عنوان مقاله:

Fuzzy Multi-objective Approach to Formulate Operation Plan in Decorative Rock Mines: Chaypareh Marble Mine Case Study

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خلاصه مقاله:

Exploitation of decorative rock mines are expeditiously rising due to various advantages such as being costeffective, nimble and simple processing, easy transportation, and satisfactory consuming market. As a thriving industry, mining operations are necessary to be planned systematicaly in terms of engineering and optimization approaches so that maximum profit is acquired through minimum utilization of resources. By applying the multi-objective linear programming model to the operations in Chaypareh-Khoy marble mine, this study provides optimized solutions for reducing energy and manpower cost while increasing profit. The model also features a fuzzy constraint to formulate the nondeterministic nature of available subsidized fuel. The developed approach results in a comprehensive operation and exploitation plan, which determines the optimum amount of extraction regarding different products, working shifts, fuel consumption amount, and the miximum earned profit. Finally, sensitivity analysis is done to investigate the effect of different objective functions on the model.

کلمات کلیدی:

Operation planning, Linear programming, Multi-objective decision making, Fuzzy approach, Mining

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