



## FACTORS AFFECTING PASSENGER TRAFFIC IN THE URBAN TRANSPORT NETWORK

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<https://doi.org/10.5281/zenodo.7593221>

Annotation. The main complexity of the issues of managing passenger transportation processes in cities is the uncertainty in the conditions of transportation and the formation of traffic flows. The influence of most factors affecting the size of the passenger flow will have a variable and probable character in the time MOBA. Dynamic and complex behavior of their effects on the formation of the passenger flow rate is the main condition that leads to the uncertainty of the conditions of passenger transportation. This article describes the changes in passenger flow in urban, suburban areas, the factors that cause it, the disadvantages of studies of passenger flow.

Keywords: passenger, passenger transportation, urban transport, research, time Meurs, transport infrastructure, stops, correspondent.

The formation of passenger flows is also influenced by The Times of the day, days of the week and the seasons of the year. The quality and quantity of transportation services to the townspeople is determined by the following four groups of factors:

- 1) parameters of passenger flows that are formed depending on the needs of the city's population for transport (transportation) services;
- 2) parameters characterizing the activities of passenger transport organizations in the transport service market;
- 3) urban transport infrastructure (automobile, tram, trolleybus, metropolitan roads and transport network, parking stops and stations);
- 4) influence of the external environment.

To ensure the effective functioning of the passenger transport system, first of all, it is necessary to have information about the size of the requirements for transportation arising from the transport needs of the population. Demand for transportation generates supply, while the ratio between supply and demand determines the situation in the transport service market.

The demand for the service of urban passenger transport can be assessed based on the study and analysis of passenger flows. To some extent, the study of flows can also provide information about the different territorial zoning, area and Inter-address movement (correspondent) of the urban area of the population. Flows arise from the need for passengers to move around the city area.

Passenger traffic can be divided into two types:

- 1) movement in directions (correspondent);
- 2) movement in the network.

Although at the moment there are many ways to track and analyze passenger flows, the following two disadvantages are characteristic of all of them:

1) The study of passenger flows is carried out in a certain area of the city for a certain period of time, but the results obtained in this are summarized to the whole city and used for all time intervals;

2) The studied state will belong to the past, but its results will be used for future solutions. In other words, the studied passenger flow is the result of the actual fulfillment of the past demand for transportation, and in the future the expected flow may be different from it;

3) the study and analysis of flows is an event that requires a very large volume of labor capacity (thousands of people-hours), at which very high costs will be needed.

The issue can be solved through mathematical models that reflect the connection of the expected transportation cost in the future with the factors that provoke the movement of the townspeople. In this case, it is important to take into account the factors of the following three groups that form the transport mobility of the population when determining the magnitude of passenger flows in perspective.

The factors of the first group make it possible to characterize the conditions of passenger transportation: urban planning and planning; the location of residential areas of the population, cultural recreation areas, shopping centers and industrial enterprises, country courtyards; the location of the road network and infrastructure; the time under consideration-the season, month, days of the week, hours of the day, etc.

Factors of the second group characterize the demand of the population for passenger transportation. The segmentation (division into groups) of this demand depends on the social and professional composition of the city's population. And this largely depends on their requirements for the cost of

transport passenger traffic, speed of movement, comfort, reliability and safety. An indicator of grouping the requirements of passengers for urban transport can be a socio-economic assessment of the time spent on their movement.

If a certain group of residents overestimates their time and has a high level of payment opportunities, then they strive to move at high speed and comfort, reliability and safety, and in this they also agree on additional costs.

The factors of the third group are explained by the competitive environment for urban passenger transport. The city transport service market is attended by carriers with various organizations and forms of ownership: Joint-Stock Companies, companies with limited liability or private entrepreneurs, etc.

Factors that shape population mobility

- Group 1: factors characterizing the conditions of passenger transportation.
- Group 2: factors that form the extiality and demand of axoli for transportation.
- Competitive environment between the transport groups that form the 3rd Group urban passenger transport system.

The activities of urban passenger carriers are carried out within the framework of the current legal and regulatory rules and under the control and influence of municipal authorities.

It is possible to clearly imagine and formalize the mechanism of influence of a group of factors on the formation of passenger flow. For example, the influence of the population-living region on the passenger flow forming from this place can be characterized by the density of the population living in this zone. And the passenger flow received by one urban zone should be determined by the number of people coming to work at enterprises located in this zone. While it is believed that the influence of another group of factors can be modeled, it is much more complicated: how, for example, to model the influence of the level of supply of the population with personal cars?

Objectives of action

1. Voluntary behavior
  - To resorts (sanatorium, resort)
  - To cultural and social events (Cinema, Theater, concert)
  - Shopping centers
2. Forced behavior
  - Go to work-to come
  - Go to study and come
  - Go to and from organizations within or outside the city according to job assignments

The general law is understandable: the higher the level of personal transport provision, the lower the share of passenger traffic from the user of public transport can be. But many factors that disrupt such a link can be indicated: for example, the rise in the cost of car fuel, the increase in the cost of maintaining the car-technical condition at the required level, the low cost and convenience of using public transport, etc.

Quantitative modeling of the influence of a group of factors is extremely complex, the influence of which can be taken into account only through expert assessments. For example, the fact that the stuffy air calls the townspeople to suburban resorts, or the increase in personal computers can reduce visitors to "Internet" cafes, etc. An increase in free time, of course, can increase the transport mobility of the population for some time, but it is extremely difficult to formally express such a state. It is also difficult to model the walks of the inhabitants of a certain microhood associated with cultural leisure, since they are associated with various reasons: some families go to the circus, others to the Philharmonic, some to a guest or to a concert. A group of factors leads to a sharp increase in the volume of passenger traffic: if, after a long period of precipitation, the air opens, the flow of passengers going out of town increases, if a concert of a famous artist is planned for several days, then the flow of passengers arriving and leaving the concert hall at certain intervals increases.

The effectiveness of logistical information systems in the field of passenger transportation depends on the circumstances of servicing the city's population. Thanks to this, it is extremely important to clearly group the cases of urban passenger traffic. On the basis of such grouping should be put "purpose of passenger movement". But it is also necessary to take into account in what condition (voluntary or forced) this action is carried out. The voluntary mobility of the population is associated with the actions carried out in his free time, and the obligatory one with the actions carried out to fulfill the socio-economic tasks assigned to him (going to work, study and returning, going on a business trip.

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