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## ASPECTS REGARDING THE EFFICIENCY OF THE TERTIARY EDUCATION IN INTEGRATED TRANSPORT, SUSTAINABLE WAY TO DEVELOP THE PUBLIC POLICY

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### ABSTRACT

*Starting from the two last decades of the last century, the development of transport is tending more and more towards the contradiction that brings increasing demand for transport and environmental pollution. The blocking of roads by their vehicles overcrowding, especially private cars, has become a common phenomenon. The transport development trends in condition of the free market competition are showing irrevocably, that the roads will continue to increase their share of passenger and freight transport in the coming decades. As a result of this expectations investment in the roads are expected to increase further. The question arises. Can investment in roads solve the contradiction between transport development and environmental pollution? The example of Albania, especially the social economic development of Tirana - Durres axis shows that investment and supporting policies only on roads are not the right solutions to the problem. Unfortunately, though these big investments, social costs of transport in this area are growing steadily. It is necessary to understand that the support of the policy of investment in integrated transport is the only way to reduce social costs and ensure a sustainable development of public policies in the transport sector.*

**KEYWORDS:** *integrated transport, sustainable development, public*

**JEL CLASSIFICATION:** *M14, M38, N40, R40*

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### 1. INTRODUCTION

Public transport policy improvement is part of the public sector development in nowadays society which tends to urbanize at highest rates. Large cities produce more and more movements from those to work, shopping, tourism and other spontaneous of every day.

Radial movements from the center of the cities to the periphery are not enough to resolve the demand of movement problem. Already orbital and radial movement directions create together a dense network with many interchanges in their intersection. In the same time situations of intense movements are increasingly observed in the highways between the cities. Let us firstly take into consideration the axis Tirana – Durres.

Democratic development favored by the geographic position and migratory population movements from all over the country to the space between Tirana and Durres, have made this axis the richest market in all the country. Albania has an average population density about 100 inhabitants per kilometer square, but with significant deviations of its various areas.

Mainly the population is concentrated in the western lowland, where lives more than two-thirds of its, with a density about 200 inhabitants per kilometer square. Part of 2001 census and preliminary data of 2011, take in consideration this lowland population with higher density

compared to the rest of all the country lives in the Tirana – Durres area, where the density of the urban part of the respective cities (Tirana and Durres) ranges from 6500 to 8500 inhabitants per kilometer square. Axis Durres - Tirana, will continue to represent the most affluent markets in the country, will continue to attract more and more movement flows from other domestic markets, which are poorer related to it.

Such a position will continue for a long period, as will continue the migration rates of population for a better life. This time extension will be strongly conditioned by the financial inability of the Albanian government to take strong measures as economic incentive in the backward areas.

Albania has still a small number of vehicles, despite the significant growth of the passenger and goods movement in her territory. For example, in 2011 in Albania resulted 141 motor vehicle per 1000 inhabitants, a number two or three times lower in comparison with neighboring and other countries of the European Community.

Yet environmental pollution and blocking roads in the axis Durres - Tirana are becoming more and more disturbing within the two respective cities, as well as in the connecting highway between them. The same is happening in the Milot – Rrogozhina area, especially on Milot - Tirana and Durres –Rrogozhina highways axis, representing simply an extension of the Tirana – Durres area problems.

In general, European experience and further indicates that the biggest beneficiaries of the growing movement tendencies are the roads. Starting from the second half of the last century and in the next, the biggest share of the increased demand for motion has passed through them. This tendency continues to be more dominant in the early decades of the current century. Along with the continuing importance and priority that represent the roads to passengers movement and goods delivery, their overpopulation is producing external cost in the form of environmental pollution and as well as their blocking.

These environmental costs are taking such important proportions affecting decision making policy in different countries of the European community and beyond.

Further the experiences around the European Community and other countries over the world are showing that despite the high rates of investment in roads, as in their construction, reconstruction and maintenance, they remained tight places to face the increasing demand for motion in goods and passengers too.

This leads to the question if the trend for investment in roads will create a sustainable solution to the problems raised above. Further we can discuss the ability of free transport market to resolve the road blocking and environmental pollution problem.

Apparently investments in roads can not give a definitive solution to the problem and the development trend of free transport market doesn't have all the necessary mechanisms for solving these problems.

## **2. WHAT IS AN INTEGRATED TRANSPORTATION POLICY?**

Despite the evolution in the vehicles technology and qualitative changes of transport infrastructures management, for a considerable period of time following the first half of the 21 century, the only option to solve the problems discussed above remains integrated transport. But what is an integrated transport?

According to Stuart Cole (2005) a prominent researcher he define: "Integrated transport" may be defined as a cross analysis of different mode of transport (road; car, bus, tram; rail) and different investment options for providing solutions to the two main problems arising from the growth in car and truck usage:

1. Congestion;
2. Pollution.

The solution about the contradiction arising from increased demand for movement with the environmental pollution and the roads blocking, defines the mission of the integrated transport. If this contradiction doesn't exist, then the integrated transport would not make any sense. As you can imagine the integrated transport comes in help to the social development, when social costs which manufactures private market, become uncontrollable, due to the maximum profit intention of transport operators.

This indicates that unlike the purpose of a private operator, which is the maximum profit, the integrated transport policy has a diametrically opposite purpose, the social interest. Or else we can say that when the development in a productive society arrives such level, when private market does not possess all the necessary mechanisms to solve external cost of environmental pollution and road congestion.

Integrated transport is guided by the objective to use of a fair and efficient pricing policy in the transport sector.

To be oriented in such a position should be explained the difference between the private or internal costs of transport operator and external and social costs that create transport service users. Internal transport costs are caused from the transport operator and covered by the income activity, while the environmental (external) costs are caused by transport users and usually paid by others or society. The meaning of a fair political price is just the internalization of external costs (social) and consequently of their payment from the user of transport service.

Such treatment of the price policy can be considered in the case of infrastructure utilization differences between different kinds of transport. In this case the redistribution of cost can be accomplished by loading all internal and external cost the users of respecting type of infrastructure. A fair and efficient pricing policy can not follow the principle that any investment made on public transport must be prepaid by its users.

This would mean that if is invested in a rail system in order to convince the vehicles users to leave them and use the train, then tickets to travel by train should not increase due to the investment carried out for the improvement of railway service (from buying new trains or railway stations rehabilitation). If price of tickets in this case would increase, the number of public transport users, would decrease due to the price increase. And because of the cross price elasticity effect they could return to the road transport.

So an integral price policy should take into account a single assessment to consider the transport market as a single one. In our case the road and rail transport market being treated as a single market would require common solutions to problems.

### **3. THE TRACES OF INTEGRAL TRANSPORT IN ALBANIA**

Intensive development transportation period in Albania has its beginning in the common property economy system during the second half of the twentieth century.

The rapid growth of the population and its distribution in smaller urban centers throughout the country made it possible the use of economic resource, wherever they were and in the same time it increased the movement for work, social problems and goods transport in form of raw materials and products.

1. **For the passengers** in that time it was used the mixed transport (train – bus). Under this scheme, passengers were obliged to travel by train along the entire railway network expansion, when all their journey covered by rail. If the points of departure of their

travel were far from railways, buses used from departure point of their travel up to the closest railway station, or otherwise when arrival points of travel were outside the rail, buses were used from the train station to the final travel destination. In this role the railway had the burden to cover the demand for passenger transport in all stretching rail network areas. This combination train - bus continued over the course of several decades and he managed to cover 80% of the volume of passenger transport in the country.

Although treated as a mixed transport, according to contemporary terminology, it can not be regarded as an integrated transport. This for reasons and elements listed below:

**a.** *The integrated transport* is a necessity inseparable from its purpose, namely for the removal of cars and trucks from the roads, highway etc. This determining factor at that time did not exist. The concept of integrated transport has its origin in the last decades of the last century and is the result of the overcrowding roads and highways from motor vehicles and a relative decline of the share of passengers and freight rail transport.

**b.** *The mixed passenger transport* (train – bus) in the common property system does not take into consideration elements of environmental pollution or road overpopulation but those of the communist state, which argued the launching of the railways in the game to low energy consumption in relation to road transport and Albanian economy becomes more independent from drawing a larger quantity of foreign currency that would require road vehicles for their acquisition and maintenance. In conclusion we can say that mixed transport was practiced in Albania only with intention to reduce the operation transport cost of the state and not to limit the spontaneous direction of the competition forces in the free market. However, bearing an element of the state's transport policy at the time, he carries a very important social element of integrated transport, the plannification.

It is this element that makes it necessary to study the ex experience of the mixed transport during this period.

**2. *Even the goods transport*** in general was conducted by the same principles as that of passengers. Most of transport practiced at that time by naming (multi - modal) and involving goods aggregates (sand, gravel, minerals and others), who started from natural sources outside the railway network and loaded into trucks and brought to relevant sites and warehouses in railway stations and through trains transported to the respective districts where they will be used.

**3. *Intermodal transport or transport with containers*** was firstly used when it was finished the connection of the Albanian railway network with that of the (Montenegro) through the Bajza railway border crossing point.

Containers usually came with foreign specialized coaches to our railway stations and then were transported with trucks to the final district destination.

### **3.1. Why must we follow the integrated transport?**

Compared with the communist period, Albania has another distribution format of the population. Migratory movements of people from the north, north - east and southeast towards the western part is the main factor of this change.

In the main part these movements were aimed to Tirana – Durrës axis, where there are the most potential markets of the country. In this context the inhabitants' number of Tirana and Durrës axis is increased more than twice. The data base of 2001 census and preliminary data of 2011

census account that in Tirana from 250 thousand people today appear to have an urban population about 700 thousand inhabitants and Durres from 90 thousand to more than 250 thousand.

All area between the two cities tends to become a single urban area, where resides more than half the country's population. In this situation increased demand for motion brings its consequences in several directions:

1. In urban mobility within the two cities (Tirana and Durres) the growth of flow of cars brings higher costs in the form of environmental pollution and traffic difficulties due to roadblocks. Consequently, it is strengthening the tendency for more developed urban transport based not only on the outskirts center radial movement but also in circular movements, to create as many exchange points of the intersection of these two movements kind. This conception of urban transport seeks to increase the involvement of residents in urban travel tools in order to release the roads from private cars and air pollution.

2. In the movement between these two cities, where due to rising the number of private vehicles, road congestion especially in the entrance of Tirana and along the highway between two cities, has become a common phenomena. Interurban transport carried out more with buses and vans aims to attract travelers from cars for the same purpose as mentioned in over in the first paragraph.

3. The movement from these cities in the green area nearby. In this case the presence of public transport aims to establish connection for many social and economic reason, as well reduction of private cars in this movement direction.

4. In the movement of the rest of the country in the direction of the Durres – Tirana axis. Because of the richest market that represents this axis, the public transport helps the creation of the passengers' facilities for social or business purposes, as well as trying to reduce number of private vehicles to avoid roads overcrowding and their pollution along their alignment. As it is evident in its essence, public transport in its core concept has integrated transport.

5. Increased movement of goods (containers) and passengers of the port of Durres, passenger at the Rinas airport and the construction of the new Albanian highway section, as part of the North-South European corridor in this area.

All this factors will increase movement volume and necessity for the integrated transport.

### **3.2. What should be done in the future if highways and roads can not solve the transport problems?**

Increased demand for motion in Durres – Tirana axis is associated with the construction of several roads and the restructuring of some existing ones, as within the respective cities and between them. Perhaps it would be incredible that in the span of a little more than a decade ago the connecting highway between two cities is over populated from motor vehicles, mostly private cars, in such a proportion that bottle neck phenomenon and environmental pollution constitute a very serious problem.

However, as in the experiences of other countries, it is already reached the conclusion that investments in roads and highways are not enough to solve environmental pollution and their blocking problems.

Despite the large size of the investments made, they always remain insufficient and more and more roads and highways are showing moving difficulty and not perspective solution to

environmental costs. Following the situation in Durres – Tirana axis, environmental problems treated before in this material, are being noticed even from Tirana to Milot and from Durres to Rrogozhina, especially in summer.

The highway axis from Tirana to Milot, from Fushe Kruja to Vora and from Durres to Rrogozhina are either newly built or not fully finished. So intense movement area to passenger and goods gradually is expanding from Milot (on the north of Tirana) to Rrogozhina (on the south of Durres) and these axes perspective who must resolve the environmental problem gradually are becoming part of the problem itself.

### **3.3. Milot - Rrogozhina should be considered a unique area**

Milot - Rrogozhina area is simply an expansion of the Tirana – Durres axis area, with the same environmental pollution problems, with the necessity road perspective and rail transport integration. Migration will continue also in the future, until the Albanian society creates conditions for balanced development of different regions of the country.

Let us take into consideration the transport of passengers from north or northeast regions in the direction of the Durres – Tirana axis.

These passenger transport currents come from several directions highway axes to Milot, where passenger vehicles move in a single highway line from Milot to Tirana, where is their destination and vice versa.

The same configuration is created considering the various passenger currents directions originating from south and southeast of Albania to join in Rrogozhina and from here all passengers vehicle followed their travel in the single highway to Durres and than to Tirana.

The segment in which these passengers streams join from Milot to Tirana or from Rrogozhina to Durres create benefits for roads, which carried more than 98% of the transport demand. In the same way these currents of passengers in these areas may favor the railway passengers' transport, because parallel to these highways axis extends railway lines.

So all streams of passengers movement from north and northeast and that from south and southeast of the country can be shifted to rails exactly on Milot - Vore - Tirana and Rrogozhina - Durres – Tirana axes (Figure 1).

As in the Durres – Tirana axis, the same as in the Milot – Rrogozhina axis, could be repeated again the question: "What kind of transportation must select to interurban passenger movement service, that with buses and vans or that with train?" like in the study of the future Role of Albanian railways (1995) realized by World Bank suggest a question:

The answer to that question would remain in the decision making between investing an integrated transport policy or funding roads investments to continue with vehicle passengers transport service

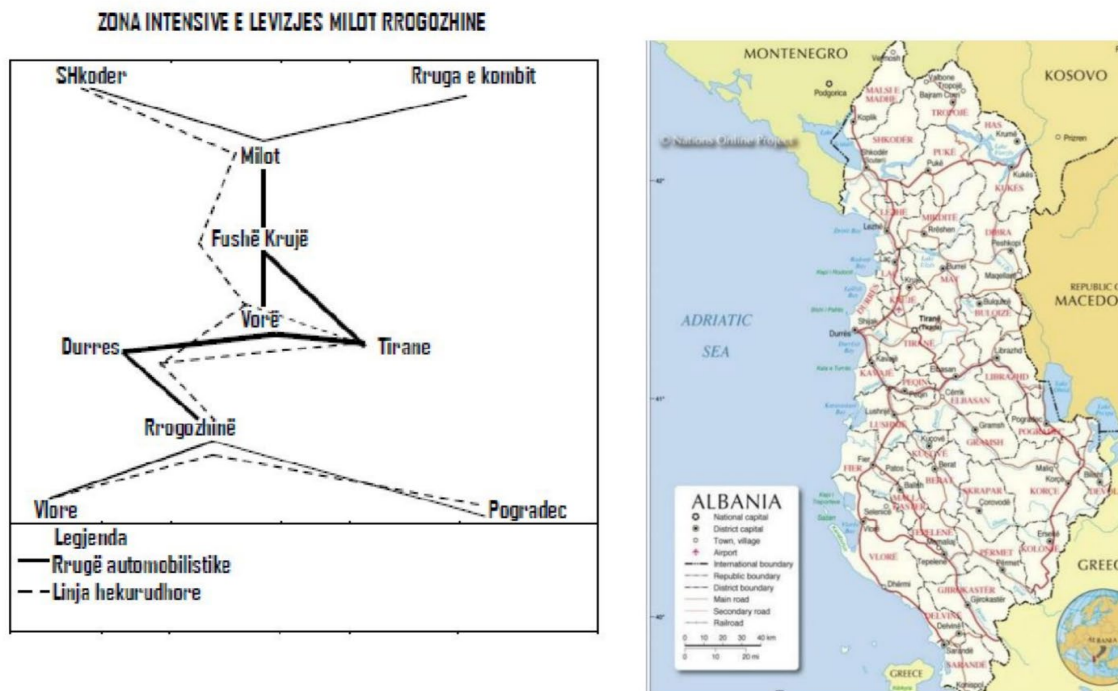
Investments in roads, as we saw don't support a sustainable solution to transport problems, while on the other hand the great prospects of passenger transport growth belong to them.

In these conditions, the flow of investments in the railway can only be accomplished by following policies of integral transport.

Contrary to the policy followed till now to public transport, integrated transport requires cooperation of all types and transport modes, in order to reduce the load movement on roads.

For all these reasons the development of public transport in this area needs to rely on a developed railway infrastructure, in the same level of investment made on the roads of this area (Directive of the European Community to draw the investment levels in some types of

infrastructures in order to develop the Integrated Transport). A benefit- cost analysis with a wide social range, will be necessary for this purpose.



**Figure 1. Albanian axes**

Source: [www.google.al](http://www.google.al).

The benefit cost - analysis must be developed on two levels:

- As exclusionary choice between bus and vans on one side and train on other.
- As justification for investment in the railways, to build its support scenarios in axes mentioned above.

Considering Milot - Rrogozhina extension as the one single urban area we can draw clear conclusions over the necessity of the integrated transport policy.

All axes distances between centers of this area, beginning from Rrogozhina to Durres, from Durres to Tirana and from Tirana to Milot are less than fifty kilometer, so may be considered as the distances will in an urban area.

This treatment of the problem is simply mechanical and does not make the core of the problem conception, if the area that we are dealing would not have faced in the perspective the same problems of environmental pollution and road congestion like the Tirana – Durres axis.

In such a situation, the expansion of integral transport policy in this area, which can be considered as an extension of the Tirana – Durres axis, constitutes an important step towards the creation of a national transport model oriented to integral transport policy.

#### 4. CONCLUSIONS

During the last two decades the main highways axes of Albania are almost new constructed. But the problems of environmental pollution and their jams are beginning to be visible.



By underestimation of investments in the previous political regime, the country inherited a road system of insufficient standard. So it was normal the concentration of investments in highways asks in the early democratic period.

But together with the rapid democratic development, urbanization and migratory population movement is noticed the road overcrowding with cars and other transport vehicles, early in the Tirana - Durres axis and after in a wider area around it. Albanian example showed that despite investments in new highways, in a very short period of time, they began to return to tight places to face movement, producing social costs from environmental pollution.

Parallel to the main highways axes newly built in the center of the country (From Milot to Rrogozhina area), where the movement is intense, it extends the rail line, currently facing a negligible volume of the country's demand for transport.

The arguments used in this material necessitate the investment in the integral transport policy, to make possible a sustainable solution to the problems outlined in this paper. Railways and roads generally share the same passengers and goods market in Albania.

In this regard, the most important step for building a sustainable solution to the problems addressed in this paper would be the direction of investment in rail service. Lack of investment in the Albanian railways during the past two decades has created an unjustified gap compared to highways.

Return of investment in rail infrastructure to bring it to a comparable level with road infrastructure is the purpose of this paper.

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