Presentation of Fuzzy Multiple Objective Programming Model for Evaluation of Supplier Performance With Consideration of Cost, Visibility and Supply chain risk

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ABSTRACT

Proper connection between customers and suppliers needs proper information flow. Therefore, opportune and correct sharing cooperation of information in the whole supply chain is important. This section is related to supply chain visibility (SCV). On the other hand, the possibility of unexpected and unpleasant incidents that involve supply chain risk (SCR) should be taken into consideration. Close relationship between risk and visibility of supply chain is effective on supply chain performance. Incoherence in minimization and maximization of SCV and SCR and other parameters such as cost, demand or capacity, requires a multiple objective programming model to evaluate suppliers’ performance for achieving the above-mentioned goals.

Therefore, the objective of this study was to present a multiple objective programming model at uncertain conditions in order to evaluate suppliers’ performance. A case study for the reliability evaluation of the offered model was conducted. The results indicated high reliability of the offered model. The numeral results also showed that decision makers in choosing supplier, firstly decrease SCR and then try to improve SCV.

Keywords
fuzzy multiple objective programming; supply chain visibility; supply chain risk; Suppliers performance