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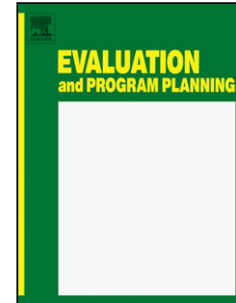
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Evaluating firms' R&D performance using best worst method

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Research Highlights

- A multi-criteria framework for firm's R&D performance evaluation is proposed
- Best Worst Method (BWM) is used to identify the weights (importance) of R&D measures
- R&D performance of 50 high-tech Dutch SMEs is measured using the proposed methodology
- Assigning weights to different R&D measures results in different ranking of the firms
- The proposed methodology allow SMEs to improve their R&D performance

Abstract – Since research and development (R&D) is the most critical determinant of the productivity, growth and competitive advantage of firms, measuring R&D performance has become the core of attention of R&D managers, and an extensive body of literature has examined and identified different R&D measurements and determinants of R&D performance. However, measuring R&D performance and assigning the same level of importance to different R&D measures, which is the common approach in existing studies, can oversimplify the R&D measuring process, which may result in misinterpretation of the performance and consequently fallacy R&D strategies. The aim of this study is to measure R&D performance taking into account the different levels of importance of R&D measures, using a multi-criteria decision-making method called Best Worst Method (BWM) to identify the weights (importance) of R&D measures and measure the R&D performance of 50 high-tech SMEs in the Netherlands using the data gathered in a survey among SMEs and from R&D experts. The results show how assigning different weights to different R&D measures (in contrast to simple mean) results in a different ranking of the firms and allow R&D managers to formulate more effective strategies to improve their firm's R&D performance by applying knowledge regarding the importance of different R&D measures.

Keywords: R&D performance; R&D measures; Best Worst Method (BWM); small-to-medium-sized enterprises (SMEs).

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