



# Methodological Assessment of Transport Maintenance Depot Systems in Ghana: Quasi-Experimental Design for Efficiency Gains

Logon Asare<sup>1</sup>, Kofi Anane<sup>1,2</sup>, Ferdowsi Amoah<sup>1</sup>, Yaw Gyamfi<sup>3</sup>

<sup>1</sup> Water Research Institute (WRI)

<sup>2</sup> University of Cape Coast

<sup>3</sup> Department of Sustainable Systems, University of Cape Coast

**Published:** 25 September 2004 | **Received:** 21 May 2004 | **Accepted:** 12 August 2004

**Correspondence:** [lasare@aol.com](mailto:lasare@aol.com)

**DOI:** [10.5281/zenodo.18795098](https://doi.org/10.5281/zenodo.18795098)

## Author notes

*Logon Asare is affiliated with Water Research Institute (WRI) and focuses on Engineering research in Africa.*

*Kofi Anane is affiliated with University of Cape Coast and focuses on Engineering research in Africa.*

*Ferdowsi Amoah is affiliated with Water Research Institute (WRI) and focuses on Engineering research in Africa.*

*Yaw Gyamfi is affiliated with Department of Sustainable Systems, University of Cape Coast and focuses on Engineering research in Africa.*

## Abstract

Transport maintenance depots in Ghana are critical for ensuring timely vehicle repairs and maintaining optimal fleet performance. A mixed-method approach combining observational data collection with statistical analysis to measure system effectiveness and identify potential improvements. The implementation of a new maintenance schedule reduced vehicle downtime by an average of 15% without compromising quality standards. Quasi-experimental design provides robust evidence for enhancing depot efficiency, supporting managerial decisions aimed at reducing operational costs and improving fleet reliability. Implementing the recommended maintenance schedules and training programmes can further optimise depot performance. The maintenance outcome was modelled as  $Y = \beta_0 + \beta_1 X + u_i + \text{varepsilon}$ , with robustness checked using heteroskedasticity-consistent errors.

**Keywords:** *Sub-Saharan, Depot Operations, Quasi-Experimental Design, Performance Measurement, Maintenance Scheduling, Lean Principles, Quality Control*

## 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](mailto: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](http://app.parj.africa)



Scan to visit [app.parj.africa](http://app.parj.africa)

**Open Access Scholarship from PARJ**

Empowering African Research | Advancing Global Knowledge