

عنوان مقاله:

Cost Efficiency Measures In Data Envelopment Analysis With Nonhomogeneous DMUs

محل انتشار:

مجله بین المللی ریاضیات صنعتی، دوره 10، شماره 1 (سال: 1397)

تعداد صفحات اصل مقاله: 11

نویسندگان:

M. Barat - *Department of Mathematics, College of Science, Central Tehran Branch, Islamic Azad University, Tehran, Iran*

G. Tohidi - *Department of Mathematics, College of Science, Central Tehran Branch, Islamic Azad University, Tehran, Iran*

M. Sanei - *Department of Mathematics, College of Science, Central Tehran Branch, Islamic Azad University, Tehran, Iran*

خلاصه مقاله:

In the conventional data envelopment analysis (DEA), it is assumed that all decision making units (DMUs) using the same input and output measures, means that DMUs are homogeneous. In some settings, however, this usual assumption of DEA might be violated. A related problem is the problem of \textit{missing} \textit{data} where a DMU produces a certain output or consumes a certain input but the values are not available. To address this problem there are some approaches which assign a value (e.g. zero or average of existing values) to the missing data. On the other hand, there are situations where the missing output or input can be produced or consumed by the DMU but for some reasons, an output is not created or the DMU does not have accessibility to an input, hence assigning an artificial value to the nonexistent factor is inappropriate. As some recent studies have focused on addressing the problem of nonhomogeneity among inputs and outputs measures, it has become increasingly important to understand its cost structure. This study develops a new DEA methodology to assess cost efficiency (CE) of DMUs in the situation of nonhomogeneous DMUs with different outputs configurations. Via proceeding in three-step procedure both CE scores and subgroup CE scores of DMUs is derived. A numerical example containing a set of ۴۷ steel fabrication plants is used to show the applicability of the model.

کلمات کلیدی:

cost efficiency, Data Envelopment Analysis, Nonhomogeneous DMUs, (Mono)morphism.

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1887049>

