

FEASIBILITY OF REVIVING AND DEVELOPMENT OF LOCAL PUBLIC TRANSPORT IN LITHUANIAN REGIONS

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The paper describes the problems of passenger transportation by local bus transport and possibilities to support rural public transport integrating it into the national and European passenger transportation networks. The emphasis is placed on Lithuanian local bus transport companies' capability to attract more passengers. The situation in the public transport market is analysed and major factors influencing the passenger flows on bus routes in Lithuania are described. A forecast for local passenger transport development is also presented.

Keywords: *passenger transportation, local bus transport, public transport market, integration into a network, transportation forecasting*

1. INTRODUCTION

The study of public transport services provided in Lithuanian depressed regions had shown a threat for public transport system to lose passengers because the provided services do not satisfy their needs and are unattractive to them.

The economical situation in public transport in rural areas is worsening due to the increasing problems associated with not satisfied demand for transportation in villages and settlements. These problems should be solved as soon as possible all over the country.

Well-organized transportation is very important for any community. The demand for transport services is increasing and can usually be satisfied by public transport. The public transport system is performing well on urban and interurban routes. Suburban and regional transportation presents a lot of problems associated with economic and social development of particular regions.

Regional bus companies deliver local transport services and local government is responsible for the provided services and quality control. Regional municipality is responsible for satisfying social and economic needs of inhabitants. On the other hand, it is directly responsible for the implementation of the state social policy, the key priority of which is realization of strategic means of the sustainable transport development within a regional spatial framework.

The strategy is aimed at supporting the sustainable integration of social life and economic activities, transport infrastructure development and provision of ecological transport services. It is important to coordinate public transport services and the use of personal cars to satisfy the demand of rural inhabitants and tourists.

The coordination of various means of passenger transportation is one of the main EU goals in the context of the development of a unified transport network and with respect to each national self-governed area.

The boom of cars spreading all over the territory of Lithuania acts as a catalyst helping to overcome economical stagnation and revive social life, stimulating the political-social activities of local communities. The investigation shows that the rate of motorization is increasing non-uniformly in different regions of the country. It is still necessary to provide public transport services in the rural areas, inhabited by elderly and state-supported people who can't afford to buy automobiles or drive them.

Seeking to ensure equal possibilities to all members of the community to participate in social life and to move freely for business, educational or entertainment purposes, municipalities should support the use of public transport alongside cars and other means of private transport.

The commercial activities of bus companies are linked with a particular regional passenger market depending on the amount and categories of passengers, the location of settlements, available transport infrastructure and social-economical development of a region. The existing problems of bus

companies are associated with large expenses caused by privileges granted by the state to some groups of passengers, worn-out, low labour productivity, inefficient use of equipment, etc. An imperfect tax system, lack of a compensatory mechanism, investments and financing, as well as some external market factors, i.e. rising prices of fuel, spare parts and vehicles, hamper the performance of public transport companies. The lack of financing aggravates the economic situation, increasing debts and transport tariffs. This leads to a decrease of passenger flows and reduces the income of transport companies.

Analysis of the situation in Lithuania shows that the problem of maintaining state bus companies is very acute and complicated. Control and management in this area should be improved considerably. A non-monopolistic market of transport services should be created and unprofitable companies be restructured to be competitive on the market.

2. METHODOLOGICAL SOCIAL AND ECONOMICAL PRINCIPLES OF BALANCED TRANSPORT SYSTEM DEVELOPMENT

Lithuania is divided into 10 regions and 60 municipalities with respect to particular towns and districts. The population of the country is 3.45 m, with 67 % of urban and 33 % of rural inhabitants. Average density of population is 52.8 per km². Lithuanian cities and towns make an integral spatial framework for urban development in the country, while regions have no particular landmarks and guides. Therefore, the major trends of their development may be determined only from the data provided by economical and social-economical studies, which are not directly connected with the problem considered. Balanced development of individual regions is closely associated with the development of transport and changes in the living standard of the population. In preparing development programmes and investment projects nine key criteria reflecting various aspects of life are now commonly used all over the world. They are as follows:

1. Demographical;
2. Social and cultural;
3. Health;
4. Economic;
5. Urban;
6. Transport and development of its infrastructure;
7. Environment;
8. Use of land;
9. Recreation.

The above set of criteria is now used in Lithuania for developing a master plan of spatial development and is recommended for the analysis of the state of development in regions, municipalities, towns, etc. In making the present study of the development of bus transport in particular regions, the above recommendations were taken into account. The criteria having a statistical expression that were obtained in testing and can be applied to complex analysis and prediction of development were used.

According to the programs EGDP and VASAB2010 describing the trends and strategies of territorial development and visions of the Baltic region's development, the projects for the particular regions should be based on:

- Multi-centred spatial development;
- new relationships between urban and rural areas;
- equal accessibility of infrastructure and data;
- proper management of historical and cultural heritage.

Lithuanian researchers and designers attempting to develop and maintain a balanced transport system in Lithuania, rely on the principle of competition among particular regions and non-uniform development of territories. They are searching for methods of developing the outlying districts of the country and creating the hierarchical infrastructure [1, 2, 3]. In addition, some specific economic and engineering criteria are taken to assess the technological aspects of transport infrastructure.

The framework of transport infrastructure

To create an up-to-date and attractive framework for transport infrastructure in Lithuania and to provide the respective transport services, the framework of the road network based on hierarchical road development system has been made. Lithuanian transport system and its infrastructure are integrated into the EU transport network because two of the nine transport corridors for trading and fast transportation cross Lithuanian territory. These roads are included in the list of transport lines to be analysed by TINA, a program for identifying the lacking elements and parts of the network that

should be built or require reconstruction or upgrading. The next level is associated with arterial roads either extending the network presented by TINA or making the key elements of the national transport system connecting the above network with the major cities and road junctions. Finally, at the base of the structure local roads providing the main roads with flows of passengers and goods are found.

All regional centres are connected with other towns, centres and settlements by a network of local roads. Local roads not belonging to the higher level of the structure will be developed according to the program of covering crushed-stone roads with asphalt and pavement maintenance.

A balanced regional transport system

One of the goals pursued by the European Union is to revive local transport in the regions where it has lost its positions. To pursue this policy in Lithuania, efforts should be made to solve the following problems:

- 1) to make transport services more easily accessible to rural inhabitants;
- 2) to improve transportation of rural inhabitants to workplaces and consumer service establishments;
- 3) to facilitate physical accessibility of transport services
- 4) to improve the available transport services by integrating them with other services;
- 5) to provide quality services to customers based on precise information;
- 6) to provide customers with quality services at low cost.

3. THE INFLUENCE OF TRANSPORT SERVICES ON THE MARKET OF PASSENGERS

Restructuring of production forces and transport services

During the last ten years the economic changes in the state caused the restructuring of production forces. As a result, new business, industrial and agricultural centres emerged. Lots of enterprises were restructured to form smaller units or were closed. New trades and small and medium-size businesses emerged. The market of labour and services as well as the capital market was restructured and the location of many enterprises changed. This caused the restructuring of transport routes. The existing transport system could not satisfy the requirements of passengers who demanded better services, schedules and new transport routes.

The analysis has revealed differentiation of inhabitants in terms of their financial state depending on the territory where they lived. In some areas the inhabitants lost means of subsistence because of reforms in industry and agriculture, lack of investments and working capital, especially in the areas near the state borders. The latter became the depressed regions and suffered even more when young people searching for jobs emigrated to towns and cities. This caused a decrease of passenger flows and the demands for transport services. The gap between the rate of development of cities and settlements increased, showing itself in industry, housing construction and transport [4, 5].

However, tourism and trades may be developed in such regions. It is expected that small businesses, ecological farming and branches of economy requiring highly qualified labour force will emerge there in the future. The activity of the inhabitants will stimulate the application of new technologies and the creation of new jobs in business thereby raising the living standard and the creative potential of the community as well as the demand for various transport services.

Public transport services provided to passengers. The inhabitants of the regions analysed use public transport depending on how attractive it is to them and how it satisfies their needs for transportation. In rural localities bus schedules are not regular in daytime. Such schedules satisfy people whose work schedules match those of bus traffic. The inhabitants actually depend on bus traffic schedules and try to settle their affairs according to them. This particularly applies to children, students and elderly people. Recently, the unemployed and some workers have joined their ranks.

Rural inhabitants enjoying state-provided privileges make the main body of passengers of regular transport (figure 1). However, the number of schoolchildren using it is continuously decreasing because of recently introduced school buses that are the rivals of regular public bus transport. These buses often illegally carry passengers of other groups of population.

Route buses take 30 % of schoolchildren, while yellow school buses have considerably decreased the total number of their passengers. School buses carry about 60–70 students a day. Schools own them and do not employ drivers from public transport enterprises.

Passengers not having state privileges on transport do not regularly use local public transport in rural localities.

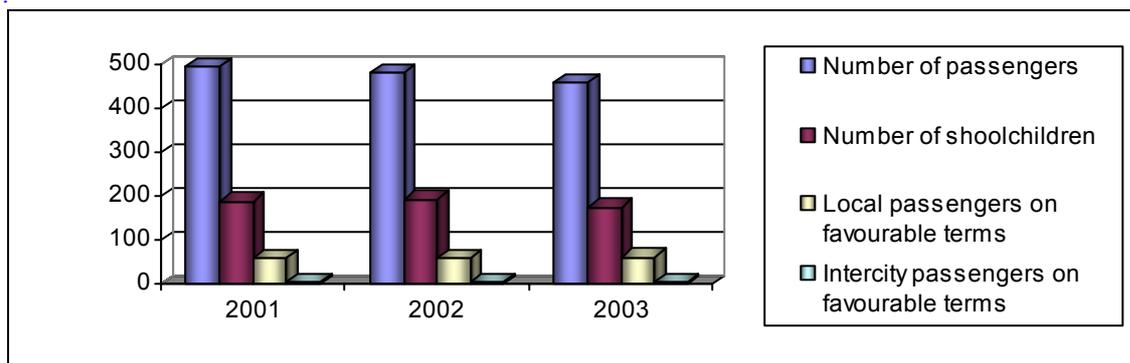


Figure 1. Ignalina region passengers carried by bus fleet on favourable terms [6]

When these passengers use buses, they use them for many purposes. However, personal automobiles compete with public transport as far as this group of passengers is concerned (figure 2). Motorization rate in the country is rapidly increasing. Now, 340 cars per thousand of inhabitants are registered, not taking into account motorcycles.

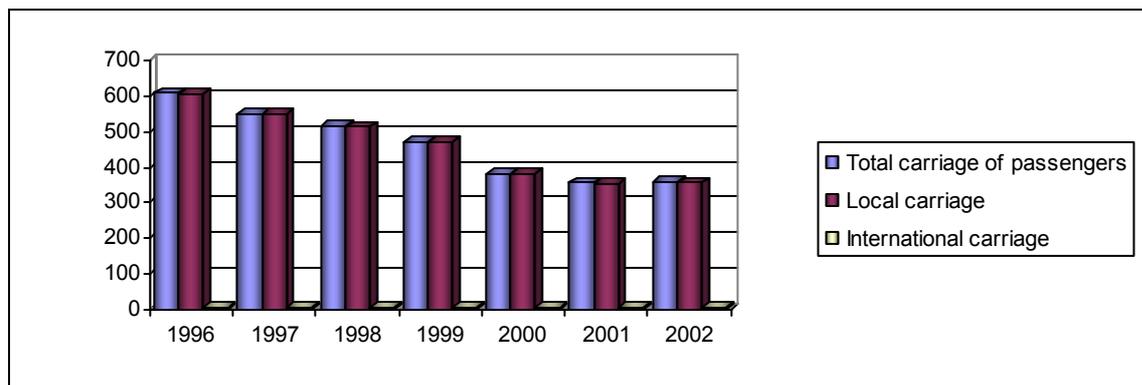


Figure 2. Decrease of public transport passengers amount because of general overflow of cars

The influence of telecommunication and information technologies on the mobility of inhabitants has also been studied. Unfortunately, the use of personal computers and the Internet in rural localities is rather limited. Only 15 computers were available for 100 households in 2004, while half of the households owned personal cars which are much more expensive [4]. Computerization is associated with information dissemination programme via educational institutions. In regions, all schools and other educational institutions have computers with a stable Internet connection. Information technologies are expected to reduce the number of trips and the traffic, especially by public transport. This will result in saving time and energy of inhabitants as well as resources in transport. On the other hand, the flows of passengers will also be considerably reduced due to the wide spread of computers and telecommunication.

4. MAJOR CHANGES IN THE PERFORMANCE OF BUS COMPANIES

The research has shown that problems arose in making traffic schedules satisfying the needs of rural inhabitants because of reduced flows of passengers and economical depression of the regions. It resulted in the reduction of transport services, with some of them being not daily provided. The situation has become critical when the inhabitants are provided with transport services only on some particular days of the week that cannot satisfy them. It is expected that when people can pay the full price for transport tickets, the situation will improve.

It can also be expected that, when the demand for transport increases, the number of daily travels and the distances covered will also increase. The number of travels per capita should increase from 56.3 (in 2003) to 110 at the end of the planned period, while their distance could reach about 12 km. If the circumstances are favourable, these changes may be expected on the revived market of transport services.

The comparative analysis of public transport enterprises has shown that only 13 out of 43 bus parks provide services on suburban routes. This is the main reason for low demand for transport services in small settlements and villages with continuously decreasing number and mobility of population. Under these conditions, bus companies use the traditional methods of maintaining the lowest tariffs on the routes in depressive regions. Some other enterprises belonging to municipalities are making efforts to train the inhabitants to pay a higher price for transport services and make profit on these routes. Rural inhabitants are carried by local route transport, with the number of routes exceeding 1016. Since these routes tend to get shorter, the runs of buses are also minimized (figure 3). Streamlining of transportation on unprofitable routes reduced the income of the companies. On the other hand, it allowed them to reduce operational costs and expenses associated with privileged passengers.

Unfortunately, bus parks have not got the sufficient financial support during the considered period, therefore, the carriers ran into debts. In this environment, the situation may improve due to better state financing and investment policy as well as depending on the EU strategies and rate of developing public transport as well as on the levers used. To day, there is a lack of a legislative basis and adequate instruments to change the situation, therefore better financing of municipalities can hardly be expected.

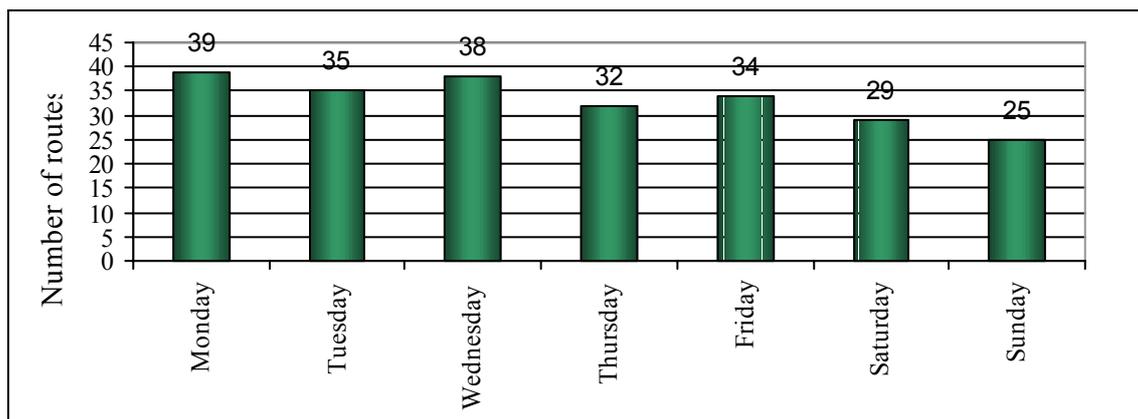


Figure 3. Distribution of local bus routes according weekdays in Ignalina region [6]

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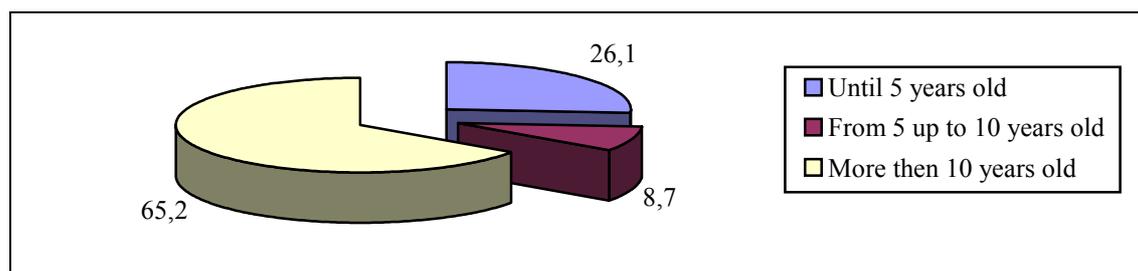


Figure 4. The structure of Ignalina bus fleet according the time of exploitation, % [6]

5. MAJOR DISADVANTAGES AND THEIR CAUSES

The following conclusions may be drawn on the basis of the analysis of the performance of bus companies and transport services provided by municipality-owned regular transport in rural localities:

1. The analysis of the performance of joint-stock companies providing transport services has shown their low competitiveness accounted for by the monopoly on public transport service market and the obligatory character of transport services.

2. The data on the financial state of the above enterprises have revealed that, in many cases, it is unsatisfactory, not allowing for an optimistic forecast of their development. Moreover, the financial state of public transport companies may become even worse if no actions are taken to increase their efficiency.

3. The financial analysis has shown that the lack of financing and subsidies may even increase, causing bus companies to reduce the volume of transport services and expand some other activities not related to passenger transportation.

4. Bus service companies in the regions are not provided with the proper computer hardware and software and programming equipment to plan and maintain the work of the transport system. The accounts and the database of public transport performance are mostly available on paper rather than electronically. Municipality-owned companies do not carry out any research on passenger flows and market trends.

5. Bus service companies in the regions do not pay due attention to control of their activities. For this purpose, the staff members of these enterprises may be employed.

6. Regional bus service companies have not been restructured yet. The number of the superior managers is often too big, while at small enterprises the responsibilities of various professionals may be shared.

7. Transport facilities of many bus parks are obsolete and deteriorated and cause problems to working according to plan and even to ensuring traffic safety. In this environment, partial renewal of transport facilities by purchasing (leasing) new or used buses may be recommended. This is the main condition for reducing the maintenance and repair costs and enhancing the quality of provided transport services.

6. SOME APPROACHES TO SOLVING THE PROBLEM OF SUPPORTING TRANSPORT SERVICES

1. The efficiency of performance of bus service companies may be increased by taking the following actions: 1) eliminating unprofitable routes, 2) altering the scope of activities, 3) providing a wider variety of services, 4) extending the geography of the provided services.

2. Every regional bus service company seeking to use the resources effectively should continue restructuring, updating its infrastructure, optimising the number of carriers and managers and improving their skills.

3. Regional bus companies should pursue a strategy of developing their activities, harmonizing them with state development and integrating into the whole Lithuanian and EU system of passenger transport. This would contribute to developing the strategic plans, to be an incentive to the carriers, raising the culture and improving the companies' image, thereby making their policy more attractive to society.

4. Enterprises providing passenger transportation by bus need investments and subsidies to increase the number and quality of provided services and to pay the debts for not being unprofitable.

5. In renewing the available transport facilities, regional bus parks should purchase more buses of the same model, which could ensure comfortable travel to passengers and bring some profit to enterprises. Buses of various models used now increase maintenance and operational costs.

6. Transport enterprises seeking to have a competitive edge should study the market of transport services and its changes as well the performance of their rivals.

7. Seeking to be competitive and efficient, bus companies should establish well-grounded tariffs and present them to regional municipalities,

8. It is predicted that more private carriers will enter regional transport market in the near future, which will make a competition in the sector of local transportations even tougher. This has a potential threat to the business of bus transportation because the number of passengers will decrease. However, healthy competition among the carriers usually results in better quality of transport services, providing more freedom for passengers in choosing them.

9. To be well-prepared for liberalization of the market of transport services, bus companies should be ready for reforms and restructuring caused either by enterprise privatisation, merging it with another profitable enterprise or reorientation of activities.

The analysis of local passenger transportation by bus in various regions has revealed similar situation in most of the regions of Lithuania. To improve the economical state of regional enterprises providing passenger transportation by bus and to maintain the system of regular public transportation in the regions, more support and attention to this area should be paid by regional municipalities:

1. Local municipalities should support transport enterprises providing public bus services in the regions until favourable, safe and competitive environment is formed in the area of passenger transportation.

2. Seeking to create free market conditions for carriers and provide good services to passengers, the market of transport services should be available for all competitive carriers irrespective of the nature of their capital.

3. To make bus companies profitable, municipalities should state well-grounded tariffs and compensations for passenger transportation to cover the actual enterprise losses and operational costs.

4. Legal documents defining responsibilities of the customer and the carrier should be compiled. Their relationship should be based on contractual basis, according to which a municipality is a customer and the carrier is a contractor. The latter should carry passengers according to the schedules and routes suggested by a municipality. A contract clearly defining their responsibilities should be made at least for a year.

5. The financial issues should also be defined in the contract. According to it, a bus park is the carrier providing transport services to passengers under the conditions stated by a municipality. Contracts should define all rights and responsibilities of contractors.

6. The income of the carrier of passengers, compensation for privileged tickets and state or municipal subsidies should be sufficient to ensure normal performance of transport enterprises, allowing for the renewal of transport facilities.

7. In view of the prospect for regional bus companies to lose a monopolistic position in providing transport services in particular areas, it is advisable to stimulate the participation of various groups of carriers on the market, clearly defining the types and quality of the provided services.

8. Departments responsible for passenger transportation and arranging bidding and tendering for providing transport services on particular routes should be established in municipalities. This will attract new private carriers to the sector of passenger transportation. At the same time, municipalities should maintain the required bus park on the existing routes, promoting and supporting the restructuring of transport companies to satisfy the changing demands of passengers.

9. The problem associated with privileged groups of passengers should be considered and solved on the whole territory of Lithuania according to the state law providing allowances to some groups of passengers.

10. To optimise passenger transportation on a seasonal basis, passenger flows in settlements and villages of various regions were investigated. Based on the data obtained, buses of optimal spaciousness (large, medium or small) were selected for particular routes.

11. The information about public bus schedules and routes, tariffs and possible changes should be available to passengers on the Internet sites of every municipality.

12. Special attention should be paid to passenger market development aimed at raising the living standard of the inhabitants and ensuring social securities. For this purpose, residential and public buildings should be built more densely in rural areas and a system of transport services accessible to all groups of population should be developed in the regions of Lithuania.

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