

عنوان مقاله:

Solving a multi-objective stochastic cell formation problem by a two phase fuzzy linear programming approach

محل انتشار:

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خلاصه مقاله:

We propose a multi-objective cell formation problem with demand of products expressed in a number of probabilistic scenarios. To deal with the uncertain demand of products, a stochastic programming approach is presented. The proposed model considers minimizing the sum of the miscellaneous costs (machine constant cost, expected machine variable cost, cell fixed charge cost, and expected inter-cell movement cost) and expected total cell loading variation. In the first phase, the problem is solved using a max-min approach. In this paper, we develop a two phase fuzzy linear programming approach for solving multiobjective cell formation problem. The max-min solution not being efficient, in general, we propose a new model in the second phase to maximize a composite satisfaction degree at least as good as the degrees obtained by phase one. To show the effectiveness of the proposed approach, numerical examples are solved and the results are compared with the two existing methods (Max-Min and LZL) in the literature. The computational results show that the proposed fuzzy method achieves lower objective functions as well as higher .satisfaction degrees

کلمات کلیدی:

multi-objective cell formation; two phase fuzzy linear programming; cellular manufacturing system; stochastic programming

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