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三元效率区间下决策单元的全局绩效评价

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Overall Performance Evaluation for DMUs with Ternary Efficiency Interval

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摘要 针对现实生活中投入产出数据的不确定性,许多学者提出从乐观和悲观角度计算决策单元的效率区间,但每个效率区间的上、下界值都是决策单元表现的两种极端情况。本文通过引入心态指标衡量决策者的偏好,获得了一个最有可能的效率值,它与上界值、下界值共同组成了三元效率区间。然后改进了两级排序方法:提出了三元有向距离指数,为所有决策单元获得全序化结果。本文引用前人文中的数例验证了该方法是一种更为精确、可全序化的评价、决策方法,可广泛应用于效率测评中。

关键词: [数据包络分析](#) [三元效率区间](#) [乐观效率](#) [悲观效率](#) [三元有向距离指数](#)

Abstract: To deal with the uncertainty of the data for input and/or output in the real world, many experts presented efficiency interval to evaluate the performance for each DMU from optimistic and pessimistic views. Undeniably, the lower and upper bound of the efficiency interval are two extremes of each DMU performance. In this paper, the preference of the decision makers are considered by introducing the attitude index to get the most probable efficiency value, which with the lower and upper bound constitutes the ternary efficiency interval. Then ternary directional distance index is proposed, improving the two-grade ranking method, to get a full ranking for all DMUs. The illustrative example shows this method is more precise and widely used in efficiency evaluation and decision-making field, the effectiveness and practicability of the proposed method.

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