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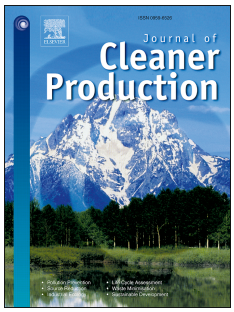

Intelligent Autonomous Vehicles in digital supply chains: A framework for integrating innovations towards sustainable value networks

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Intelligent Autonomous Vehicles in digital supply chains: A framework for integrating innovations towards sustainable value networks

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Abstract

The principal objective of this research is to provide a framework that captures the main software architecture elements for developing highly customized simulation tools that support the effective integration of Intelligent Autonomous Vehicles (IAVs) in sustainable supply networks, as an emerging field in the operations management agenda. To that end, the study's contribution is fourfold including: (i) a review of software simulation tools and platforms used in assessing the performance of IAVs interlinked with sustainability ramifications in supply chain (SC) ecosystems, (ii) an integrated software framework for monitoring and assessing the sustainability performance of SCs defined by the utilisation of innovative IAVs in operations, (iii) a translation of the proposed SC framework into a corresponding software application through a robust five-stage stepwise process, and (iv) a demonstration of the developed software tool through its application on the case of an IAV

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