

Prospects of Socio-Economic Upliftment with the Advancement of Technologies in Supply Chain Management: A Study of Learning Sustainability

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Abstract: To mark the need of industries as well as to develop a sustainable supply chain, different latest technologies deliberately are used to optimize Social Life Cycle Assessment (S-LCA) which evaluates the social and socioeconomic impacts of products and services. By processing vast, complex datasets, AI and ML can significantly enhance the efficiency, accuracy, and scalability by overcoming many of the limitations of traditional and manual assessments that leads to sustainability in Supply Chain Management (SCM) as it focused on social and socioeconomic impacts of products and services. S-LCA focuses directly on the well-being of value chain partners to identify social risks and opportunities for improvement along with, consumers, workers and local communities. To optimize the S-LCA, AI and ML models work on data collection, assessment complexity, and the subjective nature of social data and streamline the analysis of social and socioeconomic impacts across a product's life cycle. The study uses multi-objective optimization models (MOOM), decision trees and Hybrid AI to analyse the supply chain for the best need of every individual and benefits of overall of the society.

Keywords: Social Risk, AI&ML, S-LCA, Robust System, MOOM

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