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Assessment of digitalized logistics for implementation in low-income countries

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Integration of digitalization and automation with logistics systems promotes effective and efficient flow of goods, information, and services, contributing to economic development. The level of implementation of digitalization and automation in low-income countries is still low, however. The aim of this study is to establish which digitalized logistics practices could best be adopted by firms in low-income countries. A systematic literature review was used to identify state-of-the-art digitalization and automation technologies in logistics chains. Criteria for adopting digitalized logistics practices were also identified in the literature review. An expert survey was conducted to identify criteria weights using analytical hierarchy process (AHP). Economic benefit, infrastructure, and affordability were the criteria that were given the highest weights by the experts. Case studies that applied state-of-the-art technologies such as internet of things (IoT), radio frequency identification (RFID), blockchain, big data analytics (BDA), and sensors mainly for traceability, production operation, and warehouse and inventory management were considered as recommended practices. Identification of suitable practices considering the local conditions in low-income countries could help logistics professionals and policymakers adopt enabling technologies in logistics chains.

Biography

Mahlet Demere Tadesse is a PhD student at the Swedish University of Agricultural Sciences, Department of Energy and Technology. Her research focuses on the impact of digitalization and automation in enhacing the performace of supply chains in low-income countries. Prior to the PhD, she was a lecturer at Addis Ababa Institute of Technology, School of Civil and Environmental Engineering in Addis Ababa Ethiopia.