

# QUALITY ASSESSMENT OF THE TRANSPORTATION SERVICES

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## Анотація

*В тезах розглянуто різні групи показників якості надання транспортних послуг. З огляду на поняття «якість транспортних послуг» існують різні точки зору: операторів пасажирських перевезень з одного боку, та споживачів транспортних послуг – з іншого. Ефективність транспортного процесу може бути досягнута при врахуванні інтересів як пасажирів, так і перевізників.*

**Ключові слова:** *якість, оцінка якості, фактори впливу, показники якості, транспортні послуги, методи оцінки, пасажирські перевезення, сміттєвоз.*

## Abstract

*Different groups of indicators of the quality of the provision of transport services are considered in the paper. Considering the concept of "quality of transport services", there are different points of view: operators of passenger transport on the one hand, and consumers of transport services – on the other. The efficiency of the transport process can be achieved by taking into account the interests of both passengers and carriers.*

**Keywords:** *quality, quality assessment, influencing factors, quality indicators, transport services, assessment methods, passenger transportation, dustcart.*

## Introduction

Today, high-quality passenger service and cargo transportation has become a priority area in the process of providing transport services to the population. The increase in the level of demands made by transport customers in modern supply chains [1] and the growth of competition between transport operators have brought to the forefront the factor of transport service quality [2].

In market conditions, the quality and cost of transport services to the public determine the position and efficiency of each type of transport on the transport market in conditions of competition between different types of transport. The type of transport is selected according to the quality criterion. The quality of transportation characterizes the degree of public utility of transport products and services.

The non-compliance of the quality of transport services with modern requirements is one of the main problems of the functioning and development of public transport. Before the city transport system, passengers put forward demands for faster, safer and more comfortable transportation [3]. The future of urban passenger transport enterprises depends on their ability to provide the population with high-quality, consumer-oriented services.

The purpose of this work is to determine the main components of transport services, analyze the system of indicators of the quality of transport services and factors that affect the quality of transport services.

## Research results

The issue of the quality and efficiency of transportation is related to the state and functioning of the passenger service system as a whole. The largest volume of passenger transport by public transport in Ukraine is carried out in urban and suburban transport.

Commuter transportation is extremely important for suburban areas, especially for large cities, as it provides the population with daily work trips. No less important are freight transportation, thanks to which the population can provide themselves with everything they need, as well as for the transportation of solid household waste with the help of garbage trucks [4-7].

To date, all transportation in Ukraine is characterized by a shortage and a high level of wear and tear (moral and physical) of vehicles. It is important to balance the demand for transport and the supply of

transport. At the same time, it is necessary to solve two problems: to satisfy the needs of the population in transportation both in terms of the quantity and quality of the provided transport services, to achieve maximum profit by increasing revenues and reducing costs [8].

For example, suburban bus routes are characterized by a large unevenness of passenger transportation and passenger flows in different directions and days of the week. Specialists found out that on Saturday and Sunday mornings, a mass flow of passengers goes from the city to the recreation area and buses are loaded in one direction. In the evening, most passengers return to the city and the bus is loaded in the return direction. The majority of the population of suburban areas goes to work in the city in the morning on weekdays. A significant number of city dwellers head to the suburbs after the work week and return to the city for work on Sunday and Monday. The specified features are taken into account in the system of rational organization of bus traffic.

Transportation of passengers by buses must be carried out with a high degree of safety and quality, with the minimum possible expenditure of the passenger's time for the trip.

The concept of "quality" in the modern economy is becoming a key category. This concept is related not only to the quality of the finished product or service, but also to the quality of the production process itself, providing the service. Quality management becomes a necessary and mandatory requirement, compliance with which currently gives the enterprise a competitive advantage in the eyes of the consumer [9]. Transport service also needs to be considered through the lens of service quality management issues.

In modern conditions, the transport system is also the basis of the economic integration of regions, as well as their inclusion in the international and interregional division of labor and the formation of new, effective foreign economic relations.

The term "transport system" refers to the complex of all means of transport organized for transportation. Therefore, depending on the scale of the performed tasks, the following types of transport system can be distinguished:

- the country's unified transport system;
- transport system of the region, city;
- transport system of the branch of economy or industrial enterprise.

Undoubtedly, first of all, the functional purpose of regional transport is to ensure the movement of goods and passengers in space and time. That is why this type of infrastructure of the region is the most important and it is characterized by a strong territorial specificity (due to the peculiarities of the spatial nature of the location of its objects, the close relationship with the territory, the location of production and the settlement system of the region). Also, the density of the network and the capacity of transport flows characterize the level of concentration of production, the degree of development of the region, as well as its level of economic and social development.

### **Implementation of quality systems**

When implementing quality systems, the main problem for carriers, regulatory bodies and passengers is the lack of a developed unified methodology for assessing the quality of passenger transportation services. However, with growing competition in the field of service provision, the struggle to increase the volume of transportation puts forward new requirements for the provision of services in the field of service.

The problem of ensuring the quality of passenger transportation is affected by a number of negative factors: low funding of state programs for the development of transport, road management, leveling of requirements and approaches to road maintenance, imperfection and incompleteness of structural reforms in the field of passenger transportation; unprofitability of municipal passenger transport enterprises due to insufficient compensation of funds from transportation of preferential categories of passengers and outdated rolling stock; congestion of city roads, unsatisfactory system of urban planning and maintenance of transport infrastructure; insufficient volume of funding for the development of transport, an outdated normative and legal framework, a low pace of harmonization of domestic transport legislation with international requirements, weak competition between carriers.

The following groups of factors influence the development of transport in the regions:

Level 1. General economic factors. This group of factors determines the following characteristics: the nature of the territorial division of labor and the structure of production; the level of economic and social development of the region in relation to that achieved in the country; a feature of the economic mechanism that regulates relations between production and transport.

Level 2. Sectoral and economic factors reflecting the following indicators: changes in the volume and structure of transportation; improvement of operational activities; management and coordination of work of various types of transport and organization of the transportation process; optimization of cargo and passenger flows; factors related to scientific and technical progress in transport, the introduction of new, improved means of rolling stock, machines and equipment, in particular garbage trucks [10, 11]; mechanization and automation of production processes [12, 13]; improvement of the transport network.

Level 3. Administrative-territorial factors characterizing: peculiarities of transport and economic connections in the region; level of production specialization, settlement system; placement of socio-economic facilities on this territory; natural and climatic conditions and the nature of their interaction with transport; the level of pollution of the territory, etc.

### **Execution of movement functions**

For the efficient performance of movement functions, the following elements exist as part of transport systems:

- a) transport networks (communications);
- b) rolling stock for transportation;
- c) transport hubs (stations, loading and unloading systems and warehouses) for passenger service, cargo transfer and storage;
- d) means of customer service;
- e) transport management systems;
- e) enterprises and means for technical operation of means of transport and other elements of infrastructure.

Some of the elements of the transport system of the region perform the main functions – the movement of passengers and goods: transport networks, transport hubs and rolling stock. Other elements ensure the functioning of the first group: subsystems of transport management, customer service, technical operation of means of transport.

In addition, the regional transport system of the country usually includes the following types of transport: road (cars, public transport, cargo transport, communal transport [14-16]); water (river passenger, cargo and technical, marine); electric rail (city and highway); aviation, industrial (production) and pipeline.

Transport, which in accordance with current legislation must transport goods and passengers, regardless of who they are presented for transportation, is called public transport, it forms the basis of the unified transport system of the region, because it represents an independent "transport industry" that provides the main transportation needs of one or another region.

### **Transport network**

The next important element for the transport system is the transport network – a set of communication routes connecting the populated areas of the region. This element characterizes the level of potential transport service of a certain territory and the capacity of transport, it consists of railways and roads, sea and inland waterways, airways, main pipelines. The term "highway transport" is used to denote the communication routes connecting the most important cities and industrial centers of the region.

As for land transport, it has a path laid on the surface of the earth. A strip of terrain (right-of-way strip) is set aside for the route and structure of railways and highways, canals, pipelines, overpasses and conveyors.

Waterways are ways of connecting sea and inland water transport. Sea lanes are routes followed by ships, mostly natural, for which wharves, ports, and sometimes artificial fairways or canals are built. Inland waterways are inland waterways used for navigation and rafting. They can be natural (inland seas, lakes and rivers) and artificial (canals, artificial reservoirs, sluiced rivers).

Air routes are intended for aircraft flights, they connect the air spaces of airfields and are limited by height and width; airports are equipped with the necessary infrastructure for the takeoff and landing of airplanes and helicopters, airfield maintenance of flights.

An essential element of the transport network are initial, final and intermediate points where cargo and passenger flows are formed, disintegrated and reformed, they are called transport hubs. In transport hubs, cargoes are prepared for shipment, batches of cargoes are formed, cargo is transferred to the carrier and from the carrier to the recipient, transfer from one type of transport to another, short-term storage of cargoes, breaking up of cargo batches and other technological operations.

With the development of transport services, the functions of transport hubs are also expanding: loading and unloading points, which performed the role of receiving, forming batches of goods, as well as sending them to their destinations, gradually transformed into special terminals, where small consignments are transformed into large, full consignments. Today, terminals have become powerful objects of the transport system with complex mechanization of loading and unloading and warehousing operations at the expense of freight forwarding, customs, exchange, information and other services. The transport node, which performs the entire list of such functions, is now called "HUB" (from the English – hub, node). European countries have gained considerable experience in the creation and maintenance of hubs, because the first such hubs (passenger) appeared as early as the middle of the 19th century, and an example is the King's Cross Central station (London), the construction of which dates back to 1853. The station was connected to the underground transition, which provided passengers with a convenient transfer from one type of transport to another, which over time led to the positioning of this facility as a single large complex and the largest transport hub in Great Britain.

The intensive development of interregional economic ties requires new approaches to reduce the time for production and sale of products, therefore an important solution to this problem is an increase in the speed of cargo delivery. Differences in means of transportation and communication routes, infrastructure, control and management systems, and regulatory requirements in different countries lead to an increase in the cost of transporting goods in international and interregional traffic, most often to a loss of the quality of goods, and therefore to a loss of established connections with sales market. That is why the logistics approach to transportation systems indicates the need to create so-called transport logistics corridors on the most significant directions of cargo movement [17].

## Conclusions

It is generally known that at the current stage the regional transport system is in a state of crisis and does not meet high European parameters and characteristics. Of course, this leads to a decrease in the efficiency of transportation both at the national and local levels, so further scientific and practical research should be focused on the generation of ideas, proposals and practical implementation of recommendations to improve this situation. Also, further research should be based on the fact that the regional transport system plays an extremely large role for a successful country, because from a global point of view, it should primarily ensure the economic security of the territory, contribute to strengthening and increasing its potential and the standard of living of citizens.

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