

PAPER

ORGANIZATION OF PASSENGER TRANSPORT IN URBAN PUBLIC TRANSPORT (ON THE EXAMPLE OF THE CITY OF KARSHI)

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Abstract

Passenger transport services in Karshi city are not sufficiently developed, and the organization of transport vehicles for serving the population is not properly established. Bus routes in Karshi city are limited, and bus transport services are not available in densely populated areas. Most of the transport services for the population are carried out by light vehicle taxis, which do not meet current state requirements.

Key words: vehicles, passenger transportation, route coefficient, public service, passenger flow analysis.

It is well known that humans have always been in motion to meet their socio-economic, spiritual, and other needs, striving to live better, and building caravan routes to travel from one place to another. These caravan routes have contributed to the prosperity and development of the land and have served to strengthen the bonds of friendship between nations. If we metaphorically consider our activities as their continuation, we are responsible for connecting cities to cities, fostering relations between people, and most importantly, ensuring the safe and sound transportation of passengers to their destinations for the progress of our independent country. In successfully organizing

this mission, automobile transport is considered the most efficient and convenient means of passenger transportation.

Improving transport infrastructure and systematically organizing the activities of automobile transport service enterprises, harmonizing the relationship between the population and transport companies, ensures the economic development of the country. From this perspective, conducting an in-depth analysis of the activities of Uzbekistan’s automobile transport system enterprises and enhancing their innovative operations are among the pressing issues of today. Therefore, transport companies must reassess

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their operations and focus on meeting passenger demands.

Providing high-quality transport services to the population of the Kashkadarya region and Karshi city, including workers active in all sectors of the economy, as well as students and learners in educational institutions, is one of the most important tasks for automobile transport enterprises. Today, it is impossible to imagine the active social life of any individual in society (traveling from one place to another) without transportation.

Currently, in the city of Karshi, passenger transportation by automobile vehicles is carried out by private carriers, and there exists a competitive environment among them. Free competition among private passenger transportation companies necessitates the proper organization of economic activities in every sector and the development of new management systems and technologies. Otherwise, the risk of their decline, as evidenced in the early years of independence, becomes apparent.

Life demonstrates that in the future, further development of the economy of the Republic of Uzbekistan and its transformation into a prosperous and great state cannot be achieved without highly skilled personnel who can think innovatively and possess deep knowledge in line with the conditions of a market economy.

The Government of the Republic of Uzbekistan, while developing the automotive industry, has also adopted several laws and decisions regarding automobile roads and transportation, urban transport, road traffic safety, and free use of urban transport. Based on these, concepts for the development of urban passenger transport and several regulations have been developed.

Safe and convenient transportation means are required for city residents to reach workplaces, residences, recreational areas, and other essential destinations in a short time. The demand for transportation largely depends on the size of the city, the financial well-being of the population, and their cultural level [1].

Choosing the right routes reduces the time passengers spend reaching their destinations and increases the efficiency of vehicle usage. To describe the network structure of the route system, the route coefficient is used.

The route coefficient (K_y) is determined by the ratio of the total length of all bus routes ($\sum L_y$) to the length of the streets and roads traversed by the bus routes (L_m), i.e., the length of the bus network:

$$K_y = \frac{\sum L_y}{L_m}.$$

The higher the route coefficient, the more convenient the conditions are created for passengers.

Example: Let the total length of all bus routes in the city be 2000 km, and the length of the roads covered by these routes be 1000 km. In this case, the route coefficient will be:

$$K_y = \frac{2000}{1000} = 2.$$

For cities with well-developed transport networks, this indicator ranges between 1.2 and 3.5.

In Karshi city, this indicator is even less than 1. Therefore, it is recommended to organize bus routes in Karshi city more effectively [2]. Opening new routes, purchasing modern buses for these routes, and directing them to the appropriate routes are among the urgent tasks of today. A bus route is a network of roads connecting specific starting and ending points, along which buses stop at designated intermediate points to drop off and pick up passengers. This network includes urban streets (roads) that connect all destinations and facilitate the movement of buses loaded with passengers.

The type of transport to be used and the organization of passenger transportation in cities primarily depend on the type of city, i.e., the number of passengers, the area of the city, and the existing roads and their configurations.

Urban areas are classified based on the number of passengers as follows:

- Very large – passenger count exceeds 2,000-2,500 thousand;
- Large – passenger count ranges from 200-500 thousand;
- Medium – passenger count ranges from 100-200 thousand;
- Small – passenger count is less than 100 thousand.

Considering the limited number of buses available for passenger transportation on routes and the absence of additional buses required during

”peak” hours, it becomes evident that developing and implementing the most effective methods for organizing movement is essential to provide high-quality transport services to passengers [3].

Example: The capacity of a bus, $q_n = 37$ passengers, the round-trip time on a regular route, $t = 80$ minutes, the stopping time at intermediate stations, $t_{ob} = 1$ minute, and the stopping time at the final station, $t_{oxb} = 5$ minutes. Let the maximum passenger flow during peak hours be $Q_{\max} = 280$ passengers/hour.

The required number of buses and the movement interval for transporting passengers on a regular route are calculated as follows:

$$A_y = \frac{Q_{\max} \cdot t}{q_n \cdot 60} = \frac{280 \times 80}{37 \times 60} \approx 10 \text{ buses.}$$

$$I = \frac{t}{A_y} = \frac{80}{10} = 8 \text{ min.}$$

In large cities, the increase in the mobility of the population requires addressing a number of issues related to providing transport services. For example, in Karshi city, there are no routes connecting the outskirts with the city center, such as linking the Bogishamol neighborhood with the city center, the Kavali neighborhood with the city center, Iski Shahar, and the Yerkurgon market. Not all routes in Karshi city are equipped with passenger stops. In recent years, due to the population growth in Karshi city, the construction and operation of new social, economic, and cultural facilities attracting passengers, and the expansion of the city’s area, there has arisen a need to improve the quality of transport services for passengers and, where necessary, to address issues related to opening new routes [4].

Thus, currently, public transport services are not available on many routes in Karshi city. As a result, passengers on these routes are forced to use unregulated taxis to reach their destinations. The condition of public transport services for passengers in Karshi city does not meet the demands of the population and has caused justified complaints from residents.

To positively resolve this issue and improve transport services for the population in Karshi city, it is necessary to thoroughly study passenger

flows on the routes and open new ones. Passenger stops should be constructed at a convenient and comfortable distance of 200–300 meters along each route. These stops should be built in pockets off the main road to ensure passenger safety. Additionally, routes should connect the outskirts of the city to the center, and bus operations on these routes should be organized efficiently to ensure passengers can reach their destinations safely and at minimal cost.

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