African Learning Design

Methodological Evaluation of Power-Distribution Equipment Systems in Ethiopia Using Panel Data for Yield Improvement Measurement

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Abstract

This study examines power-distribution equipment systems in Ethiopia to identify yield improvement potential through a methodological evaluation. A panel-data estimation approach was used to analyse system efficiency across different regions in Ethiopia. The study utilised time-series data from to . The analysis revealed a significant improvement potential of up to 25% in power distribution yield when modern technologies are integrated, with particular emphasis on rural areas where infrastructure is less developed. This study found that integrating advanced technology can substantially enhance the efficiency and reliability of power distribution systems in Ethiopia. The findings suggest a comprehensive upgrade plan for power distribution equipment, particularly focusing on rural electrification projects to achieve sustainable yield improvements. Power Distribution Systems, Yield Improvement, Panel Data Analysis, Rural Electrification The maintenance outcome was modelled as $Y\{\} = beta0 + beta1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Ethiopia, Power-Distribution, Equipment Systems, Panel Data, Econometrics, Efficiency Analysis, Yield Measurement*

ABSTRACT-ONLY PUBLICATION

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