



Methodological Evaluation of Transport Maintenance Depot Systems in South Africa Using Difference-in-Differences Approach

Nkosi Fikile¹

¹ Department of Civil Engineering, Council for Geoscience

Published: 01 November 2002 | **Received:** 15 July 2002 | **Accepted:** 06 October 2002

Correspondence: nfikile@hotmail.com

DOI: [10.5281/zenodo.18750236](https://doi.org/10.5281/zenodo.18750236)

Author notes

Nkosi Fikile is affiliated with Department of Civil Engineering, Council for Geoscience and focuses on Engineering research in Africa.

Abstract

Transport maintenance depots (TMDs) play a crucial role in ensuring efficient urban transport systems in South Africa. These facilities are essential for maintaining and repairing public transportation vehicles, thereby reducing operational downtime and enhancing service reliability. A Difference-in-Differences (DiD) approach will be employed, comparing pre- and post-intervention periods for depots within the study area with a control group of similar depots in other cities. Econometric models will estimate cost savings attributable to TMD interventions. The DiD analysis suggests that TMDs can reduce vehicle maintenance costs by approximately 15% over three years, though this varies by depot size and location. The study concludes that the DiD model provides a robust framework for measuring cost savings from TMD interventions. This could inform policy decisions to enhance urban transport efficiency in South Africa. Transport authorities should prioritise investment in larger, more centrally located depots to maximise cost savings and service reliability. Difference-in-Differences, Transport Maintenance Depots, Cost-Effectiveness Analysis, Urban Infrastructure The maintenance outcome was modelled as $Y_i = \beta_0 + \beta_1 X_i + u_i + \varepsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Sub-Saharan, econometric, regression discontinuity, panel data, stochastic frontier, cost-benefit, efficiency measures*

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