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INDICATORS OF SERVICE QUALITY IN PASSENGER PUBLIC TRANSPORT ON THE TERRITORY OF STARA PAZOVA

Key Words

Rated quality;
Desired quality;
Service quality;
Indicators;
Public transport

Abstract

An assessment of the quality of the public passenger transport service can be obtained by an evaluation by the service user. This paper presents indicators of the quality of transport service received by users of the public transport system in the territory of Stara Pazova municipality. The above indicators were obtained as the rated and desired quality of the transport service in the real public transport system of passengers in the 2017. The analyzed data on the quality of transport service were obtained by direct survey of users, according to the already defined survey form.

1. INTRODUCTION

There is a mutual interdependence between the quality of the public transport system and the quality of the transport service, which is required by combining the interests of the users, the carriers and the development strategy of the cities or the entire transport system.

Depending on the author and the aspects of observation, the literature provides a number of different approaches to the quality of the transport service, and therefore there is a difference in defining the quality characteristics as well as in defining the quality of the transport service itself.

The quality of the public passenger transport service is valued by many parameters. For example, frequent occurrences of incorrect and uneven vehicle movement on routes lead to a loss of public confidence in passengers, leading to a

reduction in the number of users. The inaccurate and uneven movement of vehicles also burdens the operating costs of transport companies due to the irrational use of capacity. Therefore, public transport companies should be particularly interested in achieving a high level of transport service quality.

2. DEFINITION OF PARAMETERS OF TRANSPORTATION SERVICE QUALITY

In the literature, depending on the author and the aspects of observation, several different approaches to the quality of transport service are given, and therefore there is a difference in defining the quality of the transport service.

As the transport service is characterized by many specifics, the most acceptable structuring of quality properties can be considered: Organizational support for service (Service support performance), Service operability performance, Service availability (Serviceability performance), Service integrity, Capacities of production of the system (Capability) and Exploitation reliability of technical exploitation (Dependability).

In the standards (1/191-19-01) the quality of service is defined as the general effect of a service property that determines what degree of satisfaction of the needs of the service user, emphasizing that the quality of service determines the complex of quality properties.

In the literature, the quality of the transport service is given special attention, so that as a result of the long-term desire to clearly define the quality of the transport service, a number of defined quality concepts have emerged. This is how we distinguish:

- desired (expected) quality,
- projected quality,
- realized quality and
- perceived (rated) quality.

3. PUBLIC TRANSPORT QUALITY INDICATORS IN THE STARA PAZOVA

As mentioned above, the quality of service can be seen as rated and expected. Users of public transport systems in an area expect the quality of service to be at a certain level and, as a rule, an assessment of the existing quality of service is also performed during the research.

In the area of Stara Pazova, a full-day survey was conducted by counting and surveying the users of the public transport system, so that it was possible for the users to view the quality of service as rated and expected. A survey of users of the public transport system was conducted on a randomly selected sample, while the size of the selected sample was determined to represent a representative state of the basic set of users. The survey included all lines belonging to the territory of Stara Pazova municipality, and the results obtained relate to the 2017 cross-section.

The aim of such research is to look at transportation requirements, on the one hand, and transportation offers, on the other.

Within the survey, public transport users were asked a number of questions related to the existing and desired level of quality of transport service. The following tables and charts give an overview of the assessment of the existing level of quality of service as well as the desired level of quality of transport service.

The surveyed public transport users had the opportunity to evaluate the current state of the public transport system. Out of the total number of users surveyed, the largest number of users 34.08% gave a rating of 1 (not satisfying) for public transport in Stara Pazova, 29.97% of users gave a rating of 2 (satisfies), and 28.10% of users gave a rating 3 (good). 7.84% of the surveyed users gave great and very good grades for public transport in Stara Pazova.

Table 1. Users rating of public transport in Stara Pazova

Rating of public transport	Number	Percent [%]
Not satisfying	365	34,08
Satisfies	321	29,97
Good	301	28,10
Very good	42	3,92
Great	42	3,92
TOTAL	1071	100

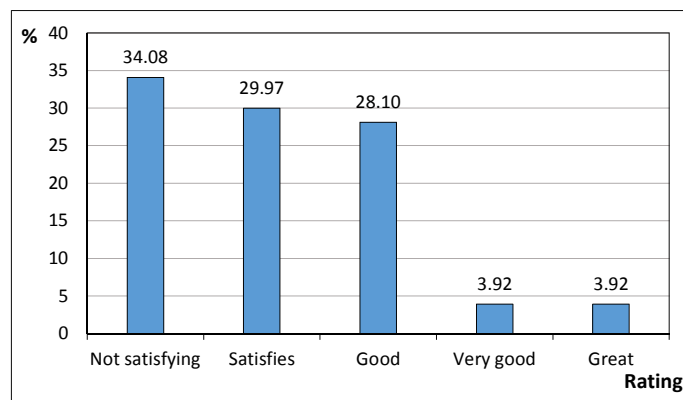


Figure 1. Graphical review of users rating of public transport in Stara Pazova

The surveyed users who were dissatisfied with the existing system were able to express the perceived deficiencies and rank them in the first, second or third place. As part of the survey, users were offered six of the most common disadvantages of public passenger transport (few departures, lines don't work all day, large jam, long walk to the station, high ticket price, cleanliness of the vehicle).

Of the total number of surveyed public transport users, the largest number of users as the largest lack of public transport in Stara Pazova cites a few departures, as many as 630 users. While in the second and third place, users most often state the cleanliness of the vehicle (310 and 393 users surveyed). As a slightest drawback, users cite a long walk to the station and a high ticket price.

Table 2. User responses to shortcomings in public transport in the Stara Pazova

Client answer	Few departures		Lines don't work all day		Large jam		Long walk to the station		High ticket price		Cleanliness of the vehicle	
	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%
1 st place	630	58.8	80	7.5	113	10.6	18	1.7	50	4.7	180	16.8
2 nd place	177	16.5	233	21.8	208	19.4	17	1.6	126	11.8	310	28.9
3 rd place	143	13.4	155	14.5	162	15.1	54	5.0	164	15.3	393	36.7

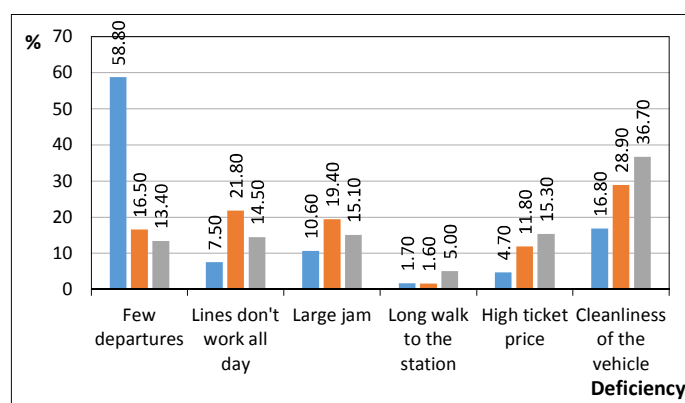


Figure 2. Graphical review of user responses to shortcomings in public transport in the Stara Pazova

The expected level of quality of service has been determined in relation to the shortcomings that users have shown in the survey through a series of questions. One of the questions was "Do you like the current number of departures?". Users who felt that the number of departures was not sufficient were additionally asked at what time, in their opinion, additional departures should be introduced. The data obtained were compared with departure times and capacity utilization and were used to design the new public transport system.

Of the total number of users surveyed, 39.68% indicated that their existing number of departures corresponded to them and were satisfied with the existing timetable, while 60.32% of those surveyed were dissatisfied with the existing number of departures because they could not meet their movement needs.

Table 3. Users response to the question: "Do you like the existing number of departures?"

Client answer	Number	Percent [%]
Yes	425	39,68
No	646	60,32
TOTAL	1071	100

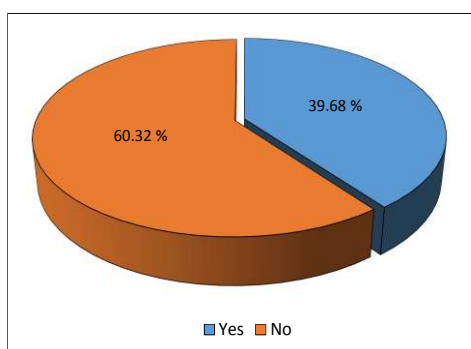


Figure 3. Graphic review of the users response to the question: "Do you like the existing number of departures?"

4. CONCLUSION

Research in the public transport system in the territory of Stara Pazova was carried out, among other things, to determine the characteristics related to the quality of service. The aforementioned surveys included the counting and interviewing of public transport passengers in the 2017 cross-section.

The user survey was conducted by direct interview of public transport users. The survey was intended to make the sample representative so that the data obtained would reflect the state of the whole system, while the respondents were randomly selected.

On the day of counting, 12.04.2017., a total of 6130 passenger rides were realized, on the same day, 1071 public transport users were surveyed, which represented 17.5% of the basic rally.

The analysis of the quality assessment of the existing state of public transport concludes that in 2017, the system with the lowest rating was 34.08% of users, while the highest rating was given by 3.92% of users, which gives an average rating of the whole system 2.14.

In order to be able to see the hierarchical order of the organization and measures in order to raise the level of quality of transport service, that is, special requirements of users, it is first necessary to define the goals and requirements that are set before the public transport system of passengers, the requirements of certain interest groups (city government bodies, carriers and users) according to the system.

The public transport system needs to be designed according to the needs of the users, in accordance with the legal framework, and the quality of services must be constantly monitored and controlled, and efforts should be made to create conditions for its permanent increase.

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