths and infrastructure were carried out by 54 students by direct observation in the terrain during 4 months in 2012.

Evaluation of the Railway Station Inspection in Bratislava

There are 10 railway stations in the Slovak capital. We performed reconnaissance at 8 stations – the Main Station (Hlavná stanica), Vinohrady, Predmestie, Nové Mesto, Rača, Devínska Nová Ves, Lamač and Petržalka. The remaining 2 stations - Vajnory and Podunajské Biskupice – are not very important from tourism perspective; nevertheless, in certain time spans on week days, they are intensively used by commuters working in Bratislava.

The building of the stations Devínska Nová Ves, Petržalka and Nové Mesto were completely renovated several years ago, thus the inspection results were positive. In Rača, the train station was also renovated, but, basing on the inspection, we evaluated its state as being inferior to the above mentioned. The reconstruction was mainly targeted at security elements of platforms and specific tracks, as the railway station is situated in the country-wide corridor route.

In course of the reconnaissance, we evaluated the station's exterior and its surroundings, indoor spaces, and our primary focus was on detecting negative features and shortcomings. Examination of the station's exterior consisted of the evaluation of single platforms, targeted at the general appearance and cleanliness, of roofing, lighting, benches, dustbins as well as safety arrangements for wheelchair users and baby carriages, the visually challenged, or suitability for senior citizens. Assessing the interior, we concentrated attention on the entrance hall, in terms of its cleanliness in particular, on the station decoration with greenery, posters or welcome boards. We observed whether there are enough benches in the hall, as well as possibilities for buying refreshments, leaving luggage or using the toilette. We also evaluated notices on information boards and posters, mainly in terms of their clarity,

time relevance and multi-language availability. From the total questionnaire output, were chosen the most important research objects, in our opinion, which should be a priority for rail service providers to maximize customers comfort and satisfaction.

Terrain researcher always had to choose in two possible answers in the questionnaires. One of them was positive and second one negative. After counting positive and negative answers we counted over a percentage to total amount of the station under research.

benches in the entrance hall	4	50,0%
functions of cloak-room	7	87,5%
cleanness of cloak-room	6	85,7%
adjustment for disabled people	3	37,5%
parking possibilities	6	75,0%
litters damages	3	37,5%
left luggage room	1	12,5%
station decoration	4	50,0%

Tab. 1 Evaluation of questionnaires at the stations under research.
Source: own processing

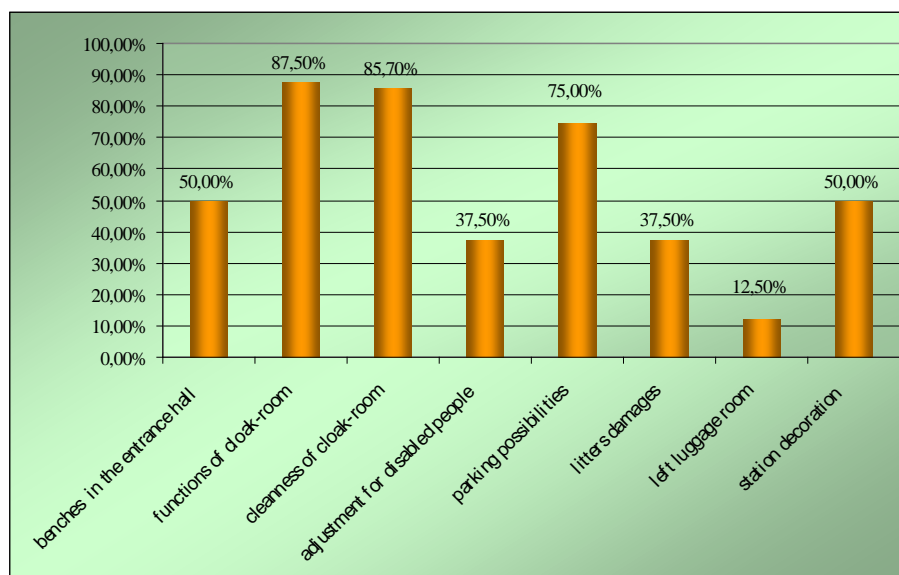


Chart 1 Percentage evaluation of questionnaires at the stations under research. Source: own processing

The given data show that only half of the stations under research have benches in the hall. Those were the stations that have undergone renovation, namely the stations Devínska Nová Ves, Petržalka, Nové Mesto and Lamač. The busiest stations – the Main Station and Vinohrady - have no benches. Although the Main Station is equipped with a waiting room, it is located on the top floor and is inaccessible for mothers with baby carriages and for wheelchair users because there is no elevator. The Vinohrady station used to have benches in good condition, which, for inexplicable reasons, were ordered to be removed by the railway management around the year 2008. Currently, there are some seats there, which cannot be evaluated positively in terms of reconnaissance as they are only a few.

Sanitary facilities are an essential part of transport operations. The inspection showed that they are present at almost every station. They only lack at the station Predmestie as its building is in desolate condition and is closed for security reasons. Therefore, Chart 1 considers only 6 stations in the percentual evaluation of the "cleanness of toilets" criterion. During our inspection, we determined that the cleanness of sanitary facilities does not meet the required standards only at the station Vinohrady. Interestingly, not all stations charge fees for the use of toilet.

Criteria: possibilities for disabled people

Public transport should serve for all without any restrictions. This means that it also has to be adjusted for clients with disabilities as well as for mothers with baby carriages. Therefore, we wondered how the Railways of the Slovak Republic provide facilities for this client segments. The Main Station, which renovated all platforms a few years ago, could not avoid criticism for the lack of platform elevators precisely for these clients. Platforms are well-equipped for the visually challenged, but mothers with baby carriages or wheelchair users face problems. Throughout the station premises, they are only able to move around the two main halls of the entrance hall, but toilets, which are located below the hall, are out of their reach. They equally have no access to the waiting room with stairs leading to it. They can only reach as far as Platform 1. Railways provide a service of sending trains to Platform 1 upon a request filed 24 hours before train arrival. In fact, with an exception of the stations Nové Mesto and Devínska Nová Ves, other stations are not very well (or in some cases at all) adjusted for clients with disabilities. It is worth noting, that the station Vinohrady is equipped with a ramp, which allows wheelchair users to get into the entrance hall. There is also a lift there bringing them to platforms 2 and 3. The station Vinohrady has 4 Platforms. The first send trains to Nové Zámky, Štúrovo and Banská Bystrica. Platform 3 sends trains in the direction of Žilina and Košice. From Platform 2 and 4 the client can only get to the Main Station. A very important fact is that in case of using this means of transportation to the Main Station, the train might arrive at a different platform and the traveller will result being trapped at the station. The platform location is very low, which makes it a problem for an able-bodied person to get on and off a train; this would be impossible for people with disabilities and extremely difficult for senior citizens. For mothers, it is impossible to lift the baby carriage upwards and get it onto the train. The station is entirely unsuitable for the visually challenged because of damaged pavement on the platform. At the station Rača, there is an elevator, which was out of order in the time of the reconnaissance. There are some facilities for the visually challenged. During the inspection of this element, we detected very serious shortcomings in this regard. In order to become competitive, the railways must gradually renovate all the stations.

Criteria: Parking

Another object of investigation was the parking possibility by the stations. Here we also found serious deficiencies. None of the parking areas is guarded. At the Main Station, it is chargeable and not large enough. Some stations, such as Vinohrady, have no parking lot. Most parking lots are not fixed up or properly marked. The parking lot at the Petržalka Station can serve as an model. The parking rate is 0.5 €for 30 min., in case of all-day parking it is 4 euros. Its further advantage is a good security system and entryway to the parking lot. Surrounding area offered further parking possibilities. Convenient access for motor vehicle and possibility of free short-term parking at railway stations should be provided for as a matter of course. Railways should realize that a parking lot is a necessary part of the infrastructure.

Criteria: Left-luggage room

As one of the most serious drawbacks, we qualify the absence of left luggage offices at 7 out of 8 stations under investigation. We were aware of the fact that the peripheral stations are small and the tourist flow there is not too intensive. However, we assume that there is always a possibility to operate a left luggage office without raising additional costs. A left luggage office serves not only for tourists who make a trip to our capital. As a considerable drawback we view a break in left luggage office operation at the Main Station in the afternoon hours. The office closes for a break even despite the fact that trains arrive and

depart at this time. Consequently, travelers must sometimes come 40 minutes unnecessarily earlier so as to be able to pick up the luggage. We recognize the fact that a left luggage officer is entitled by law to have a break, but we subscribe to the opinion that the railways should cover this daily service interruption by additional workforce.

Criteria: Visual perception of entry to the station

The premises of a railway or bus station are the first thing a visitor sees on arriving in Bratislava. First impression should fill them with positive emotions. In our research, we, thus, concentrated on this element as well. Again, we came to a conclusion that only the renovated stations have decorations.

As the general assessment of our investigation, we came to the conclusions that joint stock companies providing services in rail transportation must take radical steps to increase their competitiveness and attract passengers back. The steady decline in passenger numbers is directly related to the quality of railway station facilities. After negative experiences and unfulfilled expectations, passengers choose another alternative.

Evaluation of the Bus Station Inspection in Bratislava

Another alternative in the use of public transport in Slovakia is bus transportation. Performing designed reconnaissance of the environment for tourism in the capital city, Bratislava, and evaluating its quality at the bus station Mlynské Nivy, we also proceeded according to the assigned questionnaire. The questionnaire consisted of 11 points for evaluation, and namely - dustbins, cleanliness, left luggage, possibilities of buying refreshments, station decoration, walls, notices, a telephone booth, security, the staff of ticket and information offices. Each of these points contained further, more specific questions that had to be answered. Inspection was carried out directly at the premises of the station, which allowed for the answers in the questionnaire to be recorded on the basis of real experience. The main methods used by us were observation and subsequent analysis of the state observed.

During the reconnaissance of the bus station Mlynské Nivy we came to several conclusions. We consider a very limited number of parking spaces to be the biggest deficiency. Parking system is almost non-existent. We found no designated parking lot or parking spaces. Cars are mostly parked on the sidewalk and by the roadside. There is no security system here, a lot of parking places are reserved for taxis. Car owners can never be sure whether their cars are parked correctly or can be towed away by the police. Station neighbourhood is not safe as there are antisocial individuals moving in the cars' vicinity.

Another significant drawback is the lack of any arrangements for people with disabilities. Within the station, there is no lift or ramp by means of which such clients could comfortably get from the waiting room to the platforms. The only possibility is to proceed directly from the entrance hall, where there is an inclined plane for wheelchairs and baby carriages. However, we were surprised by an immense paradox – a warning against walking across bus lanes. As there is no other way for such travellers to reach the platform directly from the hall, nobody complies with this prohibition.

The construction of the bus station was carried out in the years between 1975 and 1983, and since then, no reconstruction work has taken place. For this reason, the building and platforms look shabby. In winter, waiting in the waiting room or the entrance hall is very unpleasant because of the incessant cold. The whole station looks gloomy and not at all safe. In the future, it is necessary to improve the overall appearance of the bus station, because it is visited daily by a large number of not only native dwellers but also foreigners who await European standards of travel, to which the station in its present state fails to correspond.

On the other side, we can positively evaluate the electronic information system that notifies about arrival and departure of buses. It also gives information on the attractions of

Bratislava and Slovakia which are worth seeing. The disadvantage of the system is its low visibility.

The conducted research shows that result. We summarized some of them in the following Table 2. The Bratislava railway stations and the bus station will be competitive when they remove the identified many deficiencies.

Station/Criteria	benches-entrance hall	benches-platforms	lighting-station	Left luggage room	Functions of cloak room	carpark
Devínska Nová Ves	yes	yes	satisfactory	no	yes	yes
Hlavná stanica	no	yes	satisfactory	yes	yes	inconvenient
Lamač	yes	yes	satisfactory	no	yes	yes
Nové Mesto	yes	yes	satisfactory	no	yes	inconvenient
Petržalka	yes	yes	satisfactory	no	yes	yes
Predmestie	no	inconvenient	absent	no	no	yes
Rača	no	yes	satisfactory	no	yes	inconvenient
Vinohrady	inconvenient	inconvenient	yes	no	yes	inconvenient
Bus station	inconvenient	inconvenient	deficient	yes	yes	inconvenient

Tab. 2 Synthesis table of research result. Source: own processing

Particularly we made a synthesis for disabled people and for families which travel with prams.

Stanica/Criteria	Access to the cloak room	Stairs/lift	Access to entrance hall	Phone box	Comfortable entry to the platforms	Elements for blind
Devínska Nová Ves	yes	not necessary	yes	no	yes	yes
Hlavná stanica	no	no	yes	yes	no	yes
Lamač	yes	not necessary	yes	no	yes	yes
Nové Mesto	yes	yes	yes	yes	yes	yes
Petržalka	yes	yes	yes	yes	yes	yes
Predmestie	no	no	no	no	no	no
Rača	no	yes	yes	no	no	yes
Vinohrady	no	yes	yes	no	no	no
Bus station	yes	inconvenient	no	no	no	no

Tab. 3 Synthesis table of research result of assurance for disabled people. Source: own processing

Evaluation of the Railway and Bus Stations Inspection in Bratislava for Cyclists' Needs

As the cyclists have special requirements for comfortable train and bus travelling we added additional criteria to evaluate the stations. We assessed all 10 Bratislava station including Vajnory a Podunajské Biskupice stations, which as it was mentioned above, are important for commuters. We evaluated the access to the stations, the existence of marked cycle paths of any category segregated or integrated and cycle stands in the area of stations. Safe cycle stands are important mainly for the visitors who need to stop at the stations for a short time. The next criterion was a long time bicycle parking. The commuters need a safe bike storage - bike parking to leave their bikes for a longer period mostly a day sometimes even overnight. In the countries with a high share of cycling for work and with the strong environmental orientations they already have a very sophisticated bike garages for hundreds of bikes. In Slovakia mainly in smaller towns or villages the bike cages are used for a safe bicycle storage. The last criterion was easy access to the platform. The barriers of stairs often discourage people to combine cycling and train use to get to work or to school. As we inspected also smaller borough flat stations without the stairs leading to the platforms in the evaluated table we state it as flat station. In case of bigger stations with stairs leading to platforms we stated if any provision is made to overcome the stairs we name the provision as e.g. lift, ramp or rail on the stairs.

Stanica/Criteria	Cycle path to the station	Cycle stands	Bicycle parking	Access to the platforms
Devínska Nová Ves	no	yes	no	yes/flat station
Hlavná stanica	no	no	no	no/ stairs
Lamač	no	yes	no	yes/flat station
Nové Mesto	no	no	no	no
Petržalka	yes	no	no	yes/1st platform
Predmestie	under reconstruction			
Podunajské Biskupice	yes	no	no	yes/flat station
Rača	no	yes	no	yes/lift
Vajnory	no	no	no	no
Vinohrady	no	no	no	no
Bus station	no	yes	no	no

Tab. 4 Evaluation of the Railway and Bus stations inspection in Bratislava for cyclists needs

Conclusion

Public transport is almost everybody's part of life. When you travel by it daily, maybe you do not take notice many either positive or negative things because it is a routine for you. It can go on many years until you face to solve something like transport a pram or a wheelchair or maybe when you see a blind person at a station or you decide to use your bicycle to get to work or to do bicycle trip. Students of tourism did this research according to given instruction. They spent hours at the station to observe and evaluate the situation. Many people still prefer to travel by car because of greater convenience. But they forget the fact that travelling by public transport, trains and buses contribute significantly to reducing road fullness, decreasing CO₂ emissions, when using bicycles to improve health and fitness and moreover it increases the overall efficiency of transport. Nowadays many people have found out that using trains or bicycles instead of car have many advantages mainly if they travel to capital in the morning.

Bratislava is an important transport hub but favourable conditions for travelling have not been built here yet. Research of train stations, public transport stops and cycle infrastructure we did a base for discussion of the Bratislava municipality management (Bratislava Tourist Board ?) and the Government how to improve transport services and cycle infrastructure in the capital of Slovakia Bratislava.

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