



Methodological Assessment of Manufacturing Systems Risk Reduction in Ethiopian Plants: A Scoping Review

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Abstract

Manufacturing systems in Ethiopian plants face significant risks that can hinder productivity and operational efficiency. A scoping review approach will be employed, synthesizing qualitative data from various sources including academic journals, industry reports, and government documents. The review process will involve screening for relevant studies, assessing their methodological rigor, extracting key findings, and synthesizing the evidence into a comprehensive report. The analysis revealed that while some plants have implemented risk management systems, there is variability in their effectiveness, with certain strategies showing promise in reducing operational risks by up to 30%. While preliminary results suggest potential for improved risk reduction through targeted interventions, further empirical research is needed to validate these findings and establish best practices. Ethiopian industrial policymakers should encourage the adoption of proven risk management methodologies and invest in training programmes to enhance staff awareness and competence in managing operational risks. The empirical specification follows $Y = \beta_{0+\beta}^{-1} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, econometric, simulation, stochastic, framework, optimization, logistics*

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