UDK 001

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THE IMPORTANCE OF PROGRAMS FOR DRIVING ON LINEAR ROADS IN THE ORGANIZATION OF LOGISTICS TRANSPORTATION OF PRODUCTS

Annotation: The determination of rational routes for the delivery of transport flows in the regional transport and logistics system using the linear programming transport problem in this work allows us to develop the most rational ways and ways of transporting goods, thereby avoiding additional costs of the enterprise associated with the implementation of the processes of supply of raw materials, materials, fuels, equipment.

Keywords: regional economy, regional transport and logistics systems, linear programming.

The regional transport and logistics system serves as the material base of production links between individual territories. A significant part of the logistics operations on the way of the material flow from the primary source of raw materials to the final consumer is carried out using various vehicles. In this regard, there is a need to pay due attention to the definition of rational and optimal routes for the delivery of products. To determine rational delivery routes, we will use the linear programming transport problem. The globalization of the economy is accompanied by previously unprecedented rates of trade growth. In these conditions, the importance of the transport and logistics system grows as much as possible. The regional transport and logistics system (RTLS) serves as the material base of production links between individual territories, acts as a factor organizing the economic space and ensuring further geographical

division of labor. In the structure of public production, RTLS refers to the production of material services. A significant part of the logistics operations on the way of the material flow from the primary source of raw materials to the final consumer is carried out using various vehicles. The costs of performing various logistics operations sometimes make up a significant part of the company's expenses.

In this regard, there is a need to pay due attention to the definition of rational and optimal routes for the delivery of products. To determine rational delivery routes, we will use the linear programming transport problem. This is a special kind of linear programming problem about finding the optimal distribution of homogeneous objects with minimizing the cost of moving. For ease of understanding, it is considered as a problem of the optimal plan for the transportation of goods from points of departure to points of consumption, with minimal transportation costs. Under the name "transport problem", a wide range of tasks are combined with a single mathematical model.

These problems relate to linear programming problems and can be solved by the simplex method. However, the matrix of the system of constraints of the transport problem is so peculiar that special methods have been developed to solve it. These methods, like the simplex method, allow us to find an initial reference solution, and then, improving it, to obtain an optimal solution. We will set a transport task for the holding. Certain resources are required for the manufacture of products. The holding has a certain part of the resources, the other part is purchased from suppliers. And before the resources appear in the enterprise, they need to be delivered from the supplier. Let's consider a model of a transport task to minimize the costs of the route and delivery of materials. To determine the distance, we will use the on-line service of the automobile cargo transportation portal [1]. The definition of rational routes for the delivery of transport flows in the regional transport and logistics system using the linear programming transport problem in this paper allows us to develop the most

rational ways and ways of transporting goods, thereby avoiding additional costs of the enterprise associated with the implementation of the processes of supply of raw materials, materials, fuels, equipment, etc. It is interesting to note that the algorithm and methods of solving the transport problem can be used to solve some economic problems that have nothing to do with cargo transportation. For example:

- Optimal attachment of machining operations to the machines. The task allows you to determine how much time and on what operation each of the machines should be used to process the maximum number of parts.

- Optimal assignments or the problem of choice. The task allows you to determine which mechanism and what work should be assigned to achieve maximum productivity.

- The task of reducing production, taking into account the total costs of manufacturing and transportation of products.

Increasing the productivity of road transport by minimizing empty mileage, the reduction of which will reduce the number of vehicles for transportation by increasing their productivity. This underlines the relevance of using the linear programming transport problem. Interestingly, the Russian scientist Leonid Vitalievich Kantorovich was at the origin of the creation of the theory of linear programming and the solution, including the transport problem. In 1939, he published his work "Mathematical methods of organization and planning of production", in which a new class of extreme problems with constraints was formulated and effective methods of solving were developed.

The model of the transport and logistics system is most effective in the context of the whole region. The main parameters of the transport and logistics system from the point of view of the region are: the state of development of transport, warehouse, road, customs, information and financial infrastructures. The unevenness in the territorial distribution of transport networks and transport infrastructure facilities, the interdependence and interaction of individual modes

of transport, the congestion of major highways and urban agglomerations affects the economic development of the region as a whole. The transport infrastructure includes capacities that allow transportation between the objects of the region, allowing for the movement of material flows of the region. The warehouse infrastructure provides storage and transshipment of goods, ensures the redistribution of material flows between directions. The road infrastructure characterizes the capacity of the region in terms of road transport, as well as the maximum possible speed of movement of material flows within it. The customs infrastructure allows for the import and export of the relevant material flows of the region. The division by type of material flows, the reflection of material flows in monetary form, profits, losses, tax and other deductions, the understanding of all this is engaged in the financial infrastructure.

The criterion parameter for setting and implementing a set of tasks is to minimize the total transport and logistics costs:

- production of material and technical resources (components);

- supply of transport business entities;

- provision of complex transport services in a unimodal (multimodal) version of the transport and logistics system;

- sale of final products (goods).

The main parameters of the model are:

territorial characteristics of demand for transport and logistics services;

- nomenclature of transport and logistics services;

- regularity of demand (one-time or stable demand);

- intensity of internal and transit cargo flows;

- the form of ownership of the business entity (customer);

- cargo characteristics (requirements for rolling stock);

- financial stability (solvency) of the customer, etc.

The formulated model allows for the elaboration of investment program options when creating a regional transport and logistics system (taking into

account the limited land and investment resources). It is also very important that one of the main tasks of the modeled transport and logistics system is to ensure the development of regional economic ties. Working with RTLS, which uses a simulation software package, allows you to create and adjust data arrays reflecting possible options for organizing vehicle routes, to obtain information that is most adequate to real-time conditions. The next stage in the transformation of such a model may be the transformation into a more specific system, the subject area of which would be focused on the development of the economy of a particular region.

References:

1. Farxodjonova N. F. Modernization and integration: social-philosophical analysis //Роль науки в формировании современной виртуальной реальности. – 2019. – С. 10-12.

2. Афанасьев М. Ю., Суворов Б. П. Исследование операций в экономике: модели, задачи, решения/ М. Ю. Афанасьев, Б. П. Суворов// Учебное пособие. — Москва: ИНФРА-М, 2003. — С. 444.

3. Muminjon N., Dilshodjonugli N. S. Improvement of transformer protection elements //ACADEMICIA: An International Multidisciplinary Research Journal. – 2020. – Т. 10. – №. 6. – С. 394-398.

4. Ugli N. S. D. Types of transformer overload protection //ASIAN JOURNAL OF MULTIDIMENSIONAL RESEARCH. – 2021. – Т. 10. – №. 4. – С. 552-556.

5. Farxodjonqizi F. N., Dilshodjonugli N. S. Innovative processes and trends in the educational process in Uzbekistan //ACADEMICIA: An International Multidisciplinary Research Journal. – 2020. – Т. 10. – №. 4. – С. 621-626.

6. Numonjonov S. D. Innovative methods of professional training //ISJ Theoretical & Applied Science. – 2020. – Т. 1. – №. 81. – С. 747-750.

7. Атаджанова Б. Т. Педагогические Условия И Принципы Формирования Профессионально-Коммуникативной Компетентности Будущего Инженера //Central asian journal of literature, philosophy and culture. – 2021. – Т. 2. – №. 11. – С. 93-97.