



Environmental Governance and Compliance Practices in Zambia's Mining Sector: A Meta-Analysis

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Abstract

The mining sector in Zambia is a significant contributor to the country's economy but also faces challenges related to environmental governance and compliance. The analysis employs a systematic review approach, incorporating quantitative data from peer-reviewed journals and grey literature sources. Meta-analytic techniques are used to aggregate findings and provide insights into trends and variations across studies. Findings indicate that while there is variability in compliance practices among mining companies, a consistent theme is the reliance on government regulations as primary drivers of environmental governance efforts. The meta-analysis reveals that while regulatory frameworks are effective in promoting compliance, sector-specific challenges such as technological limitations and resource availability continue to impact implementation. Recommendations include strengthening stakeholder engagement mechanisms and fostering innovation in technology adoption to enhance environmental governance outcomes in the mining sector. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African geography, governance models, compliance frameworks, mining law, environmental impact assessment, stakeholder engagement, econometrics*

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