

Selecting candidate suppliers using a multiple criteria decision making model

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Abstract

High-tech firms are usually under a dynamically changing and fierce competitive environment these days. In order to survive in such an intensive competitive international market, a firm not only needs to manufacture outstanding products that meet the demands of its customers, it also needs to have a comprehensive supply chain management. To achieve the benefits of buyer-supplier integration, in terms of increased internal efficiency and profitability of the players in a supply chain, the identification of viable suppliers is a preliminary step that needs to be properly managed. Thus, to be cost competitive and to acquire decent profit in the market, the selection of the most appropriate suppliers is essential. In this paper, a supplier selection model is constructed by applying methodologies including decision making trial and evaluation laboratory (DEMATEL) and analytic network process (ANP) to determine the interrelationship among the evaluation criteria and to select the most appropriate suppliers for cooperation.

Keyword : Supplier selection; Multiple criteria decision making (MCDM); Fuzzy analytic network process (FANP), Decision making trial and evaluation laboratory (DEMATEL).