عنوان مقاله:

A Novel Approach for Solving Fuzzy Stochastic Data Envelopment Analysis Model in the Presence of Undesirable Outputs

نویسنده:

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خلاصه مقاله:

Data Envelopment Analysis (DEA) is a widely used technique for measuring the relative efficiencies of Decision Making Units (DMUs) with multiple inputs and multiple outputs. However, Undesirable Outputs (UO) may be present in the production process which needs to be minimized. In real-world problems, the observed values of the input and output data are often vague or random. Indeed, Decision Makers (DMs) may encounter a hybrid uncertain environment where fuzziness and randomness coexist in a problem. This paper proposes fuzzy stochastic DEA model with undesirable outputs. The extensions to the fuzzy-stochastic environment sometimes may be laid to disregard some of the properties in DEA models such as linearity and feasibility. In this way, we apply a new version of DEA-UO model according to the probability-possibility approach to propose a linear and feasible model in deterministic form. A numerical example is presented to illustrate the features and the applicability of the proposed models.

کلمات کلیدی:

Data envelopment analysis, Undesirable output, Fuzzy random variable, Possibility–probability

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