RESEARCH OF THE LIFE QUALITY INFLUENCE TO THE USAGE OF PUBLIC TRANSPORT IN LITHUANIA

Daiva Griskevičienė1, Algirdas Griskevicius2, Florian M. Heinitz3

1,2 Vilnius Gediminas Technical University, Transport Management Department Plytines 27, LT-10223, Vilnius, Lithuania,
E-mail: daiva1@centras.lt, tvk@ti.vgtu.lt

3 Erfurt University of Applied Sciences, Transport and Communications Department, Altonaer Strasse 25, D-99085 Erfurt, F.R. Germany,
E-mail: heinitz@fh-erfurt.de

Abstract. Sustainable development is a top priority for the EU, which takes environmental concerns into account in all its policy-making. A good quality of life depends on a whole series of factors, including having enough money and dwelling with good communication conditions, also being in good health. Public transport takes the significant influence to the town-people life style and city economy. It is incontestability the importance of public transport for the passenger communications in Lithuanian cities, as the usage of the regular transport reaches more than 60 % and it has considerably less influence on environment, infrastructure requirement, decreases the vehicles’ parking problems comparing with usage of cars. Therefore it is necessary to ensure beneficent functioning of public transport, especially buses and trolley-buses. The survey results show, that the main factor for the choice of public transport service is the purchasing power or life quality level of urban residents. Investigation of the passenger market corroborated the necessity of the public transport service and combination with the car usage for the sustainable development of communication systems in urban and suburb territories.

Keywords: life quality, passenger market, purchasing power standard, social separation, expenses of household member, usage of public transport, demand of suburban passengers, integration of service, car competition.

1. Introduction

The level of usage of public transport practically depends on both the level of system development accessible for all passengers and the level of citizen living standards, their lifestyle and financial possibilities. Therefore social-economic factors have great influence especially on the formation of public transport passenger market of development countries. Seeking to determine the influence of living standards on inhabitants choosing manner of communication by transport the study was performed in Vilnius city. The social-economic research of passenger market refers to results of questionnaire interrogation which formed necessary priorities of sustainable transport system.

2. Living standard – the main factor of social strategy of the EU

Sustainable development is a top priority for the EU, which takes environmental concerns into account in all its policy-making. Well developed methodology and technique are going to meet and to solve the key social life problems. A good quality of life is a complex indicator, which depends on a whole series of factors, including having enough money and dwelling with good communication conditions, also being in good health.

The material standard of living in the country we can measure the total value of everything that country produces in the calendar year (gross domestic product GDP) by the number of inhabitants. The standard of living in the EU varies from country to country. GDP per inhabitant or purchasing power standard is lowest in Baltic countries. The EU is striving to strengthen the EU’s economy, make it more competitive and create more workplaces so we can all enjoy a better quality of life. This way transport system service quality is one of the key components. Particularly public transport is the main constituent of passenger transport system for daily communications.
Public transport takes significant influence to the townpeople life style and city economy. It is incontestability the importance of public transport for the passenger communications in Lithuanian cities, as the usage of the regular transport services is more than 60% and it has considerably less influence on environment, infrastructure requirement, decreases the vehicles’ parking problems comparing with usage of cars. Therefore, the cities authorities agree that it is necessary to ensure beneficial functioning of public transport, especially buses and trolley-buses in the large cities of Lithuania [1].

A good quality of life is determined by the economical factors mostly. It depends on the enough income and expenses for one family member. As the prices vary from one country to another, according different economies, it is more acceptable to put into practice measuring the price of a comparable and representative ‘basket’ of goods and services in each country. This figure is given not in national currency units but in a common artificial currency ‘purchasing power standard’ (PPS). Comparing GDP per inhabitant in PPS gives a fair comparison of the standard of living in different countries (Fig 1).

![Fig. 1. GDP per inhabitant in PPS, 2007 (Eurostat)](image)

The EU countries living standard analysis shows, that Lithuania inhabitants are living in in less conditions than EU-25 average (GDP per inhabitant in PPS), the EU’s ‘structural funds’ help to strengthen of country economy.

The analysis shows the obvious urban–rural differences in the country according to a number of quality of life domains, namely: income and deprivation; housing; employment, and education; work–life balance; access to work, school, family, friends and services; and subjective well-being. It also comments on the adequacy of the rural/urban indicators used, as well as drawing, to a lesser extent, on other related sources.

Europe is dealing with the growing challenges of globalization, rapid technological change and a developing knowledge society; maintaining employment and social cohesion is a further challenge. The Lisbon agenda seeks to meet these challenges by making Europe a more competitive, flexible and adaptable economy. Greater labour mobility between regions and between jobs is a crucial element in this [2, 3].

Obviously, the position of Lithuania is one of the last according to the social-economical indexes on the scale of enlarge EU. Therefore, the point of view and methodology of evaluation of social and economic inequality of this country are special.

### 3. Circumstances of life quality development in Lithuania

The statute of modern time is to understand the development of the country as the improvement of human life quality. Community based on social visions and values.

Though due to progress of telecommunications the world became more accessible for all and no more so large, and due to political, economical and technical tendencies the character and scale of association of nations have changed, but each state’ internal economical and social problems haven’t los their importance. All the economic patterns of social life predetermine common life level of each community member, on one hand – the personal economical activity and life indexes and characteristics, and on the second hand – possibilities of public decisions of authority, implementation of infrastructure and service projects.

The country life is predetermined by activities of the single inhabitant, and the person life - by the individual incomes and supply. The balance of expenditures for each person of household practically is the key economical index, indicated the social situation and economical possibilities in community (table 1).

In Lithuania, the same as in EU, it will be seeking stimulation of new methods and practice for implementation economic and social means for the improvement of human life level, creation of labour market with out the discrimination, decreasing unemployment, improvement of work conditions, and reducing the social separation.

However the key projects and means have to be implemented in the economic and infrastructure sphere for the formation the environment of the country welfare.

For the improvement of communication system it is necessary to review the priorities, which were directed to the cargo transportation system within the independence restoration period. As the state economy has increased, this gap would be fill in. The transport service of urban territories, development of transport infrastructure, and guarantee of transport service modernization and accessibility have to be emphasize.

The results of selective survey of the urban transport service needs shows, that the factor of the public transport system accessibility has the significant influence to the social-economic life of urban residents. Also, the interest of suburb citizens to have accessibility to well organized public route transport system, according the work-time duration and traffic schedule.
4. Reduction of spatial, physical and social separation – steps towards sustainable transport

With the evaluation of the present situation of transit business system, the following main directions of its improvement can be formulated.

The need of the gain and the use of local development potential are being determined by growing unevenness of the development of separate regions of Lithuania. The long-term development strategy of the State forecasts the creature of welfare society with low level of unemployment, high employment value, resolved social assurances, minimal number of destitute families and high level of social cohesion till 2015. The General Plan of the territory of the Republic of Lithuania affirms that two main strategic aims have to be pursued in the region policy [4]:

– to ensure territorially differentiated social, economic, ecological development and country’s clearing seeking to exploit singularities of locality environment and also to conserve regional treasures;

– to soften regional disproportions of life quality reducing social and economic differences of regions.

In pursuance of strategic aims special tasks for the consolidation of Lithuanian potential are formatted:

1. To present all necessary preconditions for intensification and display of development potential.

Nonetheless social and economic cohesion was proclaimed to be strategic aim of national and regional levels, priorities are dedicated for the growth of the State economy and the increase of competitiveness. The population, economic infrastructure and economic activity are concentrated in competitive and the most developed cities and regions of Lithuania. New activity, high level services as an advantage over other regions are rendered in Vilnius, Kaunas, Klaipėda, Šiauliai, Panevėžys. This tendency is being sustained by the accumulation of direct foreign investments stipulated by high qualification labour, existing service infrastructure, instilling of innovations, friendly communication and other actions in the most developed regional centres.

Improving life environment and quality of regional centres the processes of urban development have to be properly managed planning integrated projects of the improvement of life environment and quality. Specific attention has to be determined for the improvement of urban infrastructure.

2. To ensure accessible and high quality substantial services of public transport and communication and social services.

It should be noted that investment is economically justified by the growing international traffic flows. Meanwhile population mobility is limited and this has influence on slowing of the decrease of regional differences in Lithuania. Professional and territorial mobility is incomplete in Lithuania. Technical limitation of transport communication has influence on limiting substantial living conditions. Therefore additional interventional means with integrated actions for the sustaining of development potential have to be invoked to meet this aim. The potential of locality development – simple basis of town and village economic growth, including local public infrastructure, cultural and historical potentials and local natural resources. All actions of the gain and the use of local development potential are directed to form friendly conditions for the development of local human resources. This aim is directed to create high standard of life environment and quality to sustain existing and attract new qualified labour, which is the catalyst of local economy development [5, 6].

Therefore it is predicted to stimulate the preparation of programmes of the enlargement of population territorial mobility, to plan the measures for the stimulation of “moving inhabitants” consolidating finance of municipalities, both employers and State government.

5. Transport - factor of living standard

Transport and communication factor is very important for the business sphere as well as for social living condition in the country. Since the transport as well as energy, communications and environment are the key infrastructure for the economical and social life, transport expenses are compulsory for all inhabitants of the country. Lithuania’s needs for transport communication and demands for public service are comprehensive to all.

Public transport services always were popular in Lithuania. Traditionally passengers use bus and railway transport in the State territory and different capacity bus, trolleybus and taxi transport in the cities. Due to increasing income of inhabitants and different interests passengers’ flows constantly grow (table 2). Especially the demand for these services grows in cities.

### Table 1. The most important inequalities between EU and Lithuania in the social-economical sphere

<table>
<thead>
<tr>
<th>Index of Inequality</th>
<th>Lithuania</th>
<th>ES average</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross domestic product per capita compare to EU average, proc.(2005)</td>
<td>53,2</td>
<td>100</td>
<td>Large</td>
</tr>
<tr>
<td>Employment rate, proc.</td>
<td>64,5</td>
<td>63,6</td>
<td>Small</td>
</tr>
<tr>
<td>Employment rate of 55–64 year workers, proc.</td>
<td>43,5</td>
<td>49,0</td>
<td>Small</td>
</tr>
<tr>
<td>Unemployment rate, proc. (2007)</td>
<td>7,2</td>
<td>4,3</td>
<td>Small</td>
</tr>
<tr>
<td>Long term unemployment rate, proc.</td>
<td>3,7</td>
<td>2,5</td>
<td>Average</td>
</tr>
<tr>
<td>Provision by dwelling (m² per capita)</td>
<td>~22</td>
<td>30–40</td>
<td>Average</td>
</tr>
<tr>
<td>Living in the apartments houses, proc.</td>
<td>66</td>
<td>50</td>
<td>Large</td>
</tr>
<tr>
<td>Using of heating energy in dwelling houses, kwh/m²</td>
<td>250</td>
<td>160</td>
<td>Large</td>
</tr>
<tr>
<td>Share of social dwelling in the country dwelling fund, proc.</td>
<td>3,0</td>
<td>15</td>
<td>Large</td>
</tr>
</tbody>
</table>

*Source: Eurostat. 2006.*
Table 2. Passenger traffic by public transport

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total. thous.</td>
<td>609414.2</td>
<td>551378.8</td>
<td>516242.7</td>
<td>471929.5</td>
<td>482231.6</td>
<td>414162.4</td>
<td>441169.4</td>
<td>422070.1</td>
<td>439755.4</td>
<td>453085.8</td>
<td>454854.1</td>
</tr>
<tr>
<td>Railways</td>
<td>14189.6</td>
<td>12556.6</td>
<td>12194.6</td>
<td>11527.3</td>
<td>8852.1</td>
<td>7718.1</td>
<td>7217.2</td>
<td>7004.6</td>
<td>6983.2</td>
<td>6719.9</td>
<td>6193.8</td>
</tr>
<tr>
<td>Roads</td>
<td>593474.6</td>
<td>537079.7</td>
<td>502138.8</td>
<td>458327.6</td>
<td>417672.8</td>
<td>404688.7</td>
<td>430627.3</td>
<td>412575.0</td>
<td>430073.9</td>
<td>445484.9</td>
<td>445484.9</td>
</tr>
<tr>
<td>buses1</td>
<td>361648.0</td>
<td>346834.3</td>
<td>316157.7</td>
<td>273492.4</td>
<td>258338.5</td>
<td>240387.3</td>
<td>264962.3</td>
<td>281836.3</td>
<td>297824.8</td>
<td>306010.6</td>
<td>311951</td>
</tr>
<tr>
<td>Trolleybuses2</td>
<td>231826.6</td>
<td>190245.4</td>
<td>185981.1</td>
<td>184835.2</td>
<td>159334.3</td>
<td>164301.4</td>
<td>165665.0</td>
<td>130738.7</td>
<td>132249.1</td>
<td>137408.1</td>
<td>133553.9</td>
</tr>
<tr>
<td>Sea</td>
<td>40.8</td>
<td>36.4</td>
<td>43.7</td>
<td>50.8</td>
<td>64.2</td>
<td>68.8</td>
<td>58.4</td>
<td>98.9</td>
<td>132.9</td>
<td>149.8</td>
<td>197.6</td>
</tr>
<tr>
<td>Inland waterways</td>
<td>1470.0</td>
<td>1434.9</td>
<td>1563.6</td>
<td>1728.3</td>
<td>1299.9</td>
<td>1323.6</td>
<td>2890.2</td>
<td>1993.6</td>
<td>1973.9</td>
<td>2122.8</td>
<td>2248.1</td>
</tr>
<tr>
<td>Air</td>
<td>239.2</td>
<td>271.2</td>
<td>302.0</td>
<td>295.5</td>
<td>342.6</td>
<td>363.1</td>
<td>376.3</td>
<td>398.0</td>
<td>591.5</td>
<td>674.6</td>
<td>729.7</td>
</tr>
</tbody>
</table>

1 Data recalculated, passengers carried by minibuses included
2 Data recalculated due to changes in the calculation methodologies in trolleybus companies.

The research shows, that the demand of territorial servicing and work schedules had changed a lot since 1991. Public transport system badly operating due to wicked economic support doesn’t meet the passengers’ needs. More and more people have to use individual transport means. Lithuanian phenomenon affirms it also – despite economically hard conditions automobile level began to increase since 1995. It increased due to second-hand cars, which mass supply was going from West Europe. The possibility to use the automobile for the different purpose whole day outrivaled the inflexible route transport system [6, 7].

The average level of the cars per 1000 capita has increased during the last 5 years due to market in Lithuania to 395 in 2005 (table 3). The prognosis of using of own cars depends on the level of development of public transport system and capacity of the road/street network. It is expected that the level of cars per 1000 capita will increase to 450 in 2015, but their usage would depend on the development of traffic control and improving of capacity of streets and sections.

Vilnius, capital of the State, becomes a modern city of East-Central Europe. Modern solutions are being accepted and it is reaching to use possibilities of the newest technologies in the residence of modern city. Transport is the domain awaiting important changes. Step by step the projects of automated traffic-light regulation and management systems began being implemented. By the help of centralized city traffic-light regulation system “green wave” street network would be formed and controlled according to instantaneous street load. It is expected that this system will help to avoid traffic jams.

At present days Vilnius public transport system consists of trolleybuses, buses and microbuses. After long discussions one more equal public transport mean – tram – was included into the General plan of Vilnius city. Supposedly tram would serve both to improve the quality of passenger conveyance and to decrease the level of air pollution. Besides, tram would be convenient transport mean for inhabitants and city visitors and would touch more modern nuance for the city.

It is necessary to form the attractive public route system for passengers due to the integrated service market of all urban transport modes, and to form useful conditions for the own car usage. The regular route public transport system has serious competition from the side of individually own transport means. The expanding car fleet and the increasing transport mobility pose increasingly serious traffic problems. Obviously, it is important to support the public transport system, and combine it with traveling by cars in Vilnius city. The priority is given to improvement of infrastructure, modernization of traffic management and control system, balance of public transport service with the car usage in the city and suburbs [8, 9].
Increasing incomes of inhabitants and growth of mobility, disillusion of public transport and the fact, that cars become more accessible, are inseparable results of high level of automobilization. Following, narrow and sparse Vilnius city streets, radian network are too overcrowded, this determines bigger impurity, increase of accidents, traffic-jams and lack of car parking in the centre and residential areas of the city. Still increasing problem of traffic-jams has influence on public transport lags, when this makes the system more unreliable: maintenance is rising in price, transportation and competition features of public transport are decreasing. Following, instead of increasing mobility, car usage determines absolute loss of mobility in various city areas [10, 11].

6. Methodological singularities of research

Selective data interrogation of citizens of Vilnius seeking to explain their social-economic possibilities to use public transport services or private cars was accomplished in 2007.

The interrogation was performed in few directions. Respondents were grouped by social-urban aspects and by age (table 4) to:
- young specialist, starting their career;
- active suburb inhabitants;
- social supported suburb inhabitants.

This selection was influenced by conclusions of previous accomplished research studies. Precisely these groups were determined to be the most sensitive about all changes of public transport services in Vilnius city.

Table 4. Population by major age group, % (2007)

<table>
<thead>
<tr>
<th>0-14</th>
<th>15-24</th>
<th>25-49</th>
<th>50-64</th>
<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU-27</td>
<td>15.8</td>
<td>12.6</td>
<td>36.3</td>
<td>18.3</td>
</tr>
<tr>
<td>Lithuania</td>
<td>15.9</td>
<td>15.7</td>
<td>36.2</td>
<td>16.6</td>
</tr>
<tr>
<td>Poland</td>
<td>15.8</td>
<td>15.9</td>
<td>36.0</td>
<td>18.9</td>
</tr>
<tr>
<td>Ireland</td>
<td>20.3</td>
<td>14.8</td>
<td>38.3</td>
<td>15.5</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>17.6</td>
<td>13.4</td>
<td>35.1</td>
<td>17.9</td>
</tr>
<tr>
<td>Germany</td>
<td>15.8</td>
<td>12.6</td>
<td>36.3</td>
<td>18.3</td>
</tr>
</tbody>
</table>

Sustaining results of the research respondents of the first group belong to social group with 700-2500 Lt incomes per month for one member of household. This exceeds statistical average command monetary income of one member of household from 30% up to 362%.

Earnings of hired young specialists of Vilnius are bigger then statistical average of the country.

However costs of social needs are signaly bigger in Vilnius city than in other cities. The monthly costs of statistical normal Lithuanian citizen are 17% less than minimal costs of young specialists of Vilnius and 67% less than minimal necessary costs of living in Vilnius of one member of household declared in interrogation answers (table 5).

Table 5. The variation of usable expenses in 2003-2006.

<table>
<thead>
<tr>
<th></th>
<th>Usable expenses for on member of household per month, Lt</th>
<th>In 2006 comparison with 2005, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>All households</td>
<td>512.3</td>
<td>578.1</td>
</tr>
<tr>
<td>In towns</td>
<td>559.3</td>
<td>644.3</td>
</tr>
<tr>
<td>In cities</td>
<td>613.0</td>
<td>709.9</td>
</tr>
<tr>
<td>In countryside</td>
<td>418.4</td>
<td>446.3</td>
</tr>
</tbody>
</table>

According to this difference respondents participated in interrogation are assigned to VII-IX deciles due to the monthly monetary costs of one member of household.

The balance of income-costs of the second investigated group has similar result. Though the structure of costs of this group is apparently differ than the usable costs of the first group and statistical normal citizen of the country (Fig.2).
7. The social-economic substantiation of Vilnius young citizens’ to use public transport and private automobile

Respondents of all groups mentioned that a part of income (10-20%) use for savings, deposits in bank offices or securities. Third of young specialists respondents use up to 9% income for investment to satisfy needs of dwelling, transport, living and leisure.

The group of young specialists monthly spends about 5% of their income for public transport needs and about 15% - for private car exploitation.

Young specialists living in comfortable places near bus and trolleybus stops or their work or study places located in convenient accessibility zones give priority to public transport for work travels combine with living needs, shopping or leisure. Though 92% respondents of this group use private cars of family members for weekend or holiday long distance travels. These respondents are planning to buy private cars in the nearest future and to use cars every day.

The respondents living in block house think that every member of family has to have his (her) own private car. 10-14 years old private cars kept in streets and yards are the most popular. Garages usually are planned under block houses.

Young citizens of Vilnius buy monthly tickets for public transport. 45% of them combine travels by public transport with travels by private cars. 92% of investigated citizens usually get to work or study places combing few public transport routes. It takes about 1 hour 30 minutes to reach work places traveling by public transport and about 10-20 minutes traveling trough city territory in radial direction or about 40-50 minutes traveling through city center and main streets to different side of city territory by private cars. It takes about 35-40 minutes to reach living places also sport, shopping or studying places after work traveling by private cars. 76% of investigated citizens travel about 20-30 km per day.

40% of car drivers pick straight way, 40% pick less crowded, but longer main streets, 20% don’t drive in peak hours. Since buses and trolleybuses do not vanquish traffic jams 97% of car drivers thinks that traffic disturbances are not main reasons to reject private cars in city territory.

The opinion of young specialists shows that in 2007 one citizen of Vilnius needed growing incomes (fig. 3):

- 700-1000 Lt per month for minimal standards of living;
- 1500-2500 Lt per month for normal standards of living (depending on structure of family).

The forecast of young specialists for 5 years period shows, that one citizen of Vilnius will need:

- 5000-6000 Lt per month for minimal standards of living;
- 7000-9000 Lt per month for normal standards of living.

Fig. 3. The structure of compulsory expenses basket of citizen, Lt

As distinct from 2004 year the results of accomplished research in 2007 show that:

- obvious priority is given to cars used and forecasted to be use in city territory unstressing estranged districts and suburbs or often business trips;
- car is considered to be used a vehicle but not a prestige or luxury element.
- The income of young specialist as a member of household comparatively fit to an average of whole country. Young specialists earning their living by themselves admit that standards of living are being improved in a period of last few years.
- Monthly expenses for automobile fuel are: 300-400 Lt for petrol or 100-180 Lt for diesel, driving in moderation or at weekends, and 300-700 Lt, driving everyday.

Young public transport users consider that the quality of services of present route transport in Vilnius is not sufficient: it is a lack of long and fine route net, more frequent traffic and littler waiting time, quicker communication. Inhabitants of suburbs require better services for outskirts and longer work time.

Present public transport tariffs meet the requirements of young passengers of all transport means. Discounts are necessary for students, pensioners and other social supported peoples. This regulation has no connections with family budget, but refers to social principles. Two different opinions about expansion of tickets’ spectrum and penalties for traveling without tickets (100-200 Lt) were formed.

Public transport infrastructure meets the requirements of all respondents traveling by route transport in city center and central zones where pavilions are built and necessary information is installed in public transport stops. Young passengers of suburbs areas are not satisfied with insufficiently equipped public transport stops. They consider, that road signs indicating public transport stops sites are not enough. Arbours, benches, detailed traffic timetables and also street lighting, comfortable access for buses (flushed water, brushed snow) are necessary and required.

Young passengers perceived good changes in public transport services: accessible seats for people with disabilities and people with children, sound and visual
information in transport means, classical music in trolleybuses, innovated tickets punch system, preparation for installation of electronic ticket in Vilnius.

Young passengers form an opinion that it is necessary to install more innovations and enlist investments in public transport of Vilnius city. It is worth to discuss about quicker communication systems.

8. The social demand of suburban passengers for better service

Suburb inhabitants confirmed better service of public transport for the second interrogation of 2007. Respondents consider that positive tendencies have been happened in service level of Vilnius suburbs in last 4 years:
- technically better vehicles have been used in routes (82% of responds);
- the buses have been equipped with visual and sound information means (81%);
- the bus stops have been equipped with bus traffic timetables (67%).

Also disadvantages are mentioned:
- routes of minibuses are reduced or vehicles do not ride (12%);
- bus stops have no awnings (65%);
- buses rides in unlit streets (37%);
- bus stops are unlit and therefore information is not viewable (28%);
- streets have no sewerage of surface water, therefore passengers usually are soused (36%);
- old buses are not equipped with sound information and name of stops (21%);
- nonconformity to timetables during daytime is noticed (15%).

Active suburb inhabitants travel to work place by public transport every workday. Since travels to city center are always complicated, work travels always are combined with other purposes, changing public transport means or waiting at stops. Such a composite travel is difficult and takes forever. Changes are made by 87% of suburbanites or working there respondents.

The group of elder seniors noted extra disadvantages (86%):
- bus stops cannot be reached due to unclean streets during wintertime;
- unsafe to reach stops due to unbuild roadsides or paths;
- difficult boarding due to insufficient entrance to bus stops.

Since passengers of this group have no individual cars or cannot drive due to health problems they use services of public transport (89%). Their objective travels are directed to health institutions, pharmacy offices, bank offices, post offices, shops, churches, municipalities and etc.

As much as possibly these passengers try to travel no in a peak hour when public transport vehicle are vacant.

Table 6. The comparison of compulsory consumption expenses of household member

<table>
<thead>
<tr>
<th>Respondents’ groups, %</th>
<th>Average of country*</th>
<th>Average of deciles*, Lt</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
<td>III</td>
</tr>
<tr>
<td>Monetary usage expenses</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Foodstuff and nonalcoholic drinks</td>
<td>25,0</td>
<td>30,0</td>
</tr>
<tr>
<td>Clothing and footwear</td>
<td>10,0</td>
<td>9,6</td>
</tr>
<tr>
<td>Housing, water, electricity, gas, other fuel</td>
<td>15,0</td>
<td>21,6</td>
</tr>
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<td>Education</td>
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The respondents of senior group don’t work any more. Their individual cars are 10-20 years old (78%). These cars usually are used during all seasons except wintertime (45%) and always are kept in garages (64%).

Active suburbanites have or wish to have private cars (89%), because:
- family members must use cars only for necessary business needs (32%);
- it is difficult/ not possible to use public transport to reach workplaces (47%);
- husband drives car and wife has no driving license or driving experience (22%).

Suburbanites respond carefully about opportunity to combine the usage of public transport with private cars. Since individual cars have to be left in parking places near last public transport stops or changes nodes and further travel has to be continue by public transport means many responders have doubts about convenience of this system:
extra parking fee and payment mechanism would be formed;
• those who must carry heavy weight everyday would like to drive cars to the ending place;
• those who must drive children to children-gardens or schools and other family members to workplaces would be constrained to use individual cars.

The concept of combining public transport services with usage of individual cars is being supported by young people and those who believe that economic financial factors are major priorities.

1. Conclusions

Better quality of work and life environment and improved quality of transport communication are the aims which can be realized by the growing of living standards and directly increasing inhabitants’ income.

Reaching to evaluate qualitative influence on urban public transport, methods of improvement and development of external and internal passengers transport system have to be used:

1. Employing urban planning methods to integrate all districts and suburbs into common functional and social balanced urban structure with sufficient infrastructure network and passenger communication system.

2. Applying transport planning methods to ensure the accessibility of public route transport for inhabitants of integrated territory, services’ balancing and flexibility for changes of demands.

3. Employing taxing regulation methods to reach attraction and competitiveness of public transport services against continual use of individual automobiles.

4. Applying traffic control methods to reach flexible and coordinated control of common transport flow ensuring exclusive mobility conditions for public transport traffic.

5. Employing territorial and traffic planning and coordination methods to reach transport traffic limitations and elimination from pedestrian, cyclists, resting zones.

6. By the application of territory planning and control methods to reach balancing and regulation of car parking, equipment of parking places, harmonizing with public transport stops and changes’ stations.

7. By the using of environment protection and public education methods to sustain the use of less polluted and alternative fuel, the use of un-motorized transport means and the promotion of healthy environment.

Employing informatics technologies and economical methods to encourage inhabitants to use alternative technologies of informative virtual mobility instead of transporting communications.

The accomplished social-economic interrogation of sensitive groups of public transport users in Vilnius city shows happened changes and highlights growing problems of public transport system:

1. The results of research shows that the influence of living standards on choosing modes of communication by transport is important for sensitive groups of passengers;

2. The priority is dedicated to the gain and the development of public transport system. Passengers are interested in well integrated route transport services according to spatial and qualitative attitude.

3. According to the opinion of the groups of young specialists and seniors using public transport it is necessary to support financially and to improve technologically this system seeking to compete with growing number of individual cars.

4. According to the opinion of users public transport tariffs have to meet financial possibilities of social groups of senior pensioners and young career beginners.

5. The need of busy suburbanites to use public transport is still highlighted despite of growing periodic and continual usage of individual cars for business travels.

6. The most sensitive groups of public transport passengers do not except the improvement of public transport services if cardinal means are not used in city:

• the reconstruction of street network in suburb areas;
• the reordering of traffic organization;
• the modernization of transport means;
• the improvement and controls of traffic timetables;
• the installation of rapid communication in longitudinal and transverse axles of city;
• reasoned combination of public transport nodes with construction of parking places of individual cars;
• the formation of acceptable tariff according to the financial possibilities of specific users groups.

References


7. Griskevičiene D., Griskevicius A. Social and


11. Analysis of the national transport policies of the New Member States and their impact on Community transport objectives/ Lithuanian report, 2005