AI-Powered Supply Chain Risk Mitigation in Darjeeling Tea Exports to Uganda: A Comparative Assessment Over One Year

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Abstract

This study addresses a current research gap in Computer Science concerning   "AI-Based Supply Chain Risk Management for Exporting Tea from Darjeeling Region: Market Performance Impact Over One Year" in Uganda. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A structured analytical approach was used, integrating formal modelling with domain evidence. The results establish bounded error under perturbation, a convergent estimation process under stated assumptions, and a stable link between the proposed metric and observed outcomes. The findings provide a reproducible analytical basis for subsequent theoretical and applied extensions. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency.   "AI-Based Supply Chain Risk Management for Exporting Tea from Darjeeling Region: Market Performance Impact Over One Year", Uganda, Africa, Computer Science, comparative study This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

Keywords: *Geography, Africa, Supply-Chain, Risk-Mitigation, Artificial-Intelligence, Network-Analysis, Data-Science*

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