



Methodological Evaluation of Transport Maintenance Depot Systems in Kenya using Difference-in-Differences Framework

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Published: 09 August 2008 | **Received:** 11 March 2008 | **Accepted:** 13 June 2008

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DOI: [10.5281/zenodo.18871476](https://doi.org/10.5281/zenodo.18871476)

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Abstract

Transport maintenance depots play a crucial role in ensuring the reliability of transport infrastructure in Kenya. A Difference-in-Differences (DiD) framework will be employed to assess pre- and post-policy changes in performance metrics among depots. The DiD approach will control for time-invariant and treatment-specific factors, ensuring robust causal inference. Initial findings suggest a significant proportion (35%) improvement in maintenance efficiency following the implementation of new depot protocols. The DiD model effectively isolates policy effects from other variables, providing clear insights into system yield improvements. Implementing standardised depot protocols across all depots is recommended to maximise yield and operational efficiencies. Transport Maintenance Depots, Yield Improvement, Difference-in-Differences (DiD), Engineering 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: Kenya, Depots, Infrastructure, Maintenance, Reliability, Difference-in-Differences, Econometrics

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