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Systematic Review on Metrics for Sustainable Supply Chain Management

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Abstract

The effective implementation of Sustainable Supply Chain Management (SSCM) hinges on the ability to measure performance through robust and well-defined metrics. While a plethora of metrics have been proposed, the literature remains fragmented, with inconsistencies in their formulation, computational methods, and classification. This systematic literature review (SLR) aims to comprehensively identify, map, and analyze existing sustainability metrics proposed in the SSCM literature. Following a rigorous PRISMA protocol applied to the Scopus database, 125 studies were included in the final analysis. A bibliometric analysis maps the academic landscape, detailing publication trends, leading authors and countries, and influential journals. The qualitative analysis characterizes the identified metrics by assigning them to the Environmental, Social, and Governance (ESG) pillars, scrutinizing their computational approaches and reliance on specific data sources, and mapping their industrial areas and sectors. Findings reveal significant disparities across ESG pillars, with the Social pillar remaining the most underrepresented, and highlight the prevalence of metrics lacking an explicit computational formula. Furthermore, the analysis of industrial contexts and data sources shows a clear concentration, primarily featuring use cases in the manufacturing and secondary sectors. One of this study's primary contributions is a catalog of all quantifiable SSCM metrics that include an explicit formula, detailing their denomination, computational approach, and associated parameters. This catalog provides a critical resource for researchers and practitioners seeking to develop robust, evidence-based performance measurement systems for SSCM.

Keywords: Sustainable Supply Chain Management, Sustainability Metrics, Performance Measurement, Esg Pillars, Systematic Literature Review