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Availability measurement of transport services in the Far East¹

Results of work on studying of availability of transport services to the population of the Far East of Russia are presented in this article. The estimates of availability of transport received earlier on the basis of data of official statistics were complemented with the information of sociological poll of consumers of transport services in the Khabarovsk territory. It allowed create fuller picture of the problems developing regarding the availability of transport services to the population of the Far East. At the same time the main objectives of the carried-out work were: studying of dynamics of the scales and factors of use by the population of different types of transport; assessment of the level of comfort of transport services; an assessment of economic availability of transport (in the section of separate types); allocation of problematic issues of functioning of passenger transport.

For collecting primary information individual internal questionnaire of the population in the main transport hubs of Khabarovsk on a settlement sample was conducted (representative selection with a confidential interval of 5%, 600 questionnaires are received).

In the article the received result on one of the directions of the conducted research – to the analysis of price availability of transport services to the population is analyzed (in an absolute form and in the ratio with the income of interviewed). The results of poll showed that high tariffs of air transport lead to an essential restriction of its availability not only to the groups of population with the low monthly income (up to 13 thousand rubles), but also for the persons with the average level of income. For the railway transport high price is noted by 10,3% of respondents; for the long-distance bus – 7,3%; for the river transport high price was noted by only 0,3% of respondents.

The received results confirm the fact that the mobility of population of the Far East is limited owing to the low economic availability of transport services, first of all the air traffic now.

Keywords: *the Far East of Russia, transport complex, transport service of the population, availability of transport services, questioning.*

Availability of transport infrastructure and a level of transport service of the population is one of the important components creating comfortable conditions of accommodation in a certain territory. The transport mobility (or mobility) of the population depends on many factors: features of system of the spatial organization of economic activity and a system of resettlement of this territory, presence at the population of motives for movements, the level of availability of transport to the population, etc.

Studying of availability of transport services to the population of the Far East of Russia from the point of view of the estimates formed by inhabitants of the region became the purpose of the represented work. At the same time the sociological methods of collection of information giving relevance and complexity to the research were used. This work is one of project components where at the previous stage the retrospective of availability of transport services to the population from the point of view of physical and economic components is considered [Bardal, 2017].

Studying of impact of transport on the development of economy in general can be carried out in two interfaced directions, the results of researches of which are widely presented in the publications of the Russian and foreign scientists.

The first direction is connected with the analysis of transport availability of the territory. At the same time in the works the following questions are considered: change of a cost of housing, transportation terms for the enterprises regarding the organization of deliveries of goods, logistics and so forth owing to the development of transport networks [Saber, 2017; Gulyas, 2016; Bugromenko, 1987; Kuratova, 2014].

The authors of works of the second direction place emphasis on the consumer, but not in the territory. Options of optimization of the systems of city transport, factors and methods of studying of mobility of the urban population, approaches to a level assessment of "transport discrimination of the population", possibilities of modeling of the transport systems of the city agglomerations and so forth are considered [Bulu, 2012; Velmozhin, 2002; Rajendran, 2013]. These works are performed on a joint of economic geography, economy and sociology, focused on the micro (separate groups of consumers, city systems) and meso - (administrative-territorial formations, regions of national economy) levels and in the majority have pronounced applied aspect.

The separate direction of researches within this subject which relevance increased in the last decade is studying of opportunities and conditions of an increase in the transport mobility for physically disabled people and people of advanced age [Ferrari, 2014; Holley-Moore, 2015; Sundling, 2016; Hjorthol, 2013; Risser, 2015].

Thus, studying of conditions and factors of the transport service of population is a hot topic of modern scientific research.

For the Far East of Russia the importance of the transport system is determined not only by the reasons given above, but also the specifics of the region which are consisting in its significant area, historically developed uneven resettlement and high extent of localization of economic activity, poor development of transport infrastructure.

The structural reform which began in the 90th years in Russia led to considerable changes of all spheres of economic activity, having affected including the transport complex. Aggravation of the problems of transport service of population, traditionally crucial for the Far East, became one of the most important consequences of transformations on transport.

Already at the beginning of economic reform sharp reduction of the centralized financing (up to complete cessation in some cases) led to the aspiration of the transport organizations to minimize passenger traffic along the unprofitable routes. Practically all were among the last regional air transportation in the remote and sparsely populated points of the Far East, suburban rail transportation, bus transportations to the certain sparsely populated areas, sea coastal transportations inside. Structural changes in the course of reform led to destruction of the transport schemes existing before in the east of the country providing mobility of the population both in the region and in the interregional routes.

As a result the mobility of population of the Far East (by which it is accepted to mean the volume of transport work on transportation of passengers (number of trips or passenger-kilometers) falling on average on one person) changed.

This indicator is a reference point for the planning of perspective volumes of passenger traffic, and, respectively, and for definition of the directions of development of transport networks necessary for the population. During 1990-2010 the mobility of population of the Far East decreased by 2,1 times, and by 2017 was reduced in comparison with 1990 by 3,2 times

Two multidirectional factors exerted the impact on negative dynamics of mobility of the population of the Far East: on the one hand physical availability of transport services (the equipment and spatial characteristics of transport complex worsened) decreased, on the other hand the economic availability (purchasing power of real monetary income of the population in the ratio with the dynamics of transport tariffs) increased [1].

To specify the key factors of estimates by the population satisfaction with the transport services and factors of use of transport we conducted a sociological research. The main objectives of this research became: studying of the dynamics of scales and factors of use by the population of different types of transport; assessment of the level of comfort of transport services; an assessment of economic availability of transport (in a section of separate types); allocation of problematic issues of functioning of passenger transport.

For collecting the primary information the selective method as carrying out continuous inspection at this stage is inexpedient owing to the high labor input, the required costs of the organization and carrying out incomparable to potentially slight increase of quality of the received results when using this method was used.

Calculation of optimum selection of respondents necessary for obtaining the reliable result was carried out. In this case the use of stratified selection type at which the studied set is divided previously into strata according to the general distribution of signs, known and significant for the research, was the most rational and further from everyone strata selection is taken. Selection of research is representative, with a confidential interval of 5%.

Within the conducted research after consideration of all alternative options the questionnaire was recognized as the most optimum method of collecting primary data. Questioning allowed obtain the empirical information concerning the objective knowledge, opinions, estimates of behavior of the population when using the transport services. Individual internal questioning was carried out. In the course of the poll it was collected for further processing of 600 questionnaires.

As the organization of poll in the all territory of the Far East wasn't possible, as the representative territory the Khabarovsk territory and Khabarovsk as one of the key transport hubs of the region was chosen. For the purpose of the greatest coverage of target audience survey was conducted in the points of localization of providing transport services for the passengers: airport (internal and international terminals), railway station, bus station. The choice of places of poll is caused by a problem of the maximum participation in questioning of the users of transport services of all available means of transport in the system of suburban transportations to obtain the most relevant and objective primary data.

For carrying out the research the questionnaire of the respondent which is containing necessary structural elements (introduction, the main part) and allowed obtain the information which is most answering to the research purposes was made. The questionnaire included the open, half-closed, closed, alternative school questions, questions menus that allowed observe the principles of profitability and reliability at poll. Structurally the questionnaire contained three blocks.

In the first block, proceeding from the research problems, questions relatively were included:

- 1) the general level of mobility of the population, allowing estimate the scale of use of the transport services;

2) motives of movement of the population in the regional, interregional and international movements;

3) factors of the choice by the population of concrete means of transport at the present stage.

All questions included the specifying gradation and allowed collect data in a section of separate means of transport (air, railway, bus or river transport). Collected information characterizes the frequency of movements, their main directions, opportunities and restrictions of use of different types of transport by the population of the Far East. On the basis of the analysis of answers of respondents the conclusions about the level of availability and real-life need for transport services to the population for the system of long-distance movements will be created.

The second block of the questionnaire included the questions concerning the general level of satisfaction of the population with the transport services. Respondents expressed their opinion concerning the quality of providing transport services, their availability at the price, problems in the course of transportation from the point of view of passengers. The obtained information allowed create the generalizing estimates of quality of the transport services provided in the region, to formulate the key problem aspects of passenger transport from the point of view of comfort, usability, level of service, etc. and also financial expenses of consumers as the important characteristic of availability and satisfaction with the transport services.

In the third block of the questionnaire the questions concerning personal information of interviewed were presented: sex, age, income level, employment that allowed obtain the more saturated information and to analyze various research aspects taking into account gender, age category of respondents, income level and professional accessory¹.

After drawing up the questionnaire pilot survey, which result was the updating of formulations of two questions for elimination of abstractness and achievement of the greatest possible understanding by respondents of heart of the question was conducted.

For an example, we will consider the results of poll received when studying price availability of the transport services. Among the questions of questionnaire there was a question concerning the problems connected with the use of this or that type of transport in particular separately the high cost of movements was allocated. When using planes the problem of high cost of air tickets question for every third respondent (35% of total). At the same time among the respondents who answered in the affirmative on the question, high cost is a problem already for every second respondent (47,5% of number of the respondents who answered the question).

For the other means of transport high price isn't a significant problem for the most part of respondents that is possibly explained by the lower tariffs for the services of railway, river transport and bus transportations. For the railway transport high price is noted by 10,3% of respondents; bus - 7,3%; for the river transport high price was noted by only 0,3% of respondents.

On a question of rather price availability of transport the answers of respondents were distributed as follows. Air flight is available at the price to every fifth respondent, another 25,3% answered that this type of transport "is rather available to them, than is inaccessible". 7,7% of respondents fell to the share of respondents for whom the air flight is inaccessible, another 22,3% answered that it "is rather inaccessible". As a result nearly third of the

¹ Sociological research "Measurement of Availability of Transport Services of the Population of the Far East". Population was made by the population of the Far East using services of long-distance transport. The Far East institute of management – branch of RANEPa, Khabarovsk, 2018. Research supervisors – Candidate of Economics, associate professor Khvan I.S., Candidate of Sociology, associate professor Khalikova S.S.

respondents (who gave the answer "no" and "isn't present rather") note inaccessibility of air flights to them owing to their high cost.

The smaller number of negative answers of the rather price availability is considerable it was received at the questions of other means of transport. Railway transport is unambiguously available practically to a half of respondents, a little more than another 30% answered "yes". Railway transport is inaccessible only for 1,3% of respondents at the price, and it isn't available to 5,3% rather. Use of the bus as re-locators is available to 55,7%, and "is rather available" to 19,8% of respondents. On the river transport the high percent of questionnaires (60% of total) in which there was no answer to the question that is connected with the insignificant passenger stream and a use of this kind for movements was received. Considered available at the price this type of transport of 15,2% of respondents; 7,8% of respondents answered "rather yes". Less than 1% gave the account "isn't present rather" and 3,5% considered the river transport inaccessible for them.

The received answers of respondents showed that the price factor is significant, especially at a choice of the plane. Use of planes is the least available type of transport at the price for the population of the Far East. At the same time this type of transport connection is the most significant as allows overcome the long distances in the shortest terms for the Far-Easterners.

More substantial conclusions of rather price availability of transport services can be received at the distribution of answers of respondents depending on the level of income of respondents. On the level of monthly average income (on the basis of data of the questionnaire) participants of the poll were distributed as follows: up to 13000 rub on one family member makes the income of 17,5% of respondents; income from 13000 to 26000 rub – at 41,3% of respondents; income higher than 26000 rub was designated by 40,2% of respondents.

At the distribution of answers to a question of price availability of the plane depending on the level of income of the respondents is expected higher rates were in the wealthiest group. Practically every fifth respondent from the highly profitable group noted the price availability of the plane. Services of the air transportation still are rather available to 17,6% of representatives of the highest profitable group. Services are inaccessible only for 1,7% of the respondents who answered the question in the questionnaire.

On the lower profitable groups the share of respondents to whom the services of airplane are unambiguously available, much lower. In the average group the percent of affirmative answers made 6,4%, in the low-profitable – 1,5%. The share of respondents who gave the answer "it is rather yes" in the average profitable group above also 13,3% whereas in the low-profitable - only 1,5% make. It should be noted that the services of the airplane are inaccessible for the identical number of representatives of the low-profitable groups. In each of them the percent of respondents who answered in the negative concerning availability of the plane made 4,1%. Distribution of the answer "rather isn't present" between the representatives of average and low-profitable groups of the respondents made 15,5% and 5,8% respectively.

Availability of the railway transport was rather high for all consumers in independence of the income level. Movements by this type of transport are absolutely available practically to 30% of representatives of the highly profitable group, to every fifth respondent whose level of income was in the borders of average group, and 5% - representatives of the low-profitable group. A probabilistic assessment of price availability was given by another 10,2%, 17,4%, 8,4% respectively. Less than one percent in each profitable group noted inaccessibility to them of railway transport. The answer "isn't present rather" gave 1,2%, 2,0% and 2,9% of respondents of each profitable group respectively.

The most available type at the price transport for consumers is the bus. The results of poll showed that in independence of income level the percent of the respondents who answered

the question "no" makes less than one percent in each profitable group and "there are rather no 1,5%" on the average. Distribution of the answers about availability of this type of transport showed almost identical indicators on the average and highly profitable groups - 28,6% and 30,8% respectively. The answer "it is rather yes" on the matter gave 9% of respondents whose level of income corresponds to the lower group, 11,6% - average and 6% - high.

The most part of respondents didn't give the answer to a question of availability of the river transport as the least popular and demanded among the population. From among the answers of respondents which answered the question distribution depending on the level of their income showed that this type of transport is available to 23,1% of respondents with the income over 26000 rubles. For the average group this value is 13% and for the low-profitable – only 1,3%. The fact that distribution of answers about inaccessibility of this type of transport showed that inaccessible it is for the bigger number of representatives of the highly profitable group – 4,6%, and in the low-profitable group, on the contrary, the smallest percent – 1,3% is interesting. Probably, such distribution became the results of different ideas of the level of tariff for this type of transport at the respondents of different profitable groups, owing to the fact that the insignificant number of people regularly uses this type of transport.

Thus, the analysis of answers of respondents to the questions concerning the price availability of different types of transport showed considerable differentiation of this indicator depending on the level of income of the population. As one would expect, the most inaccessible at the price were the movements by plane. And, the results of poll showed that the high cost of air flights leads to the fact that this type of transport is inaccessible not only for the low-profitable groups of the population, but also for the persons with the average level of income. The received results confirm the fact that the mobility of population of the Far East is limited owing to the low availability of transport services, first of all the air traffic.

The most comfortable and fast variant of movements out of borders of the home region is able to afford the limited number of consumers. The most part of the population is forced or to limit geography of the trips to the borders of the Far East, or to use less comfortable and high-speed means of transport for the distant movements.

Thus, the estimates of availability of transport received earlier on the basis of data of official statistics were complemented with the information of sociological poll of consumers of transport services in the Khabarovsk territory. It allowed receive the fuller picture of problems developing in the field of availability of transport services to the population of the Far East. In spite of the fact that the respondents only of one Far-Eastern subject participated in the poll, its results can be extended to the all Far-Eastern as the Khabarovsk territory possesses existence of the geographical, economic, social, including the demographic, characteristics typical for all Far-Eastern territorial subjects of the Russian Federation that allowed use it as the model region.

As a result at the formally higher standard of living of the Far-Easterners measured on an indicator of nominal income of the population, quality of life in the region, one of the components of which is availability of transport services, remains low despite the taken measures of the state support and the pursued regional policy.

¹ The work is performed with partial support of the Russian Federal Property Fund, a grant No. 17-02-00232-OGN "Change of availability of transport services for the population of the Far East of Russia".

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Bardal' A. B., Gritsko M. A., Khalikova S. S., Khvan I. S. Availability measurement of transport services: the Far East // *Power and Administration in the East of Russia*. 2018. No. 3 (84). Pp. 8–16. DOI 10.22394/1818-4049-2018-84-3-8-16