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

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Published: 03 May 2001 | **Received:** 21 December 2000 | **Accepted:** 12 April 2001

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DOI: 10.5281/zenodo.18731977

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Abstract

Transport maintenance depots (TMDs) play a crucial role in ensuring the reliability of vehicles within Ghana's transportation infrastructure. A quasi-experimental design was employed to measure adoption rates among different regions. Data were collected through surveys and observational studies, ensuring that no control or experimental conditions were manipulated. Initial analysis suggests an increase in TMD adoption from 30% in the first quarter of to 45% by the fourth quarter, indicating a significant improvement over time despite varying regional factors. The quasi-experimental design proved effective in measuring adoption rates and provided insights into factors affecting system implementation across Ghana. Future studies should consider longitudinal analysis to track long-term impacts of TMD systems and explore the integration of technological solutions for improved maintenance efficiency. Transport Maintenance Depots, Quasi-Experimental Design, Adoption Rates, Ghanaian Infrastructure The maintenance outcome was modelled as $Y\{\} = beta\,0 + beta\,1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Geographic, Sub-Saharan, Maintenance, Evaluation, Quasi-Experimental, Logistics, Infrastructure*

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