Blockchain Technology in African Mineral Extraction Supply Chains: A DRC Case Study

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Abstract

The Democratic Republic of Congo (DRC) is a major producer of minerals but faces significant challenges in ensuring transparency and accountability in its mineral extraction supply chains. The research methodology includes an analysis of existing literature on blockchain applications and interviews with key stakeholders involved in DRC's mineral extraction industry. Blockchain technology has been found to offer significant potential for improving traceability and reducing corruption risks in the DRC's mineral supply chains, although its adoption faces challenges related to infrastructure and governance. Despite these challenges, blockchain can contribute towards more transparent and accountable practices within DRC's mineral extraction sector. Implementing blockchain requires a collaborative effort between government bodies, private companies, and international organizations to address technical and regulatory hurdles. 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: *African Geography, Blockchain, Supply Chain Management, Transparency, DRC, Logistics, Technology Adoption*

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