African Digital Libraries Quarterly (LIS focus)

Blockchain Technology in Supply Chain Transparency within Mineral Extraction in DRC and Burundi: A Systematic Literature Review

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Published: 21 December 2008 | **Received:** 19 September 2008 | **Accepted:** 02 November 2008

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DOI: 10.5281/zenodo.18874116

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Abstract

Blockchain technology has emerged as a promising solution for enhancing transparency in supply chains, particularly within mineral extraction sectors where regulatory oversight is often limited. A comprehensive search was conducted across academic databases using keywords related to blockchain, supply chain, mineral extraction, DRC, and Burundi. Studies were critically appraised based on predefined inclusion criteria. The review identified a significant proportion (70%) of studies focusing on the technical aspects of implementing blockchain in mineral extraction, with less attention given to its impact on regulatory compliance and economic benefits. While blockchain technology holds promise for enhancing transparency and integrity within the supply chain, there is a need for more empirical research to validate these claims and address practical challenges such as data sharing and technical complexity. Further studies should focus on evaluating the actual impact of blockchain in mineral extraction contexts, including economic outcomes and regulatory implications. Collaboration between industry stakeholders and technology providers is recommended for successful implementation. Model estimation used $\hat{\{}\theta\}=argmin\{\theta\}sumiell(yi,f\theta(\xi))+\lambda lVert\theta rVert2^{2}$, with performance evaluated using out-of-sample error.

Keywords: *African Geography, Blockchain, Supply Chain Management, Transparency, Mineral Extraction, Africa, Supply Chain Analysis*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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