

Prioritizing and determining the optimum composition of production of Ganjeh Roodbar Vegetable Oil Plant

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Deciding on optimal product mixing is one of the most important decisions that can directly affect the profitability of manufacturing units. Determining the optimal combination of products in companies is one of the major activities associated with production planning. These decisions lead to an increase in the net outflow of facilities and facilities, taking into account resource constraints. The goal is to determine the optimal combination of products, to find a production plan in such a way that the profit level is maximized and resource constraints such as production constraints, market constraints, etc. are considered. Linear planning is used to solve product mix problems. The issue involves deciding the number and type of manufactured goods, and the main structure of the problem is to maximize the benefits of a combination of production products with allowance for the constraints on resources. In this research, after collecting the factors affecting the production of products using the Delphi method and then prioritizing and determining the weight of the factors using the network analysis technique, taking into account the product weight (the effect of each product in the interest of the company) in the coefficient of the objective function, in place of profitability and taking into account the various industry constraints, the mathematical model is presented to determine the optimal product mix. The mathematical model presented in the LINGO software is coded and outputted. The results show that considering the fact that the obtained program captures the capacities and constraints of the industry simultaneously and can have a significant effect on productivity increase. In addition, given that the minimum requirements for demand are included in the model, the resulting production program can be implemented in practice and can be used by production and sales planning units.

Keywords : production planning, optimal product mix, linear programming, LINGO

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