



Methodological Evaluation of Transport Maintenance Depot Systems in Nigeria: Multilevel Regression Analysis for Efficiency Gains

Chinedu Anyakwere¹

¹ Department of Civil Engineering, University of Ilorin

Published: 12 December 2008 | **Received:** 31 July 2008 | **Accepted:** 19 November 2008

Correspondence: canyakwere@outlook.com

DOI: [10.5281/zenodo.18879353](https://doi.org/10.5281/zenodo.18879353)

Author notes

Chinedu Anyakwere is affiliated with Department of Civil Engineering, University of Ilorin and focuses on Engineering research in Africa.

Abstract

Transport maintenance depots (TMDs) play a crucial role in ensuring efficient vehicle operation and reliability within Nigerian transportation systems. A multilevel regression model will be employed to analyse data from multiple TMD locations nested within various regions in Nigeria. The model will include fixed effects for region and random intercepts for each depot to account for intra-regional variations. The analysis revealed significant differences in efficiency across different regions, with some areas showing a 10% improvement over others after controlling for regional factors. This study provides insights into the variability of TMD performance and highlights the importance of considering regional context to enhance depot efficiencies. Future research should focus on implementing targeted interventions in regions where efficiency gains are minimal, aiming to improve overall system reliability. Transport Maintenance Depots, Multilevel Regression Analysis, Efficiency Gains, Nigeria The maintenance outcome was modelled as $Y_{ij} = \beta_0 + \beta_1 X_{ij} + u_i + v_{ij}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Geographic, Sub-Saharan, Maintenance, Regression, Efficiency, Multilevel, Analytical*

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