THE TRANSPORT TASK USING FOR IDENTIFYING THE OPTIMUM CARGO TRANSPORTATION PLAN

Elena V. Buntova

Candidate of pedagogical science, Assistant Professor in

Samara State University of Economics

Samara, Russia

Margarita Nesterova

Student of Samara State University of Economics

Samara, Russia

Alina Serkova

Student of Samara State University of Economics

Samara, Russia

Abstract. This scientific work is devoted to the transport problem solution with mathematical model, which is a special class of linear programming problems describing the movement of a homogeneous product from the departure point to the destination. First of all, the analysis of scientific researches was carried out on the solution of transportation costs minimizing problem; the relevance of the transport task application for determining the optimal transportation plan has been proved. To determine the support solution such methods as the northwestern angle method, Vogel approximations and minimum tariffs were considered in the course of the work. Verification of the transport problem solution for optimality was carried out using the method of potentials and, by reallocating the cargo in a cycle, two types of cargo transportation plans were drawn up, in which the supplies of all suppliers were completely exported, and the customer's requests were fully satisfied and all cargoes total costs for the transportation are minimal. Optimal routes for cargo transportation are developed by applying the minimum tariff method to solve the transport problem; this method has allowed to obtain a more optimal solution in comparison with the simpler method

of the north-western corner and in comparison with the closest to the cargo transportation optimal plan, found by the Vogel method.

Keywords: logistics; optimal solution search; costs minimization; profit maximization; trucking; minimum tariff method; transportation routes compilation.

JEL codes: C 61; L 91.

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Contact

Elena V. Buntova

Samara State University of Economics

141, Sovetskaya Armiya str., Samara, Russia, 443063

lena-buntova1@yandex.ru

Margarita Nesterova

Samara State University of Economics

141, Sovetskaya Armiya str., Samara, Russia, 443063

nesterovam171198@mail.ru

Alina Serkova

Samara State University of Economics

141, Sovetskaya Armiya str., Samara, Russia, 443063

karakito97@mail.ru