عنوان مقاله:

An Integrated Product Mix-Outsourcing Problem to Increase Market Share

محل انتشار:

شانزدهمین کنفرانس بین المللی مهندسی صنایع (سال: 1398)

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خلاصه مقاله:

The integrated product mix-outsourcing optimization is a major problem in manufacturing enterprises to fully utilize the limited production resources and commission outside contractors. For a successful integrated product mix-outsourcing decision, both internal and external constraints such as availability and cost of enterprise or outsourcing resources must be considered simultaneously. Studies on aggregative product mix-outsourcing problem are very limited. Also, in most of the studies, outsourcing is defined as the gap between the market demand and in-house production. However, this definition for outsourcing is unrealistic because in real cases companies can usually meet only a portion of the market demand. To overcome this drawback, in current study a new bi-objective integer linear programming model is presented for aggregative product mix-outsourcing problem. The proposed model considers outsourced quantity as an independent variable in a way that larger portion of the market demand is considered as an objective function. Several numerical instances are defined and solved via GAMS solver. The proposed model is also examined against theory of constraint (TOC) and one well-known LP approach in the literature. The results indicated that the proposed bi-objective ILP outperforms the others.

کلمات کلیدی:

Outsourcing; Mix-production; Offshoring; Theory of Constraint; TOC; Product mix-outsourcing

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