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INDICATORS AFFECTING PASSENGER SERVICE PROCESSES AND THEIR SCIENTIFIC INTERPRETATION

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Abstract: *Many traffic flow parameters affect the performance of the road network at high voltage. These are low vehicle speeds, high vehicle distances relative to road capacity, and density per unit time (lane occupancy). In turn, a number of factors affect the decrease in traffic speed: the presence of slow-moving vehicles in the stream; pedestrians crossing the road irregularly; increase in traffic flow, etc.*

The issues of public transportation depend on many factors, each of which requires a separate approach and a complex solution. In large cities around the world, the quality indicators of public transport services, including the issues of getting passengers to their destinations on time and in comfortable conditions, modern solutions to existing problems, and improving the quality of service, are becoming important. Therefore, urban passenger car transport companies It is important to develop recommendations for improving the mechanism of sustainable development of services.

The article examines the problem of passenger transportation efficiency. The socio-economic importance of passenger transport is based. Factors affecting the efficiency of these vehicles, criteria and indicators describing their efficiency were determined.

Keywords: *Passenger transportation, transport efficiency, efficiency factors and criteria, efficiency indicators.*

Annotatsiya. *Ko’cha-yo’l tarmog’ini katta kuchlanish bilan ishlashiga transport oqimlarining ko’plab parametrlari ta’sir ko’rsatadi. Bular avtomobillarning past darajadagi harakat tezliklari, yo’lning o’tkazish qobiliyatiga nisbatan transport vositalarining yuqori darajadagi masofa va vaqt birligi ichidagi zichligi (qatnov bo’laklarining bandligi). O’z navbatida harakatlanish tezligi pasayishiga bir qancha omillar ta’sir ko’rsatadi: oqim tarkibida sekin harakatlanuvchi transport vositalarining mavjudligi; piyodalarning yo’lni tartibsiz kesib o’tishlari; transport oqimi jadalligining ortishi va h.k.lar.*

Aholiga transport xizmati ko’rsatish masalalari juda ko’plab omillarga bog’liq bo’lib, ularning har biriga alohida yondashuv va kompleks hal etishni taqozo etadi. Dunyoning yirik shaharlarida jamoat transporti xizmatlarining sifat ko‘rsatkichlari, jumladan, yo‘lovchilarni o‘z manzillariga o‘z vaqtida va qulay sharoitlarda olib borish, mavjud muammolarni zamonaviy hal etish, xizmat ko‘rsatish sifatini oshirish masalalari muhim ahamiyat kasb etmoqda. Shuning uchun, shahar yo‘lovchi avtomobil transporti kompaniyalari xizmatlarni barqaror rivojlantirish mexanizmini takomillashtirish bo‘yicha tavsiyalar ishlab chiqish muhimdir.

Maqolada yo‘lovchilarni tashish samaradorligi muammosi ko‘rib chiqiladi. Yo‘lovchi transportining ijtimoiy-iqtisodiy ahamiyati asoslanadi. Ushbu transport vositalarining samaradorligiga ta’sir qiluvchi omillar, ularning samaradorligini tavsiflovchi mezonlar va ko‘rsatkichlar aniqlandi.

Kalit so‘zlar: *yo‘lovchi tashish, transport samaradorligi, samaradorlik omillari va mezonlari, samaradorlik ko‘rsatkichlari.*

Аннотация: *Многие параметры транспортных потоков влияют на работу дорожной сети при высоком напряжении. Это низкие скорости транспортных средств, большие расстояния транспортных средств относительно пропускной способности дороги и плотность в единицу времени (занятость полосы движения). В свою очередь, на снижение скорости движения влияет ряд факторов: наличие в потоке тихоходных транспортных средств; пешеходы, неправильно переходящие дорогу; увеличение транспортного потока и т.д.*

Вопросы общественного транспорта зависят от множества факторов, каждый из которых требует отдельного подхода и комплексного решения. В крупных городах по всему миру становятся важными показатели качества услуг общественного транспорта, включая

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вопросы доставки пассажиров к месту назначения вовремя и в комфортных условиях, современные решения существующих проблем и повышение качества обслуживания. Поэтому компаниям городского пассажирского автомобильного транспорта важно разработать рекомендации по совершенствованию механизма устойчивого развития услуг.

В статье рассматривается проблема эффективности пассажирских перевозок. Обоснована социально-экономическая значимость пассажирского транспорта. Были определены факторы, влияющие на эффективность этих транспортных средств, критерии и показатели, характеризующие их эффективность.

Ключевые слова: *Пассажирские перевозки, эффективность транспорта, факторы и критерии эффективности, показатели эффективности.*

Introduction

In our republic, scientific-research works aimed at increasing the quality indicators of providing transport services to the population, improving the work of urban public transport based on complex approaches are becoming a priority. In recent years, scientific research work on the organization of city public transport has been focused on solving problems such as ensuring that passengers arrive at their destination on time, ensuring the safety of vehicle movement, and increasing the economic efficiency of the transportation process. The issues of public transportation depend on many factors, each of which requires a separate approach and a complex solution [1].

In the Action Strategy for further development of the Republic of Uzbekistan in 2017-2021, it is stated that "...fundamentally improving the provision of transport services to the population, increasing the safety of passenger transportation and reducing the release of harmful substances into the environment, purchasing new buses that are convenient in all respects acquisition, construction and reconstruction of bus stations and bus stations...» were highlighted.

Currently, passenger car transport plays an important role in ensuring the development of urban and rural settlement areas, establishing communication between them and providing transport services to their residents [2].

This article will serve to some extent the implementation of the tasks established by the decree of the president of the Republic of Uzbekistan “on measures to reform the public transport system”of February 16, 2023 PQ-59 and other regulatory legal acts related to this activity.

Until now, some of the world’s leading scientists on improving passenger transportation technologies and creating the scientific basis of service quality improvement, including E. Ingrid, M. Mistretta, Jay A. Goodwill from the USA, A. Monzon from Europe, Bashir Shalaik, D. A. Hensher, G. A. Giannopoulos, Richard Anderson, H. Nishiuchi, C. Morton, A. Bristow, M.E. Antoshvili, M.A. Weinstock, I.V. Spirin, N.B. Ostrovsky, A.V. Shabanov, V.A. Gudkov, A.M. Bolshakov, S.P. Artemev . Akhmetov, V.S. Moon, G.V. Bolonenkov, J.R. Kulmukhamedov, K.M. Nazarov, A.A. Nazarov and others conducted research[3].

The research conducted by these scientists shows that all of them pay special attention to the quality of public transport service and its provision.

However, the study of some aspects of the studied problem in the context of the development of the market economy is far from its development and completeness.

The conducted studies are aimed at providing services to the population, their organization and management, the use of automated systems, the creation and maintenance of routes, the improvement of enterprises, the stimulation of innovative development, and the provision of services for passengers. did not sufficiently study many issues of organization of payments, use of modern types of transport. In general, this requires the implementation of qualified address research in the conditions of specific areas.

On the other hand, issues of improving the mechanism of sustainable innovative development of services by city passenger transport enterprises have not been sufficiently developed. The purpose of this article is to develop theoretical justification and recommendations for improving the mechanism of sustainable development of services by city passenger car transport enterprises[4].

Materials and methods

Scientific work aimed at improving the quality and efficiency of passenger transportation was carried out based on the scientific basis of building a system of transport quality indicators and setting standards for these indicators. Including:

1. Russia. Frolov Konstantin Vladimirovich: Formation of quality indicators and standards of city bus transportation.

2. Russia. Antonov Mikhail: Improvement of the methods of justifying the parameters of public transport services on regular bus routes.

3. Russia. Andrey Alexandrovich Burlutsky: Ensuring the efficiency of the road network of a large city, taking into account its interaction with passenger traffic flows (in the case of Tomsk). 2015 y.

4. Germany. Matthias Walter: Efficiency and competition in public transport. 2010y.

5. Finland. Tsegaye Firew: Analysis of public transport service reliability in the Helsinki metropolitan area: the case of bus route 550. 2016 y.

6. Uzbekistan. Samatov Gaffor Allakulovich: Improving the efficiency of the regional passenger vehicle transport complex.

7. Uzbekistan. Abdullayev Botir Inatovich: Improvement of transport service quality indicators in city bus routes. 2019 y.

The development of transport systems improves the provision of these types of services to the population. The most important task is to ensure efficient management of passenger transport by road. From the point of view of the traditional approach, efficiency is understood as the ratio of results and costs, and the result should exceed costs, otherwise we can talk about the lack of efficiency [5].

The organization of passenger transportation in vehicles is related to many factors that affect their efficiency. The main factors affecting the organization and efficiency of urban passenger transportation are presented in Figure 1.

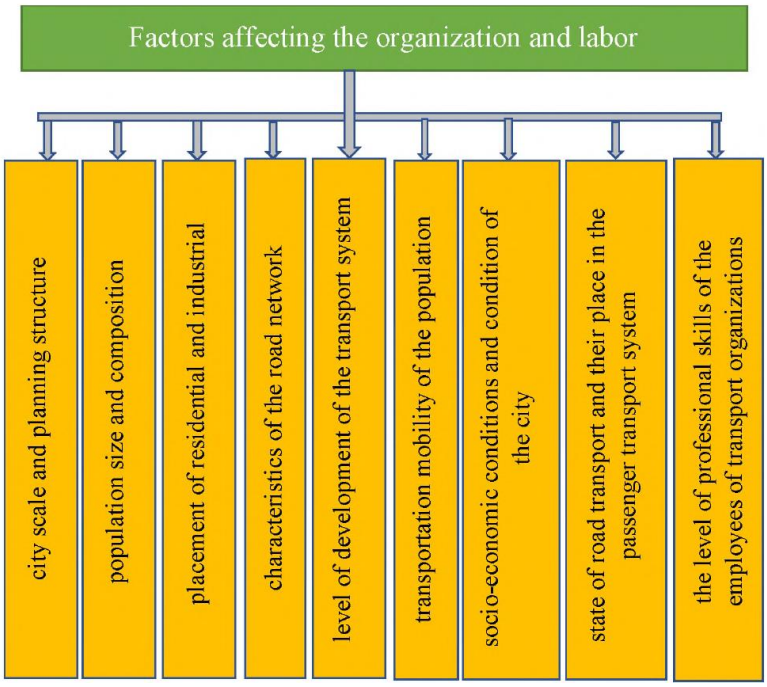

Figure-1. Factors affecting the organization and efficiency of urban passenger transport

The quality characteristics of the transport service level are related to the speed, timeliness, rhythm, safety and environmental safety of the transport system. The speed of transport connections affects the efficiency of economic connections and the mobility of the population. An increase in the speed of delivery of passengers will have significant economic and social benefits. In passenger transportation, it is expressed in the allocation of people's time that can be used for other purposes[6].

The main criteria describing the level of efficiency of passenger transport organization include the following four criteria presented in Figure 2.

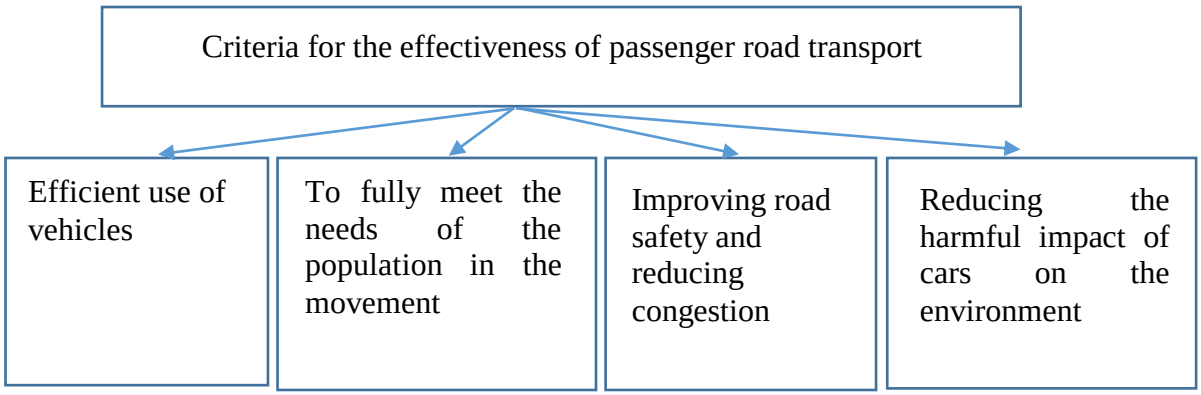

Fig.2. Criteria of passenger car transport efficiency

Currently, passenger transport is operating in the conditions of stability and income growth trend in the real sector of the economy. Urban transport plays an important role in the economic and personal life of the population. Since not every citizen has a personal transport, the problem of meeting the demand for transport in time and quality is changing from a transport problem to a social problem [7].

One of the most important factors in the development of public transport is the ease of use by the population. To do this, optimize routes and schedules, provide transport service consumers with the necessary information, create additional services for cargo delivery, organize pedestrian crossings near vehicle stops, etc. it is necessary to create maximum amenities for the population [8].

The level of efficiency of passenger transport in city transport can be assessed using the following indicators, which are combined into three groups presented in Fig.3.

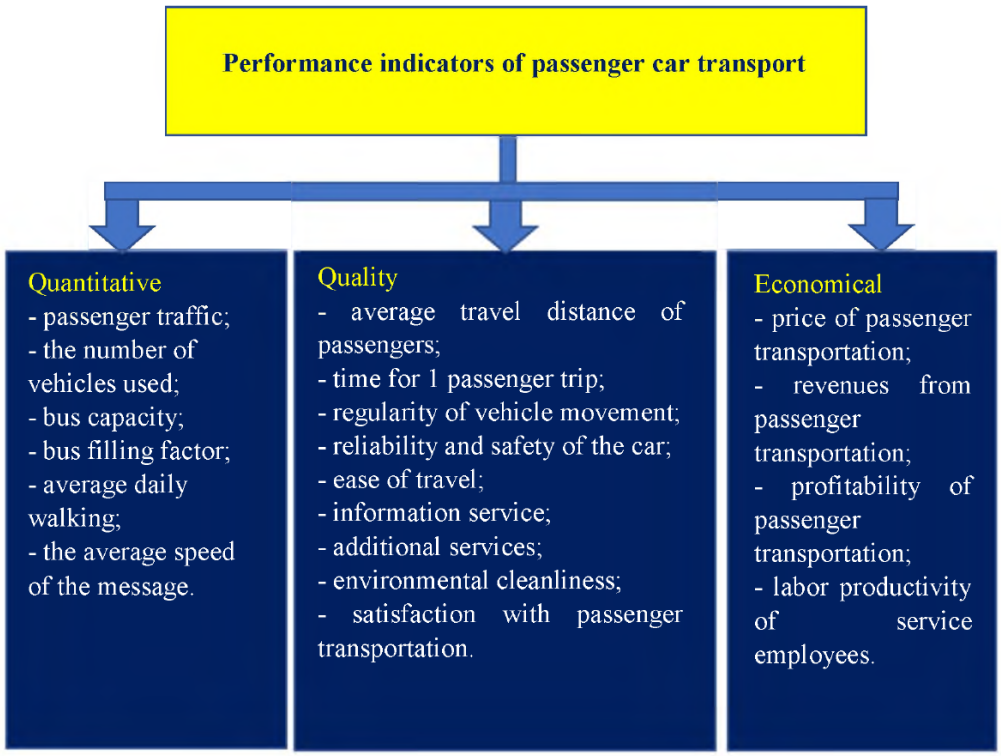

Fig.3. Indicators for evaluating the efficiency of passenger transport in city transport

While the standards that determine the quality of passenger transport service are analyzed based on the principles of a systematic approach, it can be recognized that there are some serious shortcomings in the studies carried out earlier:

- it was not taken into account that some factors affecting the quality of transportation service are of a random nature;
- the decomposition principle of the systematic approach has not been widely used in the research of transport service provision processes. For example, considering the processes of "traffic organization" as a separate system in researching the quality of transport services, the fact that it is not researched by dividing it into separate sub-systems, etc[9].

Research results

The assessment of the efficiency of passenger transport in city transport allows to control the management of passenger transport in city transport, identify existing shortcomings in time and take measures to eliminate them. In order to successfully solve the problem of effective service provision, it is necessary to unite the efforts of all transport services, central and regional management bodies, and direct them to improve the operation of the transport complex.

Increasing the efficiency of passenger transportation is achieved by solving the following set of organizational and economic tasks:

- systematic study of passenger traffic on bus routes;
- on the basis of passenger flow study materials, development of rational route schemes that ensure the opening of new routes and rerouting of existing routes, if necessary;
- selection of the type and number of traffic on the route;
- drawing up the schedule of bus traffic and the schedule of their departure; regulation of bus speed;
- coordination of car transport with other types of passenger transport;

▪ quick control of the direction of movement of vehicles and regularity of movement;

▪ reduction of transport costs;

▪ prevention of unfair competition in the field of passenger transportation;

▪ timely adoption of tariffs, balanced price policy;

▪ selection of qualified personnel;

▪ improving the quality of roads[10].

Quality assessment of road transport services on regular city routes is one of the forms of management. Since quality is a multi-criteria and multi-factor category, it is important to consider and describe in detail all (or most influential) components for its assessment. It is desirable to create and use a flexible model to introduce criteria that comprehensively describe the public transport system. Therefore, the combination of network trends with generally recognized quality indicators such as regularity, safety, comfort and cost of services allows to determine the effectiveness of all levels of management of the urban passenger communication system[11].

Combining the standard indicators of the quality of urban passenger transport with the main trends of network development allows for the most complete analysis of the development of public transport. By building a flexible quality management model, systematization of travel time, safety, occupancy and cost-benefit mechanism evaluation criteria is achieved. The priority importance of the development of information space was established to ensure the availability and reliability of land transport in general use[12]. Proof of the direct dependence and interaction of the costs of the vehicle enterprise on the filling of the time of movement and the content of movement, and the results of their interaction allow not only to assess the quality of the provision of urban passenger transport services, but also create conditions for the regulation of costs by the carrier.

Conclusion

1. These indicators help to assess the overall efficiency and effectiveness of passenger service in road transport. By monitoring these indicators, operators can identify areas that need to be improved and make data-based decisions to improve passenger experience.

2. It is necessary to work out the relationship between the main indicator and other parameters in the criteria for evaluating the quality of transport service in city bus routes.

3. All parameters are taken into account in the research of world scientists on the assessment of the quality of passenger transport services, but the issue of the organization of the movement of rolling stock in the direction has not been sufficiently studied. Taking into account the random nature of the transport service quality variable indicators, it is necessary to develop a method to ensure their normative value.

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