Efficiency Analysis of the Swedish Forest Industry Using a Data Envelopment Analysis Approach

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Abstract : Data Envelopment Analysis (DEA) is a widely recognized method for evaluating the relative efficiencies of decision-making units (DMUs). This study focuses on assessing the efficiency of the SCA forest company in Sweden using DEA. The analysis employs both the CCR and BCC models, incorporating both desirable and undesirable outputs to provide a comprehensive evaluation. The study reveals significant findings: notable differences in the mean efficiency scores of DMUs over a 30-year period were identified using two CCR model scenarios. In contrast, the BCC model did not indicate significant variations in efficiency scores among the DMUs. To validate these results, Wilcoxon's signed-rank test was utilized to assess the statistical significance of the observed differences. These results offer valuable insights into efficiency dynamics within the Swedish forest industry and highlight the impact of model selection in DEA analyses. This case study enhances operational benchmarks for Swedish forestry and provides implications for similar industrial contexts.
Keywords : data envelopment analysis, CCR model, BCC model, efficiency analysis, swedish forest industr
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