عنوان مقاله:

Fuzzy Multi-Objective Linear Programming for Project Management Decision under Uncertain Environment with AHP Based Weighted Average Method

محل انتشار:

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خلاصه مقاله:

Smooth implementation and controlling conflicting goals of a project through using all related resources by an organization is inherently a complex task to management. Meanwhile, deterministic models are never efficient in practical project management (PM) problems because the related parameters are frequently fuzzy in nature. The project execution time is a major concern of the involved stakeholders (client, contractors and consultants). For optimization of total project cost through time control, here crashing cost is considered as a critical factor. The proposed approach aims to formulate a multi objective linear programming model to simultaneously minimize total project cost, completion time and crashing cost with reference to direct cost, indirect cost in the framework of the satisfaction level of decision maker with fuzzy goals and fuzzy cost coefficients. To make such problems realistic, triangular fuzzy numbers and the concept of minimum accepted level method are employed to formulate the problem. The proposed model leads decision makers to choose the desired compromise solution under different risk levels and the project optimization problems have been solved under multiple uncertainty conditions. The Analytical Hierarchy Process is used to rank multiple objectives to make the problem realistic for the respective case. Here minimum operator and AHP based weighted average operator method is used to solve the model and the solutions are obtained by using LINGO software.

کلمات کلیدی:

Project management, Multi-objective linear programming, Minimum operator, Analytical Hierarchy Process