Khakkulova Rano Abduganiyevna,
Assistant of the department of
"Economy of Industries"
Tashkent University of Applied Sciences (TAFU),
Tashkent, Republic of Uzbekistan

REGIONAL FEATURES OF DEVELOPMENT OF TRANSPORT AND COMMUNICATION INFRASTRUCTURE

Abstract: The article examines the features of the linear and nodal infrastructure of the regional transport system (roads, transport lines, the network of these lines; transport hubs and centers, transport vehicles (rolling stock), traffic flows. The transport system is the main element of the territorial structure.

Keywords: transport, communications, hub, region, features, network.

Хаккулова Рано Абдуганиевна,
Ассистент кафедры «Экономика отраслей»
Ташкентский Университет Прикладных Наук (ТАФУ),
Ташкент, Республика Узбекистан

РЕГИОНАЛЬНЫЕ ОСОБЕННОСТИ РАЗВИТИЯ ТРАНСПОРТНО-КОММУНИКАЦИОННОЙ ИНФРАСТРУКТУРЫ

Аннотация: В статье рассматривается особенности линейной и узловой инфраструктуры региональной транспортной системы (дороги, транспортные линии, сеть этих линий; транспортные узлы и центры, транспортные средства (подвижной состав), транспортные потоки. Транспортная система является основным элементом территориальной структуры.

Ключевые слова: транспорт, коммуникации, узел, регион, особенности, сеть.

The regional transport system includes linear and nodal infrastructure (roads, transport lines, a network of these lines; transport nodes and centers, vehicles (rolling stock), transport flows. These elements are interrelated and their research

is an important task. Transport nodes and the road network are the main elements of the regional structure of the transport system [1].

As a result of modern technical progress, the following processes are taking place in the transport system: 1) the expansion of the transport network around the world and covering even the most remote areas; 2) reduction of communication speed and time in freight and passenger transportation, resulting in densification of the global economic and cultural space; 3) very uneven distribution and location of the transport network, regardless of technical progress.

In addition, the methods of determining the length and density of communication paths are very complex and labor-intensive processes. The fact that such studies have not been carried out in our country complicates the fulfillment of the assigned tasks. There are objective problems in assessing the level of development of the existing infrastructure from a regional point of view, and in its assessment, it is necessary to establish the transport provision of the regions by forming complex transport economic balances, taking into account the coordinated development of all sectors and regions. Therefore, when studying the regional characteristics of transport infrastructure, it is important to consider the widely used directions and approaches, to adapt them to the conditions of our country.

At the same time, different scientists interpret the functional task of the regional transport system in different ways. Among them, the interpretation given by G.A. Goltz is of great importance, according to which "the role of transport is not to change the location of population and production territorially, but to unite them territorially".[2] It should be noted that the regional characteristics of transport are of decisive importance compared to other sectors. One of the most important features is that its objects have a spatial-grid description, and are interconnected with the location of the territory, production and population. The density of the network and the power of transport flows represent the concentration of production, the level of exploitation of the territory, its potential, the level of socio-economic development of the region.

Based on the above considerations, taking into account regional and other factors, the main tasks of the development of the transport system are as follows:

- gradual and proportional development of the national transport system;

- effective use of the transit potential of the country;

- widening of large transport nodes and roads, complex formation of large transport nodes through which the main cargo flows pass;

- to improve the condition of all transport roads in accordance with international standards;

- formation of a system of integrated transport and logistics centers in the territory and regions of the country.

It is desirable to implement the development of transport infrastructure based on the following principles:

- compliance with social and economic development programs and prospective forecasts of countries and regions;

- a differential approach to the development and modernization of transport infrastructure;

- maximum use of all facilities and communications in the implementation of internal and external transit transportation;

-coordinated development of various types of transport.

In the development of transport infrastructure, it is necessary to study its regional characteristics. The most important elements in the transport system are the transport network and transport flows, which are the sum of all the communication routes connecting the settlements in the regions with each other. It is represented by the following concepts and indicators:

Transport flow (cargo and passenger flow) is the directed movement of a large volume of cargo and passengers from one place to another along a transport route or route with the help of vehicles. The main characteristics of the traffic flow: direction, volume (amount), intensity (number of cargoes and passengers per unit of time), stable or unstable, seasonality, etc. In the study of transport flows, the balance method, linear and non-linear programs, and transport problems are used.

Transport flows are more intensive in large cities than in small cities, and in turn, the intensity is higher for short distances and lower for long distances.[3]

Transport node - a place where one or more types of transport are embodied, intersection of transport routes (not less than three), loading and unloading of goods, transfer of passengers to another place, place of sorting of vehicles in the volume of large cargo and passenger traffic, types of transport node - railway, highway, airplanes, etc. According to the combination of transport types, it is divided into transport nodes and complex nodes (it includes most types of transport, water-land, land, air-land). [4]

According to I.M. Maergoyz, the morphology (configuration) of the transport network is important for the economy of the country (district). He gives an example and states that the traditional radial network of roads and railways has become an obstacle in the development of the peripheral regions. [5]

The main functions of the regional transport network are:

1) implementation of cooperation between elements of economic and population territorial systems (nodes, centers, zones, districts, regions);

2) providing transport services to the region and its residents. The main territorial characteristics of the transport network: configuration (geometric shapes on the map), typological composition (mutualization of network elements), density (level of density in the area), length, permeability.

Various factors affect the location of transport routes and transport network:

- natural conditions (relief, climate, hydrographic objects, soil cover);
- level of socio-economic development of the region;
- location and culture of the population living in the territory and using it;
-political-geographic characteristics;
- main traffic flows and their directions;
- configuration of the network of transport types;
- characteristics of the space served by the transport network (anisotropy and isotropy, shape and size of the area, variety of spatial levels, type of neighborhood).

There are several approaches to the study of transportation networks and transportation relationships. They study the cooperation of different types of transport and the level of transport provision in a particular area.

CONCLUSION

In studying the problems of providing the regions with the transport network, the following areas were determined:

- statistical direction (the density of the transport network by administrative-territorial units is based on calculation based on statistical data);

-geometric direction (providing of areas with a transport network is represented by elementary geometric means);

- the direction of mathematical modeling (based on the study and forecasting of the impact of transport-territorial processes on the socio-economic development of regions).

In the second half of the 21th century, the beginning of complex research on transport, the development of new methods became the main issue in researching the level of provision of the transport network of the regions.

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