

# **Analysis Of Factors Affecting The Speed Of Urban Public Transport In Andijan City**

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**Annotation.** A distinctive feature of urban public passenger transport is its organization of movement along certain routes (including route taxis). An important element in assessing passenger transport services is the selection of criteria for evaluating the effectiveness of the final results of the transportation process. This requires the use of logistics methods in organizing urban passenger transport.

**Keywords:** Passenger flow, bus, weather conditions, road conditions, radar, recording devices, portable devices, stopwatch, measuring tape, pneumatic tubes.

**Introduction.** The process of organizing and managing the movement of public passenger transport depends on a multitude of factors, which can be divided into two large groups:

- factors directly affecting the movement of public passenger transport (type and capacity of the public transport vehicle, dynamic traction and braking parameters, passenger flow, level of equipment of intermediate stops, operational indicators, driver's work experience and qualifications, etc.);

- factors indirectly affecting the movement of public passenger transport (road conditions, weather conditions, the technical condition of the street and road network, technical means of traffic control used on the street and road network, the degree of traffic congestion on the routes of public passenger transport, etc.).

When organizing public passenger transport, it is possible to achieve the expected results by taking into account the above-mentioned factors. These factors are closely interconnected and influence the movement of public passenger transport individually or in a complex manner.

The mode of movement of public transport depends on the given schedule, and the schedule is usually developed taking into account the needs of passengers, the length of the route, and the types of buses on the route. Weather conditions are one of the main factors influencing passenger traffic on public transport. The movement of public transport according to a pre-developed schedule will also be directly related to weather conditions. As a result of correct and accurate accounting of weather conditions, the quality of public transport services increases. This will lead to an increase in the level of passenger use of public transport services, and as a result, to increased transportation efficiency.

## **Materials and methods.**

Experiment planning includes several stages:

1. Preparation for experimental research;
2. Clarification of indicators to be studied in experimental studies;
3. Determination of methods for conducting experimental research;
4. Conducting experimental studies;
5. Obtaining the results of experimental studies and their primary processing;
6. Generalization and analysis of the results of experimental studies;
7. Comparison of the results of experimental studies with the results of theoretical studies;
8. Determining the degree of reliability of experimental research.

Conducting experimental studies using the above-mentioned methods allows achieving the intended goal.

There are various methods for measuring the speed of public transport on a route, which can be divided into three groups:

- a. portable devices with the possibility of mobile application in many places;
- b. intra-road devices, which are installed in the upper part of the track (pneumatic pipes);
- c. Stationary devices (radar, recording devices) installed on or along the road.

Photo-video images can be cited as a universal method for determining the speed of movement. Using a photographic image, it is possible to determine a number of characteristics of the traffic flow. For example,

this method allows for sufficiently accurate measurement of traffic flow density, which is relatively difficult to measure using other methods.

Movement organization means the following.

1. Creation of a space (streets, roads, zones) for movement on common ground, including material and informational support of this space (infrastructure support). In this area, the following tasks can be highlighted:

- study the characteristics of traffic, carried out by various methods, to obtain reliable information about the movement of vehicles and pedestrian traffic;
- identification of dangerous places for the movement of vehicles and pedestrians and development of measures to eliminate them;
- identification of obstacles in the road network (transport delays) and development of measures to increase road capacity;
- based on the analysis of the obtained data, the development of rational forms of movement and their adaptation to the changing conditions and needs of transport and pedestrian communications.

The operational speed of public passenger transport represents the average speed due to the time lost due to stopping in areas with low capacity of the road network, at prohibitory lights of traffic lights, and at intermediate stops.

The technical speed of public passenger transport is the speed that does not take into account delays on the road network for various reasons, including the degree of traffic congestion, i.e., the speed of the vehicle during its movement.

### Results.

Communication speed is the speed of connection between the initial and final stops of public passenger transport, which depends on the technical condition of the road network, excessive delays of public transport on the roads, and the dynamic characteristics of the vehicle's movement.

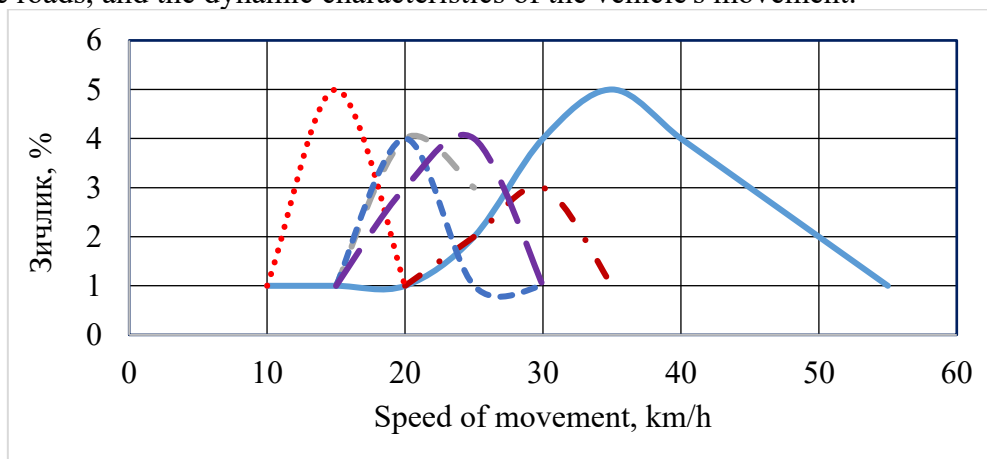


Figure 1. 394 - Normal distribution of vehicle speeds on the section of the road "Pistamozor - Andijan Agricultural University" at the entrance to the city, around the "Dulma kitchen."

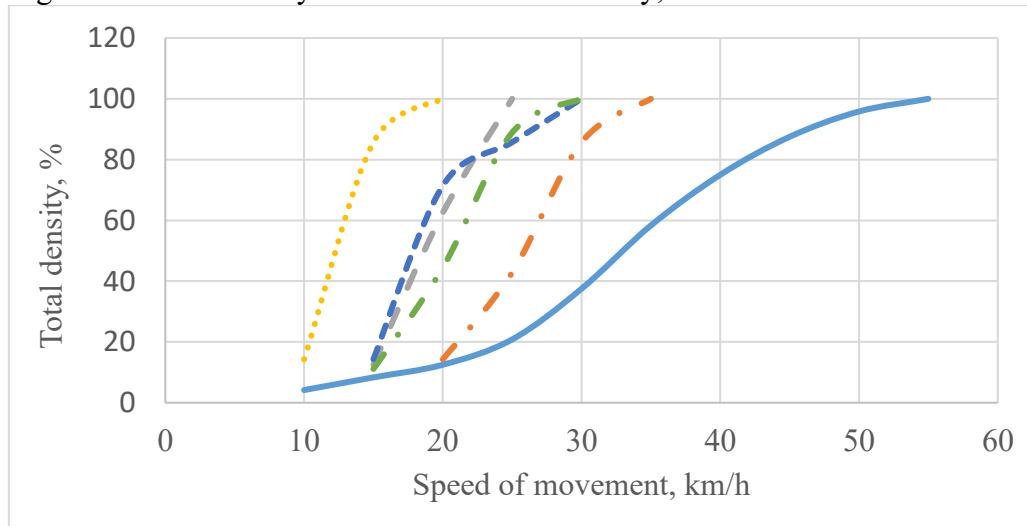


Figure 2. 394 - Cumulative curve of the speed of vehicles on the precession section around the "Dulma kitchen" at the entrance to the city on the "Pistamozor - Andijan Agricultural University" route.

Studies have shown that an increase in the level of traffic load on the road also affects the speed of buses moving along the route. As can be seen from Figure 1, the modal speed of buses on this section of the road is 20 km/h, while for passenger cars this indicator is 35 km/h.

In this area (in the direction of the road entering the city), the traffic intensity of the road is equal to the following.

$$z = \frac{N}{P} = \frac{2116}{4500} = 0,47,$$

Along the exit route from the city

$$z = \frac{N}{P} = \frac{1471}{6600} = 0,32,$$

Here, N - traffic intensity, R - road capacity

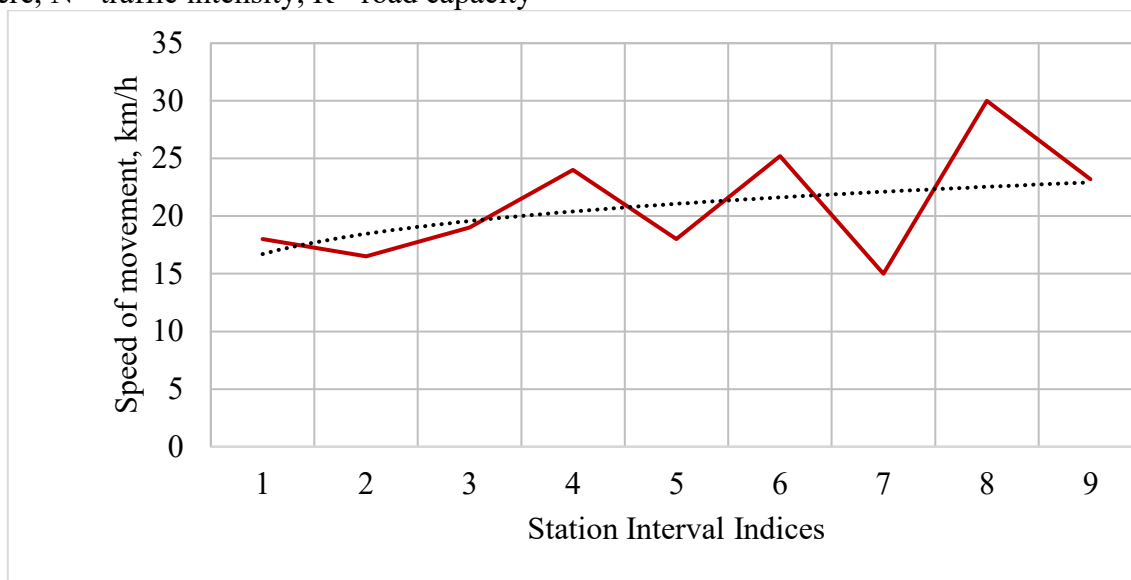


Figure 3. Change in speed on bus route 394 - "Pistamozor - Andijan Agricultural University"  
 Inter-station indices:

- 1-Pistamzor-Kholis SM.
- 2-Kholis SM-Children's Garden.
- 3-Kindergarten-24-School.
- School No. 4 - 24 School No. 30.
- School No. 5-30 - Business School.
- 6-Business School-Dome.
- 7 - Dome-Olympic Reserve College.
- 8-Olympic Reserves College-Oqyor Industrial College.
- 9-Akyar Industrial College-Agricultural Institute.

$$Y=16705x^{1442},$$

$$R^2= 0.2087$$

## Conclusion.

1. Studies have shown that an increase in the traffic load on the road also affects the speed of buses moving along the route.
2. The calculation results show that the road load factor is not the main reason for the decrease in the speed of buses moving along the route. The geometric dimensions of the sections of traffic on the roadway do not correspond to the road category, and the transport and operational quality indicators of the road do not meet the requirements, which, in turn, negatively affects the road capacity.

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