

عنوان مقاله:

Evaluating cost efficiency of decision-making units in an uncertain environment

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خلاصه مقاله:

The efficiency evaluation of organizational units provides managers with a perspective on the current state of the organization and solutions for their improvement. One of the methods of organizational evaluation is to determine the organization's minimum cost or cost efficiency. Cost efficiency in practice can be calculated when the input prices are available. In traditional models of cost efficiency, input and output data are crisp. However, there are situations where input and/or output may be imprecise. For such cases, experts are invited to model their opinion. Then uncertainty theory can be applied which is introduced by Liu as a mathematical branch rationally dealing with belief degrees. In this paper, a model is proposed to estimate the cost of decision-making units in the uncertain environment, where inputs and outputs are uncertain but the input prices are crisp. Several theorems are presented to discuss some features of the introduced model. When the data has a linear distribution, the cost efficiencies of the decision-making units are calculated. Also, the model is implemented on two numerical examples. The obtained results are compared with previous results. Finally, in the presence of input prices, a different cost efficiency score for the decision-making units is obtained. The proposed model helps decision-makers to improve their performance by using experts' opinions

کلمات کلیدی:

Data envelopment analysis, cost efficiency, uncertainty, Evaluating, decision-making units

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