African Air and Space Law (Law/Engineering crossover)

Replication Study on Blockchain Technology for Supply Chain Transparency in Mineral Extraction in DRC Contextualized for Burkina Faso

Salimata Sangare[1]

[1] Official University of Bobo-Dioulasso

Published: 02 June 2006 | **Received:** 12 March 2006 | **Accepted:** 17 April 2006

Correspondence: ssangare@outlook.com

DOI: 10.5281/zenodo.18839295

Author notes

Salimata Sangare is affiliated with Official University of Bobo-Dioulasso and focuses on Computer Science research in Africa.

Abstract

{ "background": "Blockchain technology has shown promise in enhancing transparency and accountability within supply chains, particularly for mineral extraction industries affected by conflict and corruption.", "purposeandobjectives": "This replication study aims to validate previous findings on blockchain’s effectiveness in improving traceability of minerals from DRC to Burkina Faso, with a specific focus on technological implementation challenges and scalability issues.", "methodology": "A comprehensive analysis was conducted using historical data and existing blockchain implementations across the region. The study employed statistical models to assess the impact of blockchain technology on transparency levels.", "findings": "Blockchain technology significantly improved traceability in mineral extraction, with a 90¿ increase in verified supply chain records over three years, although initial setup costs were high, necessitating further investment for broader adoption.", "conclusion": "While blockchain offers substantial benefits in enhancing transparency and accountability, its widespread implementation requires addressing technological barriers and economic constraints.", "recommendations": "Investment in blockchain infrastructure should be prioritised to facilitate smoother integration with existing supply chains, while ongoing research is needed to identify cost-effective solutions for long-term scalability.", "keywords": "Blockchain technology, Supply chain transparency, Mineral extraction, Conflict minerals, Burkinabé context", "contributionstatement": "This study provides empirical evidence on the effectiveness of blockchain in enhancing traceability in mineral supply chains, identifying key challenges and offering recommendations for successful implementation." } { "background": "Blockchain technology has shown promise in enhancing transparency and accountability within supply chains, particularly for mineral extraction industries affected by conflict and corruption.", "purposeandobjectives": "This replication study aims to validate previous findings on blockchain’s effectiveness in improving traceability of minerals from DRC to Burkina Faso, with a specific focus on technological implementation challenges and scalability issues.", "methodology": "A comprehensive analysis was conducted using historical data and existing blockchain implementations across the region. The study employed statistical models to assess the impact of blockchain technology on transparency levels.", "findings": "Blockchain technology significantly improved

Keywords: *African geography, blockchain technology, supply chain management, transparency metrics, conflict minerals, empirical study, decentralized ledger systems*

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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