DETERMINATION OF PUBLIC DEMAND FOR TRANSPORT SERVICES

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ABSTRACT

The article studies the demand of the population for urban passenger transport services, and the satisfaction of passengers with the quality of vehicle operation and drivers, information support for passenger transportation. Based on the wishes of the respondents based on the results of the questionnaire survey, proposals have been developed to improve transport services in the city of Oryol.

Keywords: urban passenger transport, transport services, transport mobility, demand for transport services.

Background. *Urban passenger transport is designed to support the transport mobility of the major part of the population, and therefore the slightest disruption in its functioning is felt most acutely by the population, since traditionally public passenger transport provides more than 80 % of labor and domestic trips in local traffic [1].*

The development of urban passenger transport in accordance with the market laws should be based on the principle of dynamic correspondence between supply and demand. To implement it, the problem of improving the system should be divided into two tasks: a) studying the demand for transport services on the part of production and the population; b) justification of the proposal [2].

An analysis of sociological research has shown that most human needs are accompanied by a process of movement using different vehicles.

There is an international sociological classification of types of human activity and methods of analyzing the daily budget of a person's time. The classification includes 100 different types of human activity, for convenience, enlarged into 10 blocks. Nine of them contain a point about the time spent on traveling related to implementation of this block of needs, only one block «work in the household» does not have this item. Proceeding from this, we conclude that the study of transport demand of the population is based on the hypothesis that it is an integral part of the human needs system and should be studied in accordance with them [3].

With the help of questionnaires and surveys of the population, it is possible to identify the demand for transport services, both for the time being and for the future.

The Center for Strategic Studies of Rosgosstrakh conducted research to determine the attitude of residents of large and medium-sized Russian cities to the state of the urban road economy.

In 2014, the share of Russians who were satisfied with the work of public transport in their city grew. A positive assessment of its functioning is shared by 83 % of respondents against 76 % in 2013. It should be noted that public transport has always received mostly positive assessments of the population. This is due to the high competitiveness of the passenger transportation market. Its demonopolization, a relatively low «entry threshold» in the market process, a large number of «players» – all this leads to the fact that transport enterprises are forced to improve the quality of work to maintain their market position, which in turn ensures a high level of customer satisfaction with services of public transport (Pic. 1).

An important factor for determining the demand for public transport is time. According to a survey of 18 000 respondents from 23 Russian cities, the research center of the Superjob portal finds out how much time economically active people spend on public transportation, getting to work (Table 1) [4].

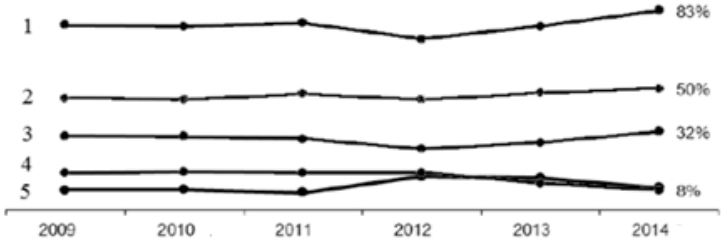
As we can see from Table 1, Moscow and St. Petersburg traditionally remain the record-breakers for time spent, which can be explained by the scale of cities and the shortcomings in the work of public transport. A considerable time is spent on waiting for the approach of the rolling stock because of the increased intervals of traffic on the routes of urban transport.

Residents of different Russian cities are almost unanimous in assessing the ideal time that they are willing to spend on the route «home–work»: this figure is on average 15–20 minutes. Muscovites and St. Petersburgers are the least demanding in this matter: the optimal travel time, according to their estimates, is about 20–25 minutes. The most demanding are the people of Togliatti: the ideal duration of a trip to work for them is 10–15 minutes, while the average Togliatti resident gets to work faster than residents of other major cities.

According to the existing standards, the maximum time spent on moving to work in one direction depends on the size of the city, and in the largest of them for 90 % of passengers it should not exceed 40 minutes. This standard affects only labor movements [5]. Of the 23 cities studied, only five fit into it fairly confidently.

When assessing the prospects for functioning of urban public transport, first of all it is necessary to turn to the main object and the subject of transportation process – the passenger. It is on him, his needs, the functioning of the transport system depends.

Townspeople often refuse public transport in favor of the private because of the inefficiency of the work of the former. The work of urban passenger transport



Pic. 1. Assessment of public transport work by population: 1 – positive estimates; 2 – rather a satisfactory estimate; 3 – good estimate; 4 – rather unsatisfactory estimate; 5 – absolutely unsatisfactory estimate.

Table 1

Average time spent on the road to work, 2014

City	Use public transport, %	Travel time, min	Desired travel time, min
Samara	38	42	17
Togliatti	34	30	12
Moscow	63	62	22
St.Petersburg	55	57	21
Volgograd	51	40	17
Nizhny Novgorod	48	47	20
Ulyanovsk	43	35	14
Saratov	41	48	16
Omsk	41	40	16
Voronezh	47	41	16
Irkutsk	48	41	13
Ufa	39	42	15
Sochi	34	42	14
Perm	39	42	16
Krasnodar	39	47	18
Rostov-on-Don	37	48	17
Novosibirsk	34	45	19
Yekaterinburg	32	45	17
Khabarovsk	32	39	14
Kazan	35	41	16
Krasnoyarsk	35	42	14
Chelyabinsk	29	35	15
Tyumen	25	41	14

could be more effective with a carefully planned organization and sufficient space for movement. Organizations providing transport services to the population neglect the collection and analysis of information on transported passengers, which entails difficulties in compiling a rational traffic schedule and its route.

Objective. *The objective of the author is to consider the problem of determination of public demand for transport services in the city of Oryol.*

Methods. *The author uses general scientific methods, comparative analysis, evaluation approach, survey and questionnaire.*

Results. *To get information about the workload of public transport, we will use the questionnaire method. The following indicators were used in the questionnaire: the condition of the rolling stock, the service culture, the professionalism of the drivers, the comfort of boarding and disembarking from the vehicle (Appendix A). In addition, the questionnaire offers open-ended questions, gives the opportunity to make suggestions on improving the quality of transport services. 218 people were interviewed who regularly use public transport in Oryol.*

According to the survey, the external technical condition of public transport is in a satisfactory state. Oryol residents are dissatisfied with the level of cleanliness in the salons of public transport, 49 % of respondents consider the state of the passenger seats satisfactory.

The survey on service culture shows that only 0,9 % of respondents are satisfied with communication with a driver, 6,4 % are completely dissatisfied, and 45 % consider existing communication acceptable. At the same time, 83 % of respondents noted that drivers often smoke while driving, but they do not turn on loud music.

Only 2 % of respondents are satisfied with maneuvers made en route, 35 % of those surveyed consider satisfactory compliance with the rules of landing and disembarkation, but 81 % of the respondents condemn the use of phones by drivers during work without special devices, which make their hands free.

Respondents offered the following improvements in transport services: increase in the number of rolling stock, seating equipment for passengers with children, use of the second door, increase in the capacity of the vehicle, inspections and attestations of maintenance personnel, creating a separate lane for public transport, modernization of fleet, the introduction of fare cards, increase the working time of public passenger transport.

In order to improve the transport services of the city of Oryol and based on the wishes of the respondents, we proposed:

1. Allocate lanes for public transport, providing them with markings, provided for by traffic rules. The expected result is an increase in the volume of traffic, a reduction in the time spent on waiting and traveling, and increased security.

2. Introduce an electronic fare system that involves the use of electronic cards by passengers and allows to optimize the timetable of the routes, identify overloaded routes based on the data obtained on passenger traffic, simplify the identification of stowaways, and control the cost of the trip.

Conclusion. *Urban passenger transport should primarily be focused on timely and qualitative satisfaction of the population's demand for transport services, therefore, it is necessary to carry out regular research*

Appendix A

The questionnaire of quality of service of passengers by urban passenger transport of the city of Oryol

Estimate on a five-point scale (1 point – unsatisfactory, 2 points – bad, 3 points – satisfactory, 4 points – good, 5 points – excellent), or choose the appropriate answer.

1. Condition of the rolling stock	
1.1. External technical condition of vehicles	
1.2. Clean interior of vehicles	
1.3. Condition of passenger seats	
1.4. Is there often a lack of lighting in the salons?	Yes No
1.5. Accessibility of information in the salons of vehicles about the route and the carrier, the availability of tickets	
2. Culture of service	
2.1. Courtesy of drivers when communicating with passengers	
2.2. Do the drivers smoke in the cabin of the vehicle?	Yes No
2.3. Do drivers often turn on loud music?	Yes No
3. Professionalism of the drivers' work	
3.1. Safety of maneuvers, smooth running	
3.2. Compliance with the rules for boarding and disembarking passengers at the stops, estimate the comfort of boarding and disembarking	
3.3. Do drivers often talk on the phone without using special hands-free devices?	Yes No
4. Quality of work	
4.1. Observation of the operating mode (start and end time) of the route	
4.2. How often is the traffic pattern not observed on the route?	Yes No
5. Estimate the comfort of travel associated with exceeding the permissible capacity of rolling stock	
6. Your wishes about the capacity of the rolling stock on the route	
7. Your suggestions for improving the quality of transport services	
8. Your suggestions for new routes, specify the intermediate and terminal points	

on passenger traffic and study the wishes of citizens in order to maintain the balance of supply and demand.

The development of a public transport system can not occur in isolation from the real needs of passengers. Only listening to the passenger, knowing his mood and aspirations, it is possible to achieve the optimal state of the transport sector of the city.

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Article received 17.05.2016, accepted 07.09.2016.