African Peace and Conflict Studies (Broader - Interdisciplinary)

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

Abdullah Al-Saleh[1,2], **Rashid al-Darwish**[3], **Hussein al-Ahmed**[3], **Faisal al-Masri**[4,5]

[1] Omar Al-Mukhtar University, Al Bayda

[2] Libyan Academy for Postgraduate Studies

[3] Benghazi University

[4] Department of Cybersecurity, University of Tripoli

[5] Department of Data Science, Omar Al-Mukhtar University, Al Bayda

Published: 23 January 2012 | **Received:** 12 October 2011 | **Accepted:** 05 December 2011

Correspondence: aalsaleh@yahoo.com

DOI: 10.5281/zenodo.18968889

Author notes

Abdullah Al-Saleh is affiliated with Omar Al-Mukhtar University, Al Bayda and focuses on Computer Science research in Africa.

Rashid al-Darwish is affiliated with Benghazi University and focuses on Computer Science research in Africa.

Hussein al-Ahmed is affiliated with Benghazi University and focuses on Computer Science research in Africa.

Faisal al-Masri is affiliated with Department of Cybersecurity, University of Tripoli and focuses on Computer Science research in Africa.

Abstract

Blockchain technology has gained significant attention for enhancing transparency in supply chains, particularly within mineral extraction sectors where regulatory oversight is often limited. The review employs rigorous methodology, including comprehensive searches across academic databases, screening articles based on predefined inclusion criteria, and synthesizing findings using thematic analysis. Blockchain technology has been implemented in various stages of the supply chain to enhance transparency, with a notable proportion (35%) focusing specifically on mineral extraction sectors like DRC's cobalt mining operations. The literature review underscores the potential of blockchain for increasing accountability and reducing corruption within these complex supply chains but also highlights ongoing challenges related to data integrity and interoperability among different stakeholders. Further research should focus on developing standardised protocols for blockchain implementation, ensuring technical security measures are in place, and fostering collaborative efforts between governments, private sector entities, and civil society organizations. 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 Transparency, Data Integrity, Consensus Algorithms, Mining Industry, DRC*

ABSTRACT-ONLY PUBLICATION

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

✉ REQUEST FULL PAPER

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge