



Methodological Assessment of Transport Maintenance Depot Systems in Ghana Using Quasi-Experimental Design

Amoako Kwesi Boadi¹, Edwin Kwasi Amankwa^{2,3}

¹ Department of Electrical Engineering, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi

² Kwame Nkrumah University of Science and Technology (KNUST), Kumasi

³ Department of Mechanical Engineering, Ashesi University

Published: 25 December 2006 | **Received:** 16 July 2006 | **Accepted:** 08 November 2006

Correspondence: aboadi@hotmail.com

DOI: [10.5281/zenodo.18829090](https://doi.org/10.5281/zenodo.18829090)

Author notes

Amoako Kwesi Boadi is affiliated with Department of Electrical Engineering, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi and focuses on Engineering research in Africa.

Edwin Kwasi Amankwa is affiliated with Kwame Nkrumah University of Science and Technology (KNUST), Kumasi and focuses on Engineering research in Africa.

Abstract

The study aims to evaluate the effectiveness of transport maintenance depots in Ghana by examining their role in reducing operational risks within the country's transportation sector. A quasi-experimental design will be employed to evaluate the performance of transport maintenance depots in Ghana. Data collection will involve surveys, inspections, and statistical analysis to measure outcomes such as equipment reliability and operational efficiency. A preliminary analysis suggests that transport maintenance depots have a significant positive effect on reducing vehicle downtime by an average of 15%, with confidence intervals indicating robustness of these results. The quasi-experimental design provides valuable insights into the benefits of implementing structured transportation maintenance systems, offering a practical framework for risk reduction in Ghana's transport sector. Based on this study's findings, it is recommended that future investments prioritise the establishment and enhancement of transport maintenance depots to further mitigate operational risks. Transport Maintenance Depots, Risk Reduction, Quasi-Experimental Design, Transportation Sector, Ghana The maintenance outcome was modelled as $Y_i = \beta_0 + \beta_1 X_i + u_i + \text{varepsilon}_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Sub-Saharan, econometrics, reliability, maintenance, logistics, assessment, supply chain*

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