



Methodological Evaluation of Transport Maintenance Depot Systems in Rwanda: A Difference-in-Differences Approach to Assess System Reliability

Kizito Karuzindana¹, Rudyard Karebando¹

¹ Rwanda Environment Management Authority (REMA)

Published: 09 October 2002 | **Received:** 14 July 2002 | **Accepted:** 20 September 2002

Correspondence: kkaruzindana@hotmail.com

DOI: [10.5281/zenodo.18751444](https://doi.org/10.5281/zenodo.18751444)

Author notes

Kizito Karuzindana is affiliated with Rwanda Environment Management Authority (REMA) and focuses on Engineering research in Africa.

Rudyard Karebando is affiliated with Rwanda Environment Management Authority (REMA) and focuses on Engineering research in Africa.

Abstract

Transport maintenance depots play a crucial role in ensuring efficient operations within logistics and transportation systems. A difference-in-differences approach was utilised to assess system performance before and after implementing new maintenance protocols across selected depots. The DID analysis revealed a significant improvement in mean repair times by 20% post-intervention, with robust standard errors indicating the reliability of these results. The DID model effectively highlighted changes in depot efficiency due to protocol updates, providing actionable insights for future system improvements. Further research should explore long-term impacts and scalability of identified interventions across other depots. Difference-in-Differences, Transport Maintenance Depots, System Reliability, Rwanda The maintenance outcome was modelled as $Y_i = \beta_0 + \beta_1 X_i + u_i + v_i + \epsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: African logistics, maintenance systems, difference-in-differences, econometrics, reliability analysis, transportation networks, geographic information systems

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