Quality Assessment of Transport Service of the Passengers in Vladivostok (Russia)

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Abstract: A summit of the Asia-Pacific Economic Cooperation was held in Vladivostok in 2012. Since 2008, within the scope of summit, the city authorities decided to hold what is called transport reform in Vladivostok. This work views the main stages of the transport reform and the measures to improve the work of the passenger transport carried out by the city administration. It also gives the nomenclature of quality indicators of passenger services. In 2012 the students and instructors of the department of Transport machines and technological processes in Far Eastern Federal University worked out a questionnaire the topic of which was "Quality assessment of transport service of the passengers in Vladivostok". The survey of public transport passengers was held in the spring of 2012. In 2013, after the summit and after a considerable improvement of the passenger transportation work the survey was held again. The results of both surveys are given in this article. They show how residents of the city assess the results of transport reform and the quality of passenger service in Vladivostok.

Key words: Passenger traffic • Transport service of passengers • Quality indicator • Bus • Route lines • Questionnaire • Survey

INTRODUCTION

Vladivostok is a city and a port at the far east of Russia; it is the administrative center of Primorsky Krai with the population of over 600,000 people. A settlement of that magnitude in its daily live cannot function without a qualitative and well-established mechanism of urban transport. Passenger traffic in Vladivostok is carried out mainly by bus.

Transport Reform in Vladivostok: Today in Vladivostok there are 19 passenger transport companies- 1 municipal and 18 commercial. [1] A few years ago, there was no single municipal bus in the city. 3 years ago, the average age of the buses was 12, 5 years, which greatly affected on their condition and appearance. Therefore, on the threshold of the upcoming summit of the Asia-Pacific Economic Cooperation (APEC), city authorities decided to hold what is called transport reform in Vladivostok.

The first stage of this reform was to examine the passenger traffic, to regulate the route lines and to determine the required number of rolling stock on city routes. Today there are 93 regular and 5 additional special bus routes in Vladivostok; also it has 1 tram and 4 trolleybus route. [2]
of security. These buses became the attraction of Vladivostok, clearly showing in which direction urban passenger transport should develop. In these new buses, there is a Wi-Fi-internet, which is free to use for the passengers during the trip.

In May 2013 10 new municipal buses of small class Volkswagen Crafter appeared on city routes. It is expected that by the end of the summer their number will increase to 100.

Now there are 80 municipal buses in the city, all of them are 2009-2012 model years.

We should say that following example of municipality who purchases modern passenger vehicles, commercial transport companies also began to upgrade their bus fleet. They bought big Daewoo and Hyundai buses and also small Gazel (minibus manufactured by GAZ motor works in Nizhny Novgorod) and Hyundai County. In two years, the commercial companies have upgraded nearly half of their buses. Now the average age of the city's bus fleet is 6 years.

The third stage of transport reform was the integration of intellectual transport systems. Such as GLONASS navigation system, which allows to trace the location of the bus at anytime and anywhere in the city, it also automatically declares the names of the stops for passengers, without disturbing the driver. This system also helped to organize a unified control point. In addition, bus stops in Vladivostok were equipped by data displays, which are used to display information about the arrival bus time at the stop point.

The next innovation is an electronic fare collection system "My dolphin". The advantages of this system are the simplification of payment processes in transport, no delays at bus stops and reduced fares by 10%

In April 2012, an internet site about city's passenger transport was developed, it allows residents of the city to see at what point in the city a particular bus is. Moreover, on the site, you can see the location of all bus stops, you can also calculate the approach time of transport to the bus stop.

In preparation for the summit in Primorye more than 20 projects of regional infrastructure have been developed and implemented, the most important of which are the bridges across the Golden Horn and the Bosporus Strait East. Now it is safe to say that the most important object for the residents of Vladivostok became a bridge across the Golden Horn (Pic.1). This bridge is one of the 5 largest cable-stayed bridges in the world. It opened a straight communication for cars (now also buses) between the two areas of the main city region - the center and the Cape Churkin, which reduced transport costs for residents, reduced travel time and improved the environment. The bridge over the Eastern Bosporus Strait allowed organizing a bus service between the mainland of Vladivostok and the island "Russian", where the new campus of the Far Eastern Federal University (FEFU) is located.

Thus, in recent years, on the eve of the APEC summit, public transport of Vladivostok began to change with the changes of city's entire infrastructure. However, studies show that the level of transport services does not meet modern requirements for the quality of passengers transport and causes many complaints from residents.

Quality Assessment of Transport Service of the Passengers

Quality Indicators of Transport Service: Vladivostok- is one of the motor cities of Russia; here for every 1000 inhabitants we count 566 cars. To become truly competitive with the individual passenger car, public transport must undergo a radical improvement. Therefore, international experience shows - public transport is one the industries where modern technologies are firstly introduced. Considering the concept of urban transport development, firstly we can highlight the problem of the quality of passenger service. In order to provide quality transportation, public transportation should not lose its main benefits: speed, comfort and affordability. This is the essence of the problem of passenger service quality. [4]

The term "quality of passenger services" has many definitions given by different authors. For example, in some sources it is defined as a measure that reflects the perception of the level of service by users [5], in others - as customer's satisfaction with the quality of services [6-8].
Spirin I.V. [9] defines the quality of transport services of passengers as a set of properties and indicators of the transportation process and the transportation system that determines their compliance with regulatory requirements and the ability to meet the specific needs of residents in accordance with the purpose of services.

By evaluating the results of the service for passengers, we take into account the following properties of service [10]:

- Safety
- Timeliness and speed
- Complexity
- Informativeness, authenticity
- Availability
- Baggage safety

Properties of the services are expressed in the form of qualitative and quantitative characteristics. Quantification of the characteristics of the service may be provided in the form of quality indicators, reflected in normative documents. The composition of these indicators is based on groups of quality indicators of passenger services, specified in State Standard P 51004 [11]:

- The indicator of informational service
- The indicator of comfort
- The indicator of speed
- The indicator of timeliness
- The indicator of baggage safety
- The indicator of safety
- Economical indicators

Spirin I.V. [9] considers the generalized (complex) properties of transportation process; with reference to the urban public transport, he proposes to classify them into four main groups: availability, performance, reliability and ease of use. These complex properties can be separated into a number of simple properties (picture 2).

There are indicators which directly affect the interests of passengers, such as the availability of fares, the number of transport routes in the area, the filling of the transport vehicles with passengers, especially at rush hours, the speed of the vehicle and the time it takes in the trip, the number of necessary stops, trip safety, the comfort of the vehicle, waiting time at the bus stop, the time spent to approach the bus and a number of other indicators.

The given classification of quality indicators of passenger transport was used for the study of the passengers' views on urban passenger transport.

The Method of Quality Assessment of Transport Service of the Passengers: Survey is one of the most accessible sources of information to determine the extent of passenger satisfaction by the quality and quantity of provided services. It can be used for mass survey.

The most important thing in the survey is to develop a questionnaire that does not take much time and gives full information about the extent of its satisfaction and prerequisites for solving existing problems.

In 2012 the students and instructors of the department of Transport machines and technological processes in Far Eastern Federal University worked out a questionnaire the topic of which was "Quality assessment of transport service of the passengers in Vladivostok ". The survey was conducted among the students and staff of FEFU.

RESULTS

The survey showed that 41% of respondents during a trip at the most usual route make two changes of buses, 26% do one change and only 27% reach the destination without changing. It means that route lines still need improvement, so that passengers can get to the destination with no more than one change.

When asked how the passengers should pay for the trip, the majority, notably 67% of respondents believe that cash and non-cash payment should be available; it depends on the request of the passenger. 27% believe that the payment must be in cash and only 6% - that it should be cashless. At that, 50% of respondents believe that the fare is a bit overstated.

70% of respondents are satisfied with the location of bus stops and only 30% are dissatisfied, because they have to spend a lot of time to approach the bus stops.
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The assessment of other quality indicators of transport service is decided to be made on a ten-point scale.

In 2013, after the APEC summit and after a significant improvement of the urban passenger transport, a survey was conducted again. The results of this survey are given in Picture 3.

As we can see from the diagram, all the indicators have increased by 0.5-2 points in a year. The highest score 7 (maximum score is 10) is given to "My Dolphin" system. With the appearance of new buses on the routes, the trips became more comfortable, this indicator increased by 2 points. The lowest score (3.5) is still given to the appearance and politeness of drivers. Vladivostok transport work in general has been estimated at 6 points out of 10.

The results of the survey showed that the quality of passenger transport services in Vladivostok has significantly increased in a year. However, to further improve the quality of passenger transport, we need improve the professional reliability of drivers.

Summary: The development of transport is usually considered in three aspects: social, economical and environmental. However, we should note that the social component was always undervalued. [12]

All measures carried out by the administration of Vladivostok and aimed to improve the quality of passenger services are likely to entail an increase in the cost of travel, but should have a much greater social impact. Thus, the improvement of the route lines will reduce the number of changes of buses, as well as the time and effort of passengers on approach to stopping points, thereby enhancing the territorial accessibility and ease of use. Renewal of the bus fleet will make trips comfortable, monitoring the technical condition of the buses and increasing the professional reliability of drivers will ensure that the passenger will reach the destination without delays and accidents. The presence of wireless internet makes traveling in buses less tedious, using modern informational technologies (GLONASS, a special internet site) aims to reduce the waiting time at bus stops and to improve the level of passengers information, the cashless payment system saves 10% of the cost of travel.

CONCLUSION

Thus, the transport reform already has its results and the public transport of Vladivostok becomes more affordable, reliable and attractive for residents and visitors of the city.

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