Dependence of public transport service quality indicators priority from the respondent’s age

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Annotation – the existing level of passenger transportation by public transport doesn’t meet the present requirements, which belong to the quality of passenger transportation. Transportation of passengers by public transport has to be carried out with as much as possible conveniences, safe and also with a smaller waste of time. In the thesis, the most important indicators that affect the quality of transportation are highlighted which influence the quality of transportation and their importance depending on a passenger age is analysed.

Keywords – quality of public transport service, traffic safety, comfort, information support on transport.

I. Introduction

According to many researchers in order to take measures on expedient use of vehicles on a route, improvement traffic schedules, safety and providing passenger comfort, it is necessary to carry out the public transport service quality analysis. The degree of public transport service quality is characterized by the quality of public service indicators system. For people of different age categories unequal criteria for evaluation the quality of public transport service are in a priority.

II. Indicators of public transport service quality

Quality of public transport service is not only the quality services are provided by public transport, but also a complex of methods and means for resource managements of transport networks. Improvement of public transportation quality is one of the major directions for the development of city public transport. The city public transport services quality assessment were investigated by: O. P. Artynov, M. D. Blatnov, G. A. Varelopulo, V. A. Gudkov, E. P. Volodin, A. V. Shabanov, V. K. Dolja, I. S. Efremov, Yu. S. Liguna, V. V. Skaletsky, I. V. Spiryn, M. B. Ostrovsky, A. M. Bolshakov and other scientists.

V. A. Gudkov has suggested to estimate the quality of transport service of the population using a coefficient which considers various indicators systems. However, her considerable drawback is bulkiness as it is necessary to define relative statistical weight of private indicators with the help of tables made on the basis of personal researches. Unfortunately, a few authors take into account such indicators, as the information load on passengers during their stay in the vehicle; information support on traffic and intervals; the hygienic and aesthetic condition of a rolling stock, devices and registrations of a stopping place and qualification of personnel [3].

A. V. Shabanov in his thesis has developed the comprehensive assessment of public transport service quality. It takes into account [4]:

\[ S_{service} = S_1^{1.1} \cdot S_2^{1.2} \cdot S_3^{1.3} \cdot S_4^{1.4} \cdot S_5^{1.5} \cdot S_6^{1.6}, \]

where \( S_i \) is the reliability of movement precisely according to the traffic schedule (travel time); \( S_2 \) – accessibility (frequency of public transport service); \( S_3 \) – safety (probability of non-failure public transport service); \( S_4 \) – comfort (travel quality); \( S_5 \) – cost index (value of transport tariff); \( S_6 \) – indicator of the information support level; \( k_1 \ldots k_6 \) – degree indicators that characterize the ponderability of a corresponding quality level indicator.

According to the normative document [5], to the public transport service quality indicators one can refer:

- the free area in buses;
- the filling coefficient of buses;
- the traffic regularity;
- the density of route network;
- the standards of saturation by the rolling stock of 1 km route network in rush hours;
- the coefficient of changes;
- the time expenses of one passenger on a trip;
- the average distance of a trip;
- the distance to public transport stopping places.

Other indicators which need to be considered at determination of public transport service quality were offered by G. A. Varelopulo [6]:

- accessibility;
- comfort of a trip;
- minimum time expenses travel around the city;
- high reliability of a rolling stock;
- regularity of connections taking into account requirements regarding transport safety.

III. Interview results

To determine the degree that characterizes the ponderability of the corresponding quality level indicator an interview was conducted. In this survey, the respondents were suggested to set estimates for each of the indicators that characterize the quality of public transport service. The estimates were divided from 1 to 5, where 1 was the least important indicator, and 5 – the most important indicator.
Travel time, traffic regularity, safety, comfort and information support were chosen as indicators. 150 people have passed the interview. The distribution of its results is shown in Fig. 1.

The respondents were divided by age into 5 categories:
- from 16 to 25 years old;
- from 26 to 35 years old;
- from 36 to 45 years old;
- from 46 to 55 years old;
- from 56 to 70 years old.

The interview was conducted using both online resource of Google Forms and by the blank method. Having analysed the received values, the following distribution was established:

As of the interview showed, people aged from 16 to 25 and from 55 to 70 prefer the indicator “time”. The interviewed people of this category also give primacy to "traffic regularity". As for the respondents of 26-35, they choose "safety" and "information support" before taking on a vehicle. The most important indicators are “comfort” and “information support” taken by people from 36-45 and 46-55.

Conclusion

According to the results of the interview, the attractiveness distribution of public transport service quality indicators has been created. So it has been established that passengers pay more attention to the duration of a trip and intervals between by-pass vehicles. A similar distribution has been created taking into account the respondents’ age groups. The received data suggest that the attractiveness of these indicators depends on the respondents’ age, too.

References