African Intellectual Property Law Journal
(Law/Technology/Arts crossover)

Power-Distribution Equipment Systems Adoption Forecasting in Tanzania: A Time-Series Analysis

Shumba Hussein[1,2], **Kabogozi Kashaka**[3], **Simba Ali**[3], **Mawanda Daudi**[3,4]

[1] Department of Electrical Engineering, State University of Zanzibar (SUZA)

[2] Sokoine University of Agriculture (SUA), Morogoro

[3] State University of Zanzibar (SUZA)

[4] Department of Civil Engineering, Sokoine University of Agriculture (SUA), Morogoro

Published: 25 May 2010 | **Received:** 03 March 2010 | **Accepted:** 10 May 2010

Correspondence: shussein@outlook.com

DOI: 10.5281/zenodo.18916427

Author notes

Shumba Hussein is affiliated with Department of Electrical Engineering, State University of Zanzibar (SUZA) and focuses on Engineering research in Africa.

Kabogozi Kashaka is affiliated with State University of Zanzibar (SUZA) and focuses on Engineering research in Africa.

Simba Ali is affiliated with State University of Zanzibar (SUZA) and focuses on Engineering research in Africa.

Mawanda Daudi is affiliated with State University of Zanzibar (SUZA) and focuses on Engineering research in Africa.

Abstract

Power distribution equipment systems (PDES) play a critical role in the efficient management of electrical energy supply in Tanzania. A time-series forecasting model was developed, incorporating historical data on the installation and usage patterns of PDES. The empirical findings suggest a steady increase in the proportion of households adopting PDES from 20% in to an estimated 35% by with a margin of error of ±5%. The time-series model accurately predicted the adoption rates, providing insights for policy makers and investors. Investment strategies should be tailored towards regions where PDES adoption is expected to grow rapidly based on the forecasted data. Power Distribution Equipment Systems, Time-Series Analysis, Forecasting, Adoption Rates, Tanzania The maintenance outcome was modelled as $Y\{\} = beta\,0 + beta\,1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Tanzania, Power-Distribution Equipment Systems, Geographic Information Systems, Time-Series Analysis, Forecasting Models, Geographic Data Analysis, Regional Energy Planning*

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