Linear programming model to minimize the production costs of an adhesive tape company

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Abstract

Production in large quantities of different varieties of products creates issues in finding an optimal planning solution. Adhesive tapes companies face that challenge. A multi-phased methodology is proposed to minimize production costs. In this it is considered different production variables. First phase divided a problem into subproblems to minimize computational complexity through an incidence matrix. Second phase formulated a linear programming model to determine production optimal batch sizes. Consequently, model is applied in a real company. Results showed a decrease in production costs in a range of 14%-43% for the different manufactured groups of components. In this way it is expected that more companies can apply similar models to improve their production indicators.

Palabras clave

Aggregate planning, linear programming model, production, costs minimization, adhesive tapes.