



 Research Article

CRAFTING A METHODOLOGY FOR BUS SERVICE LIFE OPTIMIZATION IN FERGANA'S TRANSPORT ENTERPRISES

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ABSTRACT

This article focuses on enhancing the operational efficiency of vehicles within transport enterprises in Fergana by identifying the optimal period for their utilization. By proposing a methodology to determine the most effective lifespan of vehicles, the study aims to optimize resource allocation and improve overall performance in the transportation sector. Through empirical analysis and strategic planning, this research offers valuable insights into enhancing operational efficiency and maximizing the utilization of vehicles in Fergana's transport enterprises. The purpose of this article is to increase the efficiency of the operation of vehicles based on determining the optimal period of their use at transport enterprises located in the city of Fergana.

KEYWORDS

Transport, productivity, methodology, enterprise, efficiency, transportation, passenger, optimal, term.

INTRODUCTION



Today, the constant growth of the population of Fergana, i.e. the annual growth of the population by 2.3%, determines the need to improve the transport infrastructure of the city. As we know, among the types of transport, road transport is the main type of transport and makes up 90% of passenger transport, rather than pipeline, water and industrial transport [1-3].

Taking this into account, the task of effective management of the operation of transport enterprises appears. It is necessary to determine from time to time the optimal mode of its use, the type and duration of repairs, write-off and the

possibility of purchasing new equipment. To determine the optimal service life of buses in transport enterprises in Fergana from the point of view of economic feasibility, it is very important to carry out such an analysis very thoroughly and systematically [4-7].

Most of the passengers transported by the rolling stock of bus companies are intercity and suburban transport. The distribution of the number of transported passengers and passenger turnover by all types of transport and regions of the republic is presented in Table 1.

Table 1. Passenger traffic in the regions of the republic

Years	The 2015 year	The 2016 year	The 2017 year	The 2018 year	The 2019 year	The 2020 year	The 2021 year
Automobile transport industry	6241.3	5716.3	5974.2	6403.4	6342.5	7107.6	7306.5
Passenger taxi	30.7	31.8	35.4	42.4	59.2	68.2	71.1
Railway	29.1	26.7	27.6	25.8	29.2	29.8	31.3
Aviation	2486.3	2674.5	2708.9	2785.6	2807.6	2624.3	2921.3
total	8787.4	8449.3	8746.1	9257.2	9238.5	9829.9	10330.2

Transportation of passengers by intercity buses constitutes the main part of the total volume of traffic. This is mainly due to the population density in the cities. The great demand for this type of service has increased the competition

among the car companies engaged in transportation [8-11].

In recent years, high competition has emerged in Fergana in the field of passenger transport in the



city, and as a result, the number of private transport companies is increasing. The tariff for passenger transportation is regulated by local authorities and controlled by the state institution Fergana City Transport Department. In this regard, one of the most important tasks facing transport enterprises is to reduce the costs of operating the bus fleet by looking for internal reserves, which leads to an increase in their work efficiency [12-18].

Research conducted on the technical operation of buses shows that most of them deteriorate as the operational characteristics of the bus increase. This affects the quality indicators of the car park.

By evaluating the changes in the structure of the automobile enterprise, transport over time in terms of all realized indicators of the enterprise, namely, volume, level of reliability, level of technical preparation, consumption of spare parts and fuel and lubricants, etc. it is possible to predict the changes of means. A significant deterioration of bus fleet performance indicators - average bus productivity, revenue, technical readiness indicators, spare parts requirements and manpower - is associated with an increase in the service life of buses until they are withdrawn from service with a decrease in reliability. In the process of ageing, both quantitative and qualitative indicators of the motor transport enterprise change. In particular: it provides for the expansion of the range of necessary spare parts and materials, the implementation of new types of work and the increase of equipment.

Solving the identified problem should be based on the practical application of the developed methodology. This allows us to determine the optimal service life of buses in the transport enterprises of Fergana based on the technical usage indicators describing the intensity of the use of motor vehicles. The dynamics of their changes over time, the service life of buses, the level of operation and the costs of their maintenance. This will reduce the cost of the transport process and, accordingly, the burden on the city budget in the form of subsidies for transport enterprises in Fergana.

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