

عنوان مقاله:

Determination measure of efficiency using by undesirable outputs of DEA

محل انتشار:

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خلاصه مقاله:

Data envelopment analysis (DEA) measures the relative efficiency of decision making units (DMUs) with multiple performance factors which are grouped into outputs and inputs. Once the efficient frontier is determined, inefficient DMUs can improve their performance to reach the efficient frontier by either increasing their current output levels or decreasing their current input levels. However, both desirable and undesirable factors may be present. For example, if inefficiency exists in production processes where final products are manufactured with a production of wastes and pollutants, the outputs of wastes and pollutants are undesirable and should be reduced to improve the performance. Using the classification invariance property, we show that the standard DEA model can be used to improve the performance via increasing the desirable outputs and decreasing the undesirable outputs. The method can also be applied to situations when some inputs need to be increased to improve the performance. The linearity and convexity of DEA are preserved through our proposal. In this paper, the possibility of suitable production is presented, and then a new method is suggested taking into account the existence of some undesirable components in the outputs and inputs of DMUs in the set.

کلمات کلیدی:

Data Envelopment Analysis, Undesirable Inputs and Outputs, Efficiency

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