



Evaluation of Power-Distribution Equipment Systems in Ethiopia: A Randomized Field Trial on Adoption Rates

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Abstract

Power distribution equipment systems are critical for ensuring reliable electricity supply in Ethiopia's mining sector. However, there is limited empirical evidence on their adoption rates. A randomized field trial was conducted to assess the uptake of different types of power distribution equipment. A logistic regression model with robust standard errors was used to analyse the data, considering factors such as economic conditions and infrastructure quality. The analysis revealed a significant adoption rate of up to 70% for certain systems under favorable economic conditions, indicating that targeted incentives could further boost their use. This study provides insights into the effective strategies for promoting power distribution equipment in Ethiopian mining operations. Policy makers should consider implementing targeted financial incentives and improving infrastructure quality to enhance the adoption of these essential systems. Power Distribution Equipment, Adoption Rates, Randomized Field Trial, Mining Industry, Ethiopia The maintenance outcome was modelled as $Y_i = \beta_0 + \beta_1 X_i + u_i + \epsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Sub-Saharan, Africa, Ethiopia, RandomizedFieldTrial, TechnologicalAdoption, Power-Distribution, Systems, Methodology*

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