

## Supplier selection based on multiple criteria

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### ABSTRACT

Supplier selection is a multi-criteria decision making problem which includes both qualitative and quantitative factors. In order to select the best suppliers it is necessary to make a trade-off between these tangible and intangible factors some of which may conflict. The majority of previous supplier selection techniques do not consider strategic perspective. Besides, uncertainty is one of the most important obstacles in supplier selection. For the first time, in this paper, the idea of the algorithm "Knapsack" is used to select suppliers. Moreover, an attempt has to be made to take the advantage of a simple numerical method for solving model. This is an innovation to resolve any ambiguity in choosing suppliers. This model has been

tried in the suppliers selected in a competitive environment and according to all desired standards of quality and quantity. To show the efficiency of the model, an industry sample has been used.

**Keyword:** Supply chain management, Supplier select, Knapsack, linear programming model, Purchasing.

### Introduction

Nowadays companies are increasingly outsourcing portions of their business processes such as IT infrastructures, purchase of raw material, after sales services, logistics, and transportation. According to a recent survey carried out by Accenture, 80% of the companies' surveyed use some form of outsourcing and a majority of these companies are spending close to 45% of their total budget on outsourcing (Accenture





























