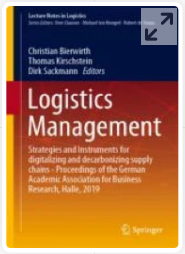

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DEA Sustainability Evaluation in Automotive Supply Chains

Birte Struve, Timo Christopher Anke & Matthias Klumpp

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Abstract

The question of sustainability evaluation in global supply chains is often answered qualitatively with standards and status evaluations. However, dedicated management requires also quantitative approaches to evaluate the existing situation adequately. By applying a quantitative approach, this research work considers the global automotive supply chains with a Data Envelopment Analysis (DEA) sustainability evaluation and matching key performance indicators. In this setting, 13

automotive companies are analyzed for three different years 2015 to 2017. Results show that different OEMs are featuring very distinctive sustainability settings and results – deriving also optimization potential in comparison to the other companies.

Keywords

DEA **Sustainability**

Automotive supply chains

Notes

1. This corresponds to the following calculation: $39 \geq (4 + 5) \times 3$.

2. The significant increase in Suzuki's pure technical inefficiency score of almost 50% points in 2017 is due to the decline in the ratio of R&D expenditure and female employees to the four environmental inputs.

3. The size of the companies was defined on the basis of the sales revenues.

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Author information

Authors and Affiliations

Georg-August-University Göttingen, Wilhelmsplatz 1, 37073, Göttingen, Germany
Birte Struve, Timo Christopher Anke & Matthias Klumpp

Corresponding author
Correspondence to Birte Struve .

Editor information

Editors and Affiliations

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Annex

Table 1. Overview of the key performance indicators

Table 2. Overview of data used

Table 3. List of DEA efficiency scores for analyses 1–3

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