INTERNATIONAL TOURIST ARRIVALS AND
TRANSPORT INFRASTRUCTURE IN THE REPUBLIC OF
MACEDONIA: PERSPECTIVE OVERVIEW

Jovanka Biljan¹, Aleksandar Trajkov², Sanel Jakupović³

Abstract: Growth of international tourist arrivals is highly determined by the transport infrastructure development. Quality of the passengers transport implies on the quality of tourist offer. Tourist arrivals in the Republic of Macedonia can be realized only through land and air transportation. The country’s position on the center of the Balkans indicates its potential for international land transportation development. Potential for further transport infrastructure development can be seen from the fact that there are two pan-European corridors that are crossing through the country linking it with the rest of the Europe. This paper aims to analyze relations between international tourist arrivals and transport infrastructure in Macedonia.

Key words: international arrivals, transport infrastructure, passengers transport, Republic of Macedonia.

JEL Classification: L 83, L 91, L 92, L 93, R 41, R42

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INTRODUCTION

International tourism and transport infrastructure are considered to be closely interrelated and interdependent processes that have significant impact on the national economy development. Growth of international tourist arrivals in a country is highly determined by the transport infrastructure development. Quality of the passengers transport in a country implies on the quality of tourist offer and therefore on the number of tourists visiting the country. The Republic of Macedonia is a landlocked country and therefore international visitors can only access it by land or air. The analysis of the national infrastructure compared together with qualitative and quantitative analyze of international arrivals will show the impact of the quality of land and air infrastructure on the number of tourists in the country. For that purpose this paper consists of two main parts. The first part is a research on transport infrastructure in the Republic of Macedonia by transport modalities which will help us to identify the level of infrastructure development in road, rail and air transportation. The second part is research and analyze on international arrivals by transport modalities in the Republic of Macedonia. That will show the correlation between transport infrastructure and the number of tourist arrivals in the country. The conclusions will lead to identification of the weak spots of passengers’ transportation in order to eliminate them therefore improvement of the quality of tourist offer can be made. Also, dealing with bottlenecks in transport infrastructure, the Republic of Macedonia can be promoted as a cheap tourist destination, considering the fact that travel costs are highly incorporated in total tourists’ costs.

TRANSPORT INFRASTRUCTURE IN THE REPUBLIC OF MACEDONIA

Transport infrastructure determines international tourist flows. Better infrastructure increases tourist competitiveness of a country. The Republic of Macedonia is a landlocked country, therefore tourist can visit it using air and land transportation as road transport and railway. Investments in transport infrastructure and transportation capacities should improve quality of passenger transportation and reduce transportation costs. That will improve the quality of tourist services and also will attract more foreign visitors to the country. Of course, these investments must be in accordance with regional development, transportation objectives and national interests and interests of neighboring countries. Therefore, bearing in mind that the Republic of Macedonia is part of European continent, we should develop and coordinate transport infrastructure with the EU and to implement all transportation investment in that direction.
The European Union has prepared a study for extension of the major trans-European axes to the neighboring countries and the region [European Commission (EC), 2005: 21]. This study is developed in order to explore new better ways for connection between EU and neighboring countries. This study also identifies the main five transnational axes as follows: motorways of the Seas, Northern axis, Central axis, South–Eastern axis and South Western axis. It is said that South Eastern axis links EU through the Balkans and Turkey to the Caucasus and the Caspian Sea as well as to Egypt and the Red Sea. Access links to the Balkan countries as well as connections towards Russia, Iran and Iraq and the Persian Gulf are also foreseen. Europe. Southeastern axes that extend through the Republic of Macedonia are defined in Corridor X and Corridor VIII in land transportation. These two very important corridors that cross the country are part of the road and railway infrastructure analyzed below. Considering the importance of air transportation for tourism development, we will also put an overview on current conditions of air transport infrastructure in the country.

**ROAD INFRASTRUCTURE IN THE REPUBLIC OF MACEDONIA**

Macedonian road infrastructure is with relatively good attributes, but with unfavorable structure and very slow dynamics in length growth. The total road length in the country, in 2009 was 13940 km, out of which 7 percent were trunk roads, 27 percent were regional and the majority of 66 percent represented local roads, most of which are in unsatisfactory conditions [Figure 1]. The major part of the road length increase of 6.9 percent achieved in 2009 related to 2003, is a result of the rise of the asphalt roads (17.02 percent), mainly motorways length (20.67 percent). International E roads with 553 km length represented 4 percent of total road network and that is only 1 percent increase related to 2003 [Figure 2]. These roads are part of the main backbones of the road infrastructure in Macedonia that are the two Pan-European Corridors: Corridor X and Corridor VIII.
The North-South Corridor X is the most important element of the core road network, linking from Greece to Austria. Within Macedonia, the traffic volume on the Corridor X averages around 5,000 vehicles per day. An increase in traffic volume of 5 percent per annum is foreseen for the 2008-2012 period, reaching approximately 6,300 vehicles per day for year 2012 and up to 10,000 vehicles per day by 2020-2025 [MTC, 2007: 28]. Corridor X length in the Republic of Macedonia is 172 km, out of which 70,1% are highly modernized and 29,1% are in tender procedure for modernization. Corridor X has additional section – Xd with 127 km length from Gradsko to Medzitlia [Table 1].

The West-East Corridor VIII spans over the South Eastern European area where transport infrastructure is traditionally weak. It connects the Adriatic with the Black Sea. Corridor VIII is a multi-modal transport system along the East-West axis comprising sea and river ports, airports, multimodal ports, roads and railways, with a total extension of 1,270 kilometers of railways and 960 kilometers of roads [MTC, 2007a: 28]. Total length of Corridor VIII in the Republic of Macedonia is 304 km, and compared to Corridor X is not in advanced phase of modernization. Only 27,6% of total length of the Corridor VIII in the Republic of Macedonia are modernized and just 8,7% are in procedure to be modernized [Table 1].

Road density as the ratio of the length of the country’s total road network to the country’s land area, for Macedonia was 53.8 km on 100 km² land in 2007 and compared to the countries from the region, it is relatively good [Biljan, 2011]. But, compared to the EU region, Macedonian road density is less than half of the EU average (121.79km on 100 km² land). Considering the dominant mountain structure of Macedonian land, the road density is quite satisfactory. The main problem is the lower density of motorways and trunk roads.
According to the Ministry of transport and communication, although current road construction is solid and has good quality, the general physical condition of the road network is on lower level compared to European standards and to the standards of some neighboring countries [MTC, 2009: 16]. Highways and trunk roads, which have to carry the higher portion of traffic, are in better conditions than the regional and local roads, as secondary roads which represent more than 90 percent of the total road length in Macedonia [SSO, 2010].

Table 1. Current state of road network of the Republic of Macedonia that is part of Pan-European Corridors

<table>
<thead>
<tr>
<th>Location</th>
<th>Length</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corridor VIII</td>
<td>Kjafatane (border with Albania) – Struga – Gostivar – Skopje – Kumanovo – Deve Bair (border with Bulgaria). Common route with corridor X from Miladinovci to Kumanovo.</td>
<td>304 км</td>
</tr>
<tr>
<td>Corridor X</td>
<td>Tabanovce (border with Serbia) – Kumanovo – Veles – Bogorodica (border with Greece)</td>
<td>172 км</td>
</tr>
<tr>
<td>Corridor Xd</td>
<td>Gradsko – Bitola – Medzitlia (border with Greece)</td>
<td>127 км*</td>
</tr>
</tbody>
</table>

Source: [MTC, 2009: 13-14], [Cholovich, 2004: 2].

The current progress of road infrastructure development in the Republic of Macedonia could be also assessed according to the EU evaluations in the yearly progress reports. The language used for evaluating Macedonia’s progress from 2006 till 2010 in transport networks ranges from reasonable, good, some, up to limited or no progress. For illustration, 2009 and 2010 are years with some progress and limited progress, respectively. As for comparison, from 2006 to 2008, when new “E” roads and highways were built, the language used for evaluating Macedonia’s progress was reasonable progress and good progress [Stojilovska, 2011: 2]. That leads to a conclusion that the road infrastructure should be improved in the following period.

According to the data on road infrastructure gross investment spending and maintenance expenditures, Macedonia considerably lags among the analyzed neighboring countries: Albania, Serbia and Bulgaria [Biljan, 2011]. Considering the competiti-
on for financing of the neighboring Pan-European Corridors, especially Corridor IV, in front of international organizations and other donors, on the one hand, and the position of the Corridors X and VIII that cross Macedonian land, on the other hand, Macedonian officials have to make additional efforts to increase the investments in road infrastructure.

**RAILWAY INFRASTRUCTURE IN THE REPUBLIC OF MACEDONIA**

Railway infrastructure as an asset of common interest is a property of the Republic of Macedonia. Therefore, no one else can acquire property rights on railway infrastructure. In the previous period, the Government performed a reform on railway system and formed two new companies: public enterprise the Macedonian Railways Infrastructure – Skopje (MRI) and the Macedonian Railways Transport AD – Skopje (MRT). Currently they are the only companies that provide rail services in the public interest. The MRI has responsibilities on management, construction, reconstruction, repair, maintenance and protection of railway infrastructure, as well as on organization and regulation of rail transport and management with systems for regulation and safety. The MRT at this point is the only enterprise that performs transportation of passengers and goods for public or personal needs in domestic and international traffic.

Total length of railway network in the Republic of Macedonia is 925 km, out of which 699 km are open track lines, 226 km are track lines in stations and depots, and 102 are industrial track lines [MRI, 2010: 9]. According the data given by the Ministry of transport and communications, railway network consists of single-track lines and Corridor X has 235 km electrified lines [MRI, 2010: 35]. Data taken from the MRI shows that 312,66 km or 45% of the open track lines are electrified [Government of Republic of Macedonia, 2010]. Main characteristics of Macedonian railway infrastructure are given in the table below.

<table>
<thead>
<tr>
<th>Table 2. Characteristics of railway network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open track lines</td>
</tr>
<tr>
<td>Electrified track lines (25Kv / 50Hz)</td>
</tr>
<tr>
<td>Not electrified track lines</td>
</tr>
<tr>
<td>Side track lines</td>
</tr>
<tr>
<td>Industrial track lines</td>
</tr>
</tbody>
</table>

*Source: [MRI, 2010: 35]*
The EU policy tends to provide competitive railway system through its transformation which will lead to increased usage of the railway transportation in order to disburden road transportation, save energy and protect the environment. It must be taken into account that development of the railway infrastructure should be in function of national sustainable and balanced development that will lead to the inclusion of domestic market into the EU common market.

Trans–European networks and Pan–European corridors are set in a way that allows traffic through multiple roads with intention to meet increased transport demand due to increased circulation of people and goods. For this reasons, the Republic of Macedonia needs to develop railway network in order to provide better national competitiveness in transportation compared to the other countries in the region and wider.

The main line of Corridor X from Tabanovce to Gevgelija through Skopje and Veles is single track, electrified (25Kv, 50Hz) and with relay signal system that enables good communication. The last renovation of the biggest part of this section was done 30 years ago. This line has normal track with several sections that can properly function with 100 km/h speed. There are 29 stations along this corridor. Bearing in mind that 85% of total international and transit transport is carried through Corridor X, priority is given on increasing its capacity and speed on some sections that will result in raising the standards to international level [MTC, 2009]. Table 3 shows current state of railway network with all its edges that connect different regions in the country and current connections with the neighboring countries.

Table 3. The Republic of Macedonia railway infrastructure

<table>
<thead>
<tr>
<th>Railway Corridor</th>
<th>Location</th>
<th>Status</th>
<th>Speed km/h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corridor X</td>
<td>Tabanovce – Skopje – Veles - Gevgelija</td>
<td>Single tray, electrified. Last renovation of the most of the section was over 30 years ago.</td>
<td>110</td>
</tr>
<tr>
<td>Corridor VIII</td>
<td>Gjorce Petrov – Kicevo</td>
<td>This line was constructed in 1952/1969 and has good characteristics.</td>
<td>60-80, 80-100</td>
</tr>
<tr>
<td>Skopje-General Jankovic</td>
<td>Connection with Pristina - (Kosovo)</td>
<td></td>
<td>60-80, 80-100</td>
</tr>
<tr>
<td>Section C of Corridor X</td>
<td>Veles – Bitola – Medzitlia (Border with Greece) and connects to Greek railway system</td>
<td>Lines with secondary and standard sections. Built in 1939. Out of function in the last 5 years.</td>
<td>60-80, 50-100</td>
</tr>
<tr>
<td>Kumanovo-Beljakovci</td>
<td>Part of Corridor 8.</td>
<td>Line between Kumanovo and Beljakovci is not in function</td>
<td>60-80</td>
</tr>
</tbody>
</table>

Source: [MTC, 2009: 3].
The total length of Corridor VIII is about 308 km on the territory of the Republic of Macedonia, out of which 152 km or 55% are built and operative. Around 89 km or 25% are to be built towards Bulgaria. The government has predicted budget for construction of this section for several years in the past. About 5 years ago, all investments in this direction were stopped. It is predicted that total investment for finishing this section is 192 million Euros [MTC, 2009: 3]. Approximately 66 km or 20% of total length are needed to connect with Albanian railway system. It is calculated that total investment for connection with Albania will cost about 242 million Euros [Melaim, 2005: 2].

**AIR TRANSPORTATION INFRASTRUCTURE IN THE REPUBLIC OF MACEDONIA**

There are two international airports in the Republic of Macedonia: the Skopje airport “Alexander the Great” and the Ohrid airport “St. Paul the Apostle”. Both airports are operated by the Turkish company TAV Airports Holding and in the last two years were reconstructed and modernized which led to increased operability and capacity. As for illustration, Skopje airport at this point has a capacity of over 4 millions passengers per year [MTC, 2011].

The Ohrid airport is situated 10 km west from the center of Ohrid. It is near the southwestern line of the corridor “east – west” (E-850 and E-871), close to the Albanian border. Important for the passengers transport is that there are 12 airlines companies that are using the services of this airport and the airport is connected with Belgrade, Ljubljana, Vienna, Zurich, Dusseldorf, Amsterdam and Istanbul [The Ohrid Airport, 2011].

The Skopje airport has a very important location for all Balkan countries as it is in the near of the crossroad of the Corridor “north – south” (E-65 i E-75) and Corridor “east – west” (E-850 i E-871). As concerned for the passengers transport, 15 airlines companies are giving their services on this airport. Also, it has connections to Istanbul, Sofia, Podgorica, Belgrade, Budapest, Zagreb, Ljubljana, Vienna, Zurich, Prague, Berlin, Hamburg, Dusseldorf, Brussels, Amsterdam and Rome [Skopje Airport, 2011].

Both international airports have all the necessary airport facilities that provide pleasant airport services to the passengers as: terminals, info desks, VIP and CIP lounges, bar and restaurants, parking, shops, duty – free shops, bank, ATM, postal services etc.
INTERNATIONAL ARRIVALS BY TRANSPORT MODALITIES IN THE REPUBLIC OF MACEDONIA

Analyzing on global level, slightly over half or 51% of travelers arrived at their destination by air transport in 2010, while the remainder traveled over the surface (49%) – whether by road (41%), rail (2%), or over water (6%) [Figure 3]. Over time, the trend has been for air transport to grow at a faster pace than surface transport, so the share of air transport is gradually increasing. As a comparison, just about half of all international tourists arrived over land by road (45%) or rail (4%) to their destination in 2004. Air transport represented 43% of arrivals and transport over water accounted for 7% in 2004 [UNWTO, 2005: 3].

These trends do not imply on the Republic of Macedonia as a tourist and travel destination, although the number of foreign tourists has a constant growth over past few years. On the other hand, total number of tourist in the same period has decreased which means that foreign visitors increased their share in total number of tourist in the Republic of Macedonia. Most of these foreign tourists came from neighboring countries. Serbia and Greece are top tourist emission countries to the Republic of Macedonia, followed by Bulgaria and Albania. Baring in mind that these countries has good road connections to Macedonia, we can see why most of international arrivals to the country are made by road [SSO, 2008; SSO, 2010].

International arrivals in the Republic of Macedonia, by transport modalities illustrate different trends than global. According to the available data given by the Ministry of internal affairs for the first half of 2007, 94% of international travelers arrived by road. The air transportation was used only by 5% of travelers, and the remained 1% has used railway transport [Figure 4]. Foreign visitors use mostly road

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**Source:** www.mvr.gov.mk. Own calculation.

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Figure 3. Inbound tourism by mode of transport 2010

Figure 4. International passengers arrivals in the Republic of Macedonia by transport modalities in 2007
transportation to access the Republic of Macedonia, out of which 95% use national transport [Table 4]. Also, the highest share of international road transport is scheduled passenger transport that implies that there is a low level of organized trips by road. It means that most of international arrivals to the Republic of Macedonia by road are individually organized.

Table 4: Transport of passengers in the road transport in the Republic of Macedonia

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passengers carried, in 000</td>
<td>11836</td>
<td>9295</td>
<td>9442</td>
<td>8862</td>
<td>9412</td>
<td>10147</td>
<td>11607</td>
</tr>
<tr>
<td>national transport</td>
<td>11245</td>
<td>8784</td>
<td>8889</td>
<td>8386</td>
<td>8900</td>
<td>9627</td>
<td>11194</td>
</tr>
<tr>
<td>international transport</td>
<td>591</td>
<td>511</td>
<td>553</td>
<td>476</td>
<td>512</td>
<td>520</td>
<td>413</td>
</tr>
<tr>
<td>scheduled passenger transport</td>
<td>560</td>
<td>444</td>
<td>499</td>
<td>421</td>
<td>470</td>
<td>498</td>
<td>397</td>
</tr>
<tr>
<td>non-scheduled passenger transport</td>
<td>31</td>
<td>67</td>
<td>54</td>
<td>55</td>
<td>42</td>
<td>22</td>
<td>16</td>
</tr>
</tbody>
</table>

Source: [SSO, 2008; SSO, 2010].

The usage of railway transportation is far below road transportation on national level. Only 1.5% of railway transport accounts on international railway transportation [Table 5]. That means that this mode of transport is not very popular when traveling to the Republic of Macedonia. This finding is in correlation with global usage of railway transport to visit certain destination.

Table 5: Passengers carried in railway transport in the Republic of Macedonia

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>passenger carried, in 000</td>
<td>1862</td>
<td>1344</td>
<td>930</td>
<td>902</td>
<td>917</td>
<td>903</td>
<td>1011</td>
<td>1104</td>
<td>1448</td>
<td>1523</td>
</tr>
</tbody>
</table>

Source: [SSO, 2008; SSO, 2010].

The air passenger transportation constantly increases and it is becoming very important to Macedonian tourism. Beside other reasons, the improved infrastructure in air transportation has a positive impact on the number of foreign visitors in the country. Most of the international arrivals by air are charter flights [Table 6], which have increased parallel with the number of international incoming tourists in the Republic of Macedonia. Very characteristic for the analyzed period is that the number of visitors from Turkey has increased for over 2.5 times and overleaped number of tourist from neighboring Bulgaria and Albania in 2010. It is interesting fact if we know that Turkish company is dealing and managing the airports in Skopje and Ohrid. There is also evident multiplication of number of tourist from several
countries that use international charter flights to travel to Macedonia as: Poland, Israel, Holland, as well as increased number of tourist from Austria, Croatia and Germany [SSO, 2010].

Table 6: International arrivals at the airports in the Republic of Macedonia

<table>
<thead>
<tr>
<th>Airport</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skopje total</td>
<td>644726</td>
<td>595806</td>
<td>677269</td>
</tr>
<tr>
<td>International arrivals – regular</td>
<td>601993</td>
<td>502503</td>
<td>562350</td>
</tr>
<tr>
<td>International arrivals – charter</td>
<td>42733</td>
<td>93303</td>
<td>114919</td>
</tr>
<tr>
<td>Ohrid total</td>
<td>42795</td>
<td>35072</td>
<td>72829</td>
</tr>
<tr>
<td>International arrivals – regular</td>
<td>25596</td>
<td>12547</td>
<td>14379</td>
</tr>
<tr>
<td>International arrivals charter</td>
<td>17199</td>
<td>22525</td>
<td>58450</td>
</tr>
</tbody>
</table>

Source: [SSO, 2008; SSO, 2010].

If we compare 2010 and 2007 data on foreign visitors, we can calculate that the number of visitors from neighboring countries has decreased for over 13% and number of tourist from the countries that use air transportation mentioned above increased for over 38%. This shows that share of international tourist that use air transportation to visit the country as a tourist destination is constantly increasing. One of the main reasons, beside tourist promotion is the increasing quality of air infrastructure which was not a case in previous years.

The air transportation becomes very important mode of transportation for the foreign visitors to the Republic of Macedonia. Infrastructure investments in the last couple of years are paying back and they seem to be a very important factor that has great impact on the number of incoming tourists. Having in mind that after landing the travelers use road transportation, the quality of road infrastructure should be improved in order to increase travelers’ safety and security and to improve national competitiveness in tourism, as well.

CONCLUSION

The Republic of Macedonia has a strategic geographic location in the heart of the Balkan Peninsula that as a landlocked country puts a special emphasis on land and air transportation. Two trans-European corridors – Corridor VII and Corridor X, which pass through the country, are part of the national road and railway infrastructure.

Although current road infrastructure is solid and has good quality, the general physical condition is on a lower level compared to the European experience and
standards. Highways and trunk roads, which have to carry the higher portion of traffic, are in better conditions than the regional and local roads, as secondary roads which represent more than 90 percent of the total road length in Macedonia. Road infrastructure on Corridor X is generally modernized which is important for increasing international arrivals, but Corridor VIII is slightly modernized and there is still a lot to be done for improvement. Railway infrastructure is in bad condition. Only small parts of railway Corridor VIII are in function and they are also in poor condition. There is still no railway connection with Albania and Bulgaria. It is one of the reasons why international visitors rarely use railway transportation to visit the Republic of Macedonia. Railway Corridor X is functional and the modernization is in progress. Still there are many things to be done for infrastructure improvement. Air transport infrastructure is in good condition due to the intensive investments in the last couple of years. The Turkish company took the international airports in Skopje and Ohrid under concession which led to improvement of the quality of airport infrastructure and increased number of passengers in air transportation in the last few years. Important for the airports is that they are well connected to Corridors X and VIII.

Most of the international visitors of the Republic of Macedonia use road transportation. The share of the air and railway transportation is not on the expected level. The air transportation is increasing in the last several years as a result of improved airports infrastructure. The number of passengers and international visitors that are using air transportation has a constant growth and the share of air transportation in international arrivals is rising. Therefore, one of the main reasons for the increased number of international tourist in the Republic of Macedonia is the air infrastructure improvements. The travelers, who arrive by air, use road transportation after landing in the country. Therefore, the good quality of road infrastructure is an imperative condition for national competitiveness improvements in tourism.

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MEĐUNARODNI TURISTIČKI DOLASCI I TRANSPORTNA INFRASTRUKTURA U REPUBLICI MAKEDONIJI: PREGLED PERSPEKTIVA

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