African Control Systems Engineering

Digital Supply Chain Evolution and Adoption in Ethiopian Agro-Industry: Insights from Six-Month Usage

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Abstract

Digital supply chain management has become increasingly important for enhancing efficiency in agro-industries globally. The research utilised a mixed-methods approach involving surveys, interviews, and online platform analysis. Data was collected from six major agribusinesses in Ethiopia. Usage patterns indicated that adoption rates varied significantly across different sectors of the supply chain (e.g., procurement, production, logistics), with an average usage rate of 75% among surveyed firms. The study highlights challenges such as insufficient technical infrastructure and resistance to change as barriers to digital supply chain integration in Ethiopian agro-industry. Policy makers should prioritise investment in digital literacy training for small-scale farmers, while businesses are encouraged to adopt hybrid models combining traditional and digital practices. Digital Supply Chain Adoption, Ethiopian Agro-Industry, Six-Month Usage Insights The maintenance outcome was modelled as $Y\{\} = beta0 + beta1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Geographical Indications, Digital Twin Technology, Blockchain, Supply Chain Optimization, Lean Manufacturing, Sustainability Metrics, IoT Applications*

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