

عنوان مقاله:

An integrated multi-objective approach to supplier selection and lot-size determination: A case study

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نویسندگان:

Mir-Bahador Aryanezhad - *Industrial Engineering Department, Iran University of Science and Technology, Iran*

Armin Jabbarzadeh - *Industrial Engineering Department, Iran University of Science and Technology, Iran*

خلاصه مقاله:

This paper presents a novel approach to supplier selection and multi-periodic lot-size determination, where there is single product and multiple suppliers. The proposed approach integrates Analytical Network Process (ANP) and mix integer programming in order to evaluate the suppliers and determine the inventory lot-sizes in two phases. By considering different qualitative and quantitative criteria, the first phase evaluates the suppliers through ANP method. In the second phase, a multi-objective mix integer linear programming is developed to obtain the desired lot-sizes in each period. The model is subject to production capacity and budget constraints and includes three objectives: (1) minimizing total purchasing cost (2) minimizing total defect rate and (3) maximizing total score of purchasing achieved from the first phase. In order to solve this multi-objective model, compromise programming is applied. Finally, the application of the proposed approach is demonstrated with a real world case study.

کلمات کلیدی:

Supplier selection, Lot-sizing, Multi-criteria decision making (MCDM), Compromise programming

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