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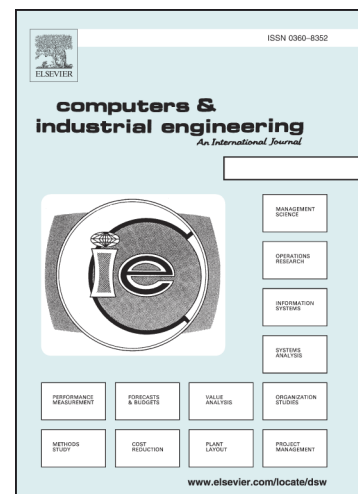
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AN ALTERNATIVE NEUTRAL APPROACH FOR CROSS-EFFICIENCY EVALUATION

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Abstract

Cross-efficiency evaluation is a widespread approach within Data Envelopment Analysis (DEA) that has proved to be particularly useful for ranking decision making units. Several cross-evaluation methods have been proposed that differ in the characteristics of the secondary goal imposed to deal with the non-uniqueness of the optimal weights in DEA. In this paper a new secondary goal is defined that addresses the selection of DEA weights from a neutral perspective. The proposed formulation considers two hypothetical units that represent the best and worst possible performers within the given production context and forces their efficiency to be as small and large (respectively) as possible in a simultaneous way. A numerical experiment with randomly generated data has been carried out to study the performance of the suggested approach in comparison with traditional benevolent and aggressive methods. The results corroborate the neutral orientation of the new formulation and validate our proposal as a reasonable alternative to traditional cross-efficiency approaches. Moreover, as a real world example, the approach is applied to the performance evaluation of the world's top Research and Development (R&D) investing companies in the Biopharmaceutical industry.

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