

عنوان مقاله:

Developing Integrated Model of Data Envelopment Analysis (DEA) and Data Mining to Evaluate Performance of Logistics Service Suppliers

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خلاصه مقاله:

Today, finding material, good, and semi-finished parts suppliers in a competitive atmosphere is significantly easier, therefore there are many options to select from for commercial partners. On the other hand, purchase responsibility as a management decision has challenged company managers due to its complexity and variety of evaluation measures. The present study provides an integrated model using data envelopment analysis (DEA) techniques to develop decision support systems in an auto part supplier, and methods of data mining like neural networks in order to evaluate suppliers. Efficiency scores of each supplier are obtained by solving model of data envelopment analysis, and then this model, using educational data, trains artificial neural networks to predict and rank suppliers. Results of the selected model provide a complete ranking and an appropriate grouping with an acceptable level of prediction accuracy respectively to evaluation decision making and selection of suppliers. The main objective of this study is to evaluate performance of logistic service suppliers, and also seeks to find an answer about how to use methods of data envelopment analysis and data mining in evaluation of suppliers. Time percentage measure of timely delivery of parts has the maximum efficiency and the measure of ability to reduce price has the minimum efficiency. In the other hand, once this model is used, there is no need to modeling and resolve data envelopment analysis models with high computational volume. Indeed, application of neural networks has been able to eliminate defect of prediction disability in data envelopment analysis.

کلمات کلیدی:

Supply chain management (SCM), Data envelopment analysis (DEA), Artificial neural networks (ANN), Data (envelopment analysis cross efficiency (DEACE

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