

Romania's Integration in the European Union. Comparative Study of the Perception upon Transport Development in Romania and Republic of Moldova

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Abstract: Romania's Integration in the European Union brought significant changes in Romanian consumer behavior. After six years since the great event it is interesting to discover the effects of the integration upon the consumer, regarding transport services. The purpose of the present research is to investigate the perceptions of Romanian consumers about the development of transport but also our goal is to compare these results with the one from Republic of Moldova. We used both qualitative and quantitative research. First we organized an exploratory research based on depth interviews and in the second part of the study we conducted a quantitative survey on 144 subjects from Romania and Republic of Moldova, with ages between 35 and 50 years. The results show the existence of significant differences between the perceptions of the consumers from Romania and Republic of Moldova.

Keywords: Transport, European Union, Romania, Republic of Moldova

1 Introduction

In the context of expanded globalization, transport development is a normal trend of global economical development.

The Communication from the Commission to the European Parliament and the Council- *Research and innovation for Europe's future mobility-building European strategies for transport technologies* (Bruxelles, 2012) mention that transport services in European Union represent 5.1% from total added value and 5% from force labor (11 million employees).

The same report point out that transport is the sector with greater industrial research and development investment amounts. The European transport policy was worked up by factors like: the impact of Common European Policy, trans-European networks, environment policy, the importance growth of transport industry and the enlargement of European Union (Jones, 2001).

The objectives of transport policy were set out in *White Paper – The Future Development of Transport Policy* in 1992. These objectives are: the improvement of transport system quality, the integration of transport policy in Common European Market, the development of transport connections with other non-EU countries. On September 2001, European Commission adopted a new *White Paper- European transport policy for 2010: time to decide*. This paper proposes 60 measures aimed at developing an efficient and durable European transport system and at avoiding economic losses caused by air and noise pollution, accidents or urban congestion.

White Paper - Roadmap to a Single European Transport Area - Towards a competitive and resource
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efficient transport system - adopted in 2011 is focused on transformation of European transport system into a sustainable and competitive system that will increase mobility. This White Paper on Transport mentions that: “it requires a new concept of mobility, supported by a cluster of new technologies as well as more sustainable behaviour.” (White Paper on Transport, p.12). The new transport system will remove major barriers in key areas and will grow employment rate. The objectives of transport policy refer to environmental improvements and the decrease of the accidents number. As Cohesion Policy and Europe 2020 strategy establish, it is necessary to implement a smarter, safer, greener and sustainable European transport system. One of the goals is the development of green technologies and a modernized transport sector.

Romania joined the European Union having a serious downshift for infrastructure, caused by under standards initial projection of networks and by the delays in maintenance and services. The roads of Romania are still the most dangerous from Europe and the average speeds for the cars are the lowest. In the railways sector, the speeds are also a problem. The safety is a main principle of transport sector, for all transportation modes. The quality of Romanian roads and railways is still very low, comparing the European standards.

In our study, we want to answer the **research question**: What are the main trends in transport sector in the last 6 years, in Romania (this country is a part of European Union since 2007) and in the Republic of Moldova (eastern neighbouring country).

2 Transport Analysis in Romania (2007-2012)

If we turn back in time, 6 years ago and we read Chapter 9 from the *Acquis Communautaire – Transport Policy*- we remember about the regulations Romania must keep and the changes which had to be done, as a European Union country, in transport sector. All the sectors need the development and modernizing transport infrastructure.

The *Acquis* for road transport mentions a large area of social, technical, fiscal demands and regulations regarding environmental safety and protection. For railway transport an opening of national railway markets to other similar structures of European Union countries is necessary. In air transport area, the most important problems which have to be solved are: gaining access to markets, safety and infrastructure organization. Safety is the main challenge for water transport.

Road transport

Over the years, for the road sector, National Road Rehabilitation Program in 15 stages (2000-2015) was the strongest strategy. Although, according Eurostat, Romania is one of the countries with the highest rates of road deaths (142).

Table 1 presents the length of public roads in Romania between 2007 and 2012.

Table 1 Length of public roads in Romania

Year	Length
2012	84.185 km of which 27665 km (32,86%) modernized roads
2011	83.703 km of which 26791 km (32,0%) modernized roads
2010	82.386 km of which 25171 km 30,6%) modernized roads
2009	81713 km of which 23847 km (29,2%) modernized roads



2008	81693 km of which 22865 km (28,0%) modernized roads
2007	80893 km of which 22042 km (27,0%) modernized roads

Source: www.insse.ro

Railway transport

In the first semester of 2012, railway passenger’s transport follows a decrease trend for number of transported passengers, compared with the results for the first semester (12.9%). Table 2 presents the length of railway lines in Romania for 2007-2012. No significant changes are registered.

Table 2 Length of railway lines in Romania

Year	2007	2008	2009	2010	2011	2012
Length	10.785 km	10.777 km	10.784 km	10.785 km	10.777 km	10.777 km

Source: www.insse.ro

Air transport

For air transport, it is important to mention the Aeronautical Research Framework Programme – FP7 lunched for 2007 – 2013, which includes the initiative called Clean Sky. The objectives of Clean Sky are: reducing with 50% of CO2 emissions, reducing with 80% NOx emissions for air transport, including aircraft and air traffic management systems. Single European Sky ATM Research Program (SESAR) has the main objectives: tripling the capacity of air traffic management systems (ATM) in Europe, improving safety, reducing with 10% the impact of each flight upon the environment, reducing with 50% of costs with air traffic management. Table 3 presents the evolution of the number of passengers from 2007 to 2011. We did not find data for 2012.

Table 3 Air traffic (2007-2011)

Year	2007	2008	2009	2010	2011
Passengers	7812012	9145979	9100938	7895237	8289998

Source: http://www.mt.ro/transparenta/2011/OMTI_PLAN%20National%20Aviatie.pdf

According to Eurostat, Romania was one of the EU countries reporting the lowest ratios for air and sea passenger transport (for 2010 and 2011): less than 1.0 air passengers carried per inhabitant in 2011. Table 4 presents a comparative situation of number of passengers for different modes of transport.

Table 4 Passenger intercity and international transport

Year	2006	2007	2008	2009	2010
	<i>Passenger intercity and international transport (thou passengers)</i>				
<i>Railway transport</i>	94441	88264	78252	70332	64272
<i>Road transport</i>	228009	231077	296953	262311	244944
<i>Inland waterways transport</i>	190	211	194	161	84
<i>Air transport</i>	5497	7831	9077	9093	10128



Year	2006	2007	2008	2009	2010
Maritime transport	-	12	38	13	23

Source: www.insse.ro/cms/files/Anuar%20statistic/17/17.10.xls

Road freight transport statistics of Eurostat show the change in transport by distance classes between 2007 and 2011 for individual countries. Romania recorded falls in all distance classes (table 5).

Table 5 Road freight transport by distance class (2011)

Class		Change 2007-2011	Class		Change 2007-2011
Less than 50 km	1740	-48.4%	500-999 km	4231	-18.9%
50-149 km	2590	-43.9%	1000-1999 km	7666	-48.6%
150-299 km	2804	-47.6%	Over 2000 km	4450	-77.5%
300-499 km	2899	-54.6%			

Source:

http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Road_freight_transport_statistics

3 Transport Analysis in Republic of Moldova (2007-2012)

ENP Country Progress Report 2012 mentions that the Republic of Moldova made good progress in almost all areas of the Action Plan approved in 2005. Between 2008 and 2010 the Neighbourhood Investment Facility commits nearly EUR 35 million to seven projects in Moldova, one of the beneficiary sectors being transport sector.

In 2008, Eurasia Foundation consider necessary to evaluate the public perception upon the improvements Republic of Moldova made cooperating with EU and implementing Action Plan EU-RM. The results of this study are presented in the *Report of Public Perception Evaluation Study Regarding the European Integration Process and the Implementation of Action Plan EU-RM*. This research was made on a sample of 1083 persons over 18 years age. 24% of the respondents are satisfied and 22% are indecisive regarding governmental efforts of transport, energy and telecommunication reforms implementation. 45.5% of the respondents consider that transport infrastructure did not develop, 39.2% consider that improvements were made and the rest of the people don't have an opinion about this subject. 57.9% of the respondents declare that the travels in EU did not become more accessible and safer. Only 27% have a positive opinion about this subject.

On the other hand, we analyze secondary data in order to see important trends in transport development. Table 6 presents statistics of number of passengers, by modes of public transport, from 2007 till 2011. We notice a decline for railway transport but also a growth for air transport.

Table 6 Passenger transport, by modes of public transport

	2007	2008	2009	2010	2011	2012
Transported passengers, thousand passengers						



<i>Transport – total of which:</i>	319060.6	326059.5	291843.3	232455.2	235728.3	
<i>railway</i>	5590.5	5762.9	5186.7	4963.7	4711.3	4015.7
<i>buses</i>	103183.6	110286.2	105805.8	105984.5	114677.2	117052.5
<i>taxi</i>	3413.8	4259.1	3836.4	4262.4	3307.6	-
<i>trolleybuses</i>	206338.3	205172.4	176436.1	116476.6	112209.2	-
<i>river</i>	119.2	105.0	118.7	118.8	122.6	115,7
<i>air</i>	415.2	473.9	459.6	649.2	700.4	673.0

Source: National Bureau of Statistics Republic of Moldova, <http://www.statistica.md/category.php?l=ro&idc=138>

Table 7 Length of communication lines

	2007	2008	2009	2010	2011
<i>Railways of public use in exploitation</i>	1154	1157	1157	1157	1157
Public roads – total	9337	9343	9344	9344	9352
<i>of which, with hard surface</i>	8791	8810	8811	8811	8827
<i>Of total public roads:</i>					
<i>National roads</i>	3329	3335	3336	3336	3336
<i>-of which, with hard surface</i>	3324	3335	3336	3336	3336
<i>Local roads</i>	6008	6008	6008	6008	6016
<i>-of which, with hard surface</i>	5467	5475	5475	5475	5491
<i>Trolleybus routes in exploitation</i>	306	306	306	306	306
<i>Navigable waterways of public use</i>	558	558	558	558	558

Source: National Bureau of Statistics Republic of Moldova

<http://www.statistica.md/category.php?l=ro&idc=138>

4 Comparative Study of Perceptions Regarding Transport Development

4.1 Research Methodology

The purpose of the research is to compare the perceptions of the consumers from Romania and Republic of Moldova upon the changes of transport services in the last 6 years.

There are 6 years from Romania’s integration in European Union and we want to investigate how are experienced the changes made in transport sector in our country. We also compare these results (for 2007-2012) with the results from Republic of Moldova, an eastern neighbouring country which is not a part of EU.

General Hypothesis: The perception upon the changes occurred in transport services is influenced by the country (Romania and Republic of Moldova).



Research objectives:

- (1) Investigating general perceived benefits in the last 6 years (Republic of Moldova)/from the Integration in EU (Romania);
- (2) Studying the perception about the development of different modes of transport in Romania and Republic of Moldova;
- (3) Investigating the changes in the travel consumers' behaviour in the last 6 years (Republic of Moldova)/from the Integrations in EU (Romania).

We used documentary research from secondary data, qualitative depth interviews and quantitative survey. In order to achieve the research objectives, we build a questionnaire using the results from the depth interviews. The subjects for the interviews were five people from Romania and five from Republic of Moldova (35-50 years). Using thematic content analysis, we identified and structured the following analysis themes:

Themes	Items
(a) general benefits from the last 6 years in Republic of Moldova and Romania	Economic benefits The development of transportation infrastructure Access to more modes of transport Access to more varying internal routes Access to more varying international routes More benefits as a tourist
(b) changes in consumer behavior regarding traveling abroad	Travel more often Feel free to travel in UE More transportation companies to choose from Better quality for flying-in transportation services Safer flying-in transport More convenient prices for flying-in transport Better quality for road transportation services Safer road transport More convenient prices for road transport Better quality for rail transportation services Safer rail transport More convenient prices for rail transport
(c) changes of different modes of transport	Internal road transport International road transport International low-cost flying-in transport Internal flying-in transport

	International flying-in transport
	Internal rail transport
	International rail transport
	Ship transport

We made a quantitative survey on a sample of 144 subjects (72 people from Romania and 72 people from Republic of Moldova), with ages between 35 and 50 years.

In the questionnaire we used independent variables (age, income, studies, gender, and location) and dependent variables: perceived general benefits, changes in consumer travel behaviour, and changes of different modes of transport.

The perceived general benefits from the last 6 years were rated on a 5 point Likert scale (1- strongly disagree, 5- strongly agree). For measuring the perceived development of various types of transport, we used a 10 point scale (1- not at all, 10-very much). Changes in consumer travel behaviour were rated on a 5 point Likert scale (1- strongly disagree, 5- strongly agree).

4.2 Results

The first objective was to investigate general perceived benefits in the last 6 years (Republic of Moldova)/from the Integrations in EU (Romania).

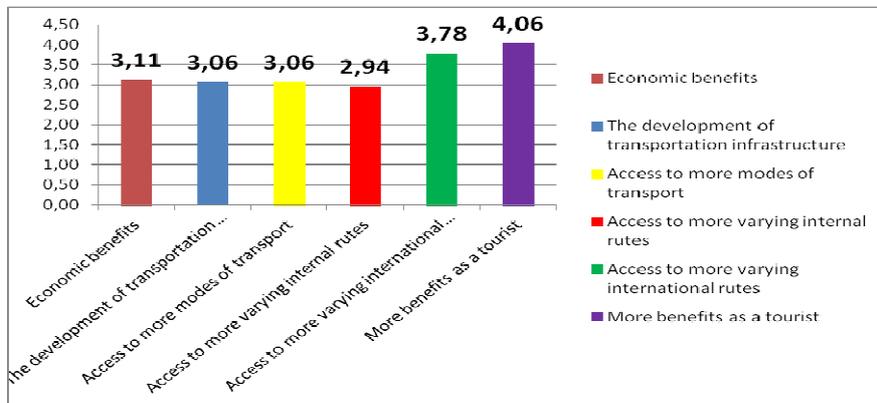


Figure 1 General perceived benefits since the Integrations in EU (Romania)

The perceived general benefits from the last 6 years were rated on a 5 point Likert scale (1- strongly disagree, 5- strongly agree). According to Figure 1, the Romanian perceived more benefits as tourists after the integration in UE (4.06). Also, they consider that they have access to more varying international routes (3.78) and benefit from more economical advantages (3.11).

The respondents from The Republic of Moldova (RM) declared that in the last 6 years they have access to more varying international routes (4.00) and have more benefits as tourists (3.5). Also, they have access to more modes of transport (3.12) (Figure 2).

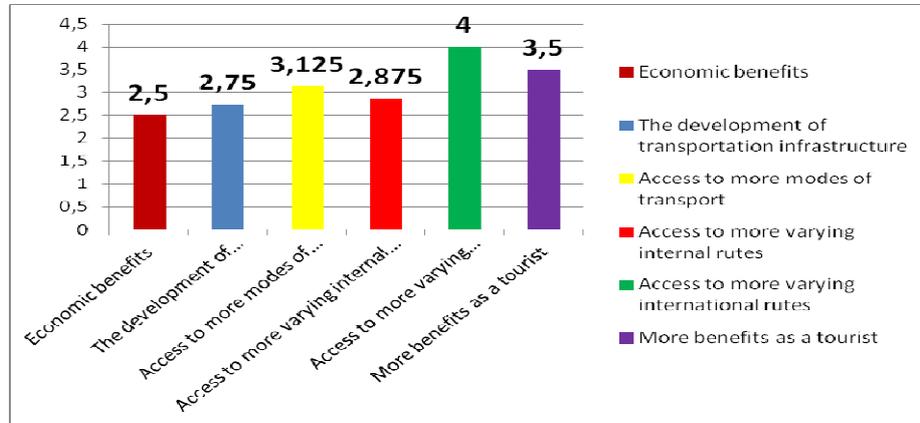


Figure 2 General perceived benefits in the last 6 years (Republic of Moldova)

Table 8 General perceived benefits (Romania and Republic of Moldova)

Perceived benefits	Average (Romania)	Average (RM)	t	Sig
Economic benefits	3,11	2,5	3.380	0.001
The development of transportation infrastructure	3,06	2,75	1.776	0.780
Access to more modes of transport	3,06	3,125	0.316	0.750
Access to more varying internal routes	2,94	2,875	0.311	0.750
Access to more varying international routes	3,78	4	1.601	0.110
More benefits as a tourist	4,06	3,5	3.246	0.001

Table 8 presents the comparative results for the two countries. We used Independent Sample T Test for investigating the difference between the two average values. There are significant differences between the perceptions of the Romanian and Republic of Moldova respondents regarding economic benefits and the benefits for tourism ($\text{sig} < 0.05$).

The second objective was to study the perception about the development of different modes of transport in Romania and Republic of Moldova.

On a scale from 1 to 10, the Romanian respondents evaluate the development of different modes of transport in their country after the integration. The best perceived development is for International low-cost flying-in transport (7.5), International flying-in transport (7.44) and International road transport (6.11). Less developed is internal rail transport (4.06) (Figure 3).

On a scale from 1 to 10, the respondents from the Republic of Moldova evaluate the development of different modes of transport in their country in the last 6 years. The best perceived development is for International road transport (7.37), International flying-in transport (7.25) and International low-cost flying-in transport (7). Less developed is internal flying-in transport (3.25) (Figure 4).

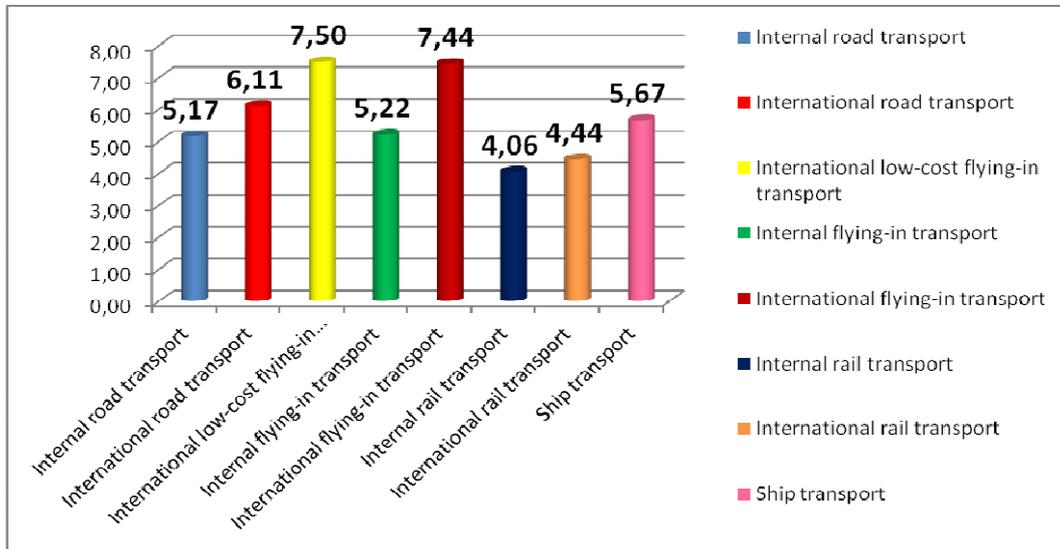


Figure 3 The perception about the development of different modes of transport after the integration in UE (Romania)

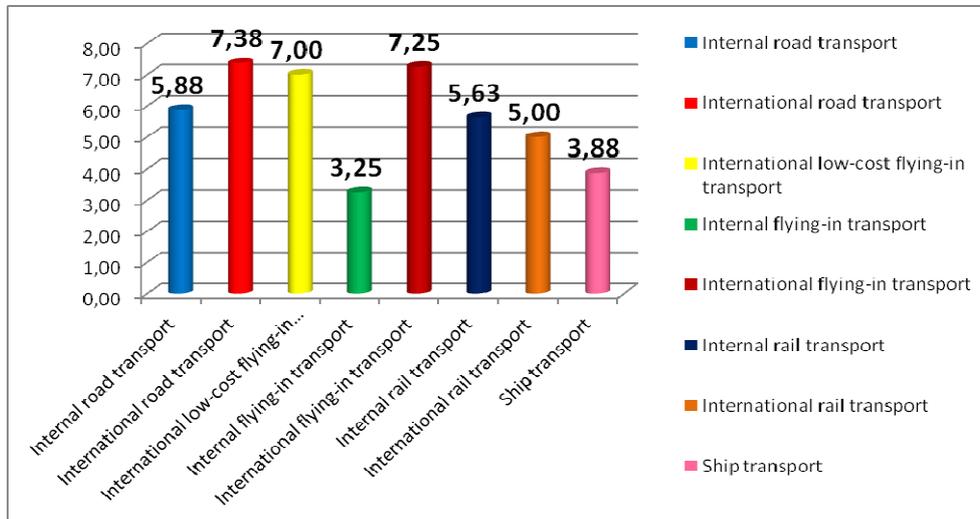


Figure 4. The perception about the development of different modes of transport in the last 6 years (Republic of Moldova)

Table 9 compares the results for perceived development of different modes of transport. We used Independent Sample T Test for investigating the difference between the two average values. There are significant differences between the perceptions of the Romanian and Republic of Moldova respondents regarding the development of international road transport, internal flying-in transport, internal rail transport and ship transport (sig<0.05).

Table 9. Perception about the development of transport (Romania and Republic of Moldova)

Transport	Average (Romania)	Average (RM)	t	Sig
Internal road transport	5,17	5,88	1.58	0.110
International road transport	6,11	7,38	3.42	0.001
International low-cost flying-in transport	7,50	7,00	1.78	0.760
Internal flying-in transport	5,22	3,25	4.93	0.000
International flying-in transport	7,44	7,25	0.61	0.537
Internal rail transport	4,06	5,63	5.59	0.000
International rail transport	4,44	5,00	1.65	0.090
Ship transport	5,67	3,88	4.94	0.000

The last objective was to investigate the changes in the travel consumers' behaviour in the last 6 years (Republic of Moldova)/from the Integrations in EU (Romania). As shown in Figure 5, on a scale from 1 to 5, the most important changes after the Integration in EU for the Romanians are: *More transportation companies to choose from* (4.11) and *Feel free to travel in EU* (4.00).

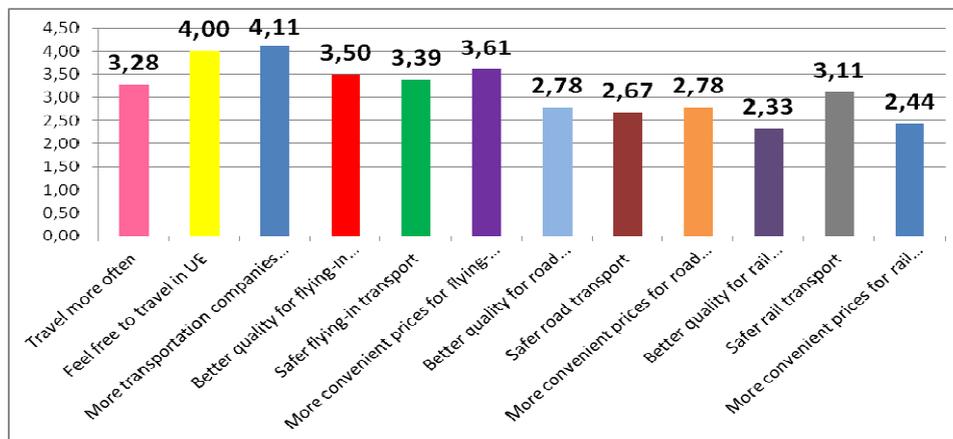


Figure 5. The changes in the travel consumers' behaviour from the Integrations in EU (Romania)

On a scale from 1 to 5, the most important changes in the last 6 years for the people from The Republic of Moldova are: *More transportation companies to choose from* (4.25), *Feel free to travel in UE* (3.88) and *Better quality for flying-in transportation services* (3.88) (Figure 6).

Table 10 compares the results for Romania and Republic of Moldova regarding the changes occurred in consumer travel behavior in the last 6 years. We used Independent Sample T Test for investigating the difference between the two average values. There are significant differences between the

perceptions of the Romanian and Republic of Moldova respondents regarding the changes in the travel consumers' behaviour in the last 6 years (RM)/from the Integrations in EU (Romania): *Better quality for flying-in transportation services, Safer flying-in transport, More convenient prices for flying-in transport, More convenient prices for road transport, Better quality for rail transportation services, More convenient prices for rail transport* (sig<0.05).

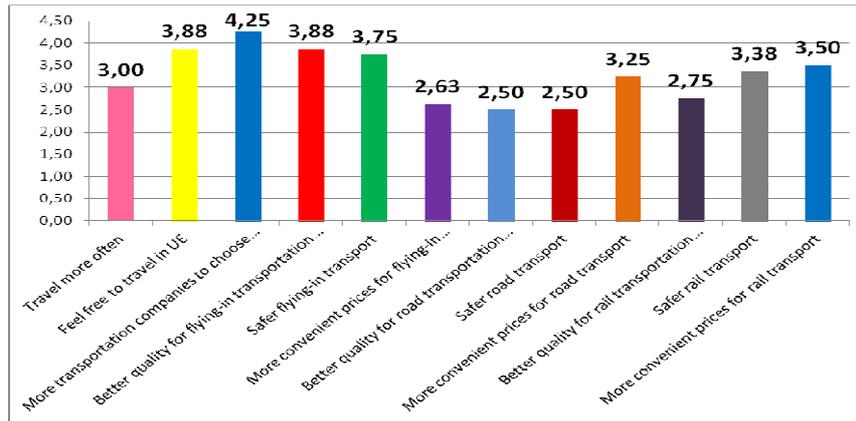


Figure 6. The changes in the travel consumers' behaviour in the last 6 years (Republic of Moldova)

Table 10. Changes in consumer travel behavior in the last 6 years

Changes	Average (Romania)	Average (RM)	t	Sig
Travel more often	3,28	3,00	1.30	0.195
Feel free to travel in UE	4,00	3,88	0.50	0.617
More transportation companies to choose from	4,11	4,25	0.94	0.347
Better quality for flying-in transportation services	3,50	3,88	2,92	0.004
Safer flying-in transport	3,39	3,75	2,77	0.006
More convenient prices for flying-in transport	3,61	2,63	6,72	0.000
Better quality for road transportation services	2,78	2,50	1.58	0.115
Safer road transport	2,67	2,50	1.10	0.270
More convenient prices for road transport	2,78	3,25	2,83	0.005
Better quality for rail transportation services	2,33	2,75	2,50	0.013
Safer rail transport	3,11	3,38	1.45	0.148
More convenient prices for rail transport	2,44	3,50	7,13	0.000

5 Conclusions

The Communication from the Commission to the European Parliament and the Council- *Research and innovation for Europe's future mobility-building European strategies for transport technologies* (Bruxelles, 2012) describe future directions for European transport development. A completely integrated and intermodal transport system, new services, a larger reliability and flexibility for passengers and goods owners, intermodal information, reservation systems and services are required. Romania must consider this modern vision and adjust in order to integrate the factors for progress in the actual system. The means of transport we use now will be replaced by new generations of safer, more silent and less polluted motor vehicles, aircrafts, ships and trains.

White Paper – The Future Development of Transport Policy proposes the integration of all means of transport into a single European transport system. The development of transport sector can be achieved by cooperation between sectors regarding the results of innovation. The innovation in transport sector might be influenced by the progress made in other sectors, such as telecommunication and energy.

The most important general perceived benefits in the last 6 years for Romanians are: benefits as tourists, access to more varying international routes, more economical advantages. The citizens from The Republic of Moldova consider that the most important benefits are: access to more varies international routes, more benefits as tourists and access to more modes of transport. There are significant differences between the perceptions of the Romanian and Republic of Moldova respondents regarding economic benefits and the benefits as tourists.

Regarding the development of different modes of transport in Romania, the results show that the best perceived development is for international low-cost flying-in transport, international flying-in transport and international road transport. In the Republic of Moldova, the best perceived development is for International road transport, international flying-in transport and international low-cost flying-in transport. Significant differences between the perceptions of the Romanian and Republic of Moldova respondents regarding the development of international road transport, internal flying-in transport, internal rail transport and ship transport were identified.

The most important changes in the travel consumers' behaviour in the last 6 years are the access to more transportation companies and the feeling of freedom in traveling in EU, both for Romanians and the citizens from Republic of Moldova. There are significant differences between the perceptions of the Romanian and Republic of Moldova respondents regarding the changes in quality for flying-in transportation services and for rail transportation services, safety flying-in transport, prices for flying-in transport and for road transport.

The present research is important due to the fact that presents the evolution of transport services both in Romania and Republic of Moldova, analyzing national achievements and objective data from national and international statistics but also the perception of citizens from the two countries. The results of this research might contribute as a resource to presents debates regarding the role of European Union in development of member states and other countries that desire the integration.

As future work, our goal is to continue the comparative analysis of other social and economical sectors from the two countries for the same period of time (2007-2012) and also for 2013 in order to assess the transformations and to assign the development trends of the two societies. We will also investigate the perception of citizens from Romania and Republic of Moldova about the advantages and disadvantages of European Union integration.



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