



Evaluation of Transport Maintenance Depot Systems in Rwanda: A Randomized Field Trial on Efficiency Enhancement

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Abstract

Transport maintenance depots (TMDs) play a critical role in ensuring vehicle reliability and serviceability for various industries in Rwanda. A randomized field trial was conducted to assess the performance metrics of TMDs. Data were collected from randomly selected depots over a six-month period using standardised assessment tools. The analysis revealed that depot utilization efficiency improved by an average of 15% with specific improvements in vehicle maintenance turnaround times (VMTT) reducing by 20% among participating depots. This study concludes that strategic interventions based on the findings can significantly enhance the operational efficiency of TMDs, contributing to better service delivery and cost savings for stakeholders. Stakeholders are advised to implement a maintenance management system aligned with best practices identified in this research to optimise depot performance. Transport Maintenance Depots, Efficiency Enhancement, Randomized Field Trial, Rwanda

The maintenance outcome was modelled as $Y = \beta_0 + \beta_1 X + u_i + \varepsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Transportation, Maintenance, Logistics, Efficiency, Supply Chain, Randomization, Performance Measurement*

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