



Risk Reduction in Tanzania's Transport Maintenance Depots System: A Randomized Field Trial Evaluation

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Abstract

Transport maintenance depots play a critical role in ensuring safe and efficient operation of Tanzania's transport infrastructure. However, their effectiveness can be hindered by operational inefficiencies and systemic risks. A randomized field trial was conducted among five depots across different regions. Depots were randomly assigned to either an intervention group (receiving additional resources and training) or a control group (standard operations). Data collection included monthly performance metrics for all depots over six months. The proportion of maintenance tasks completed ahead of schedule in the intervention group was significantly higher than in the control group, with a difference of 20% (95% CI: 15-25%). This study provides empirical evidence that targeted interventions can enhance depot performance and reduce operational risks. Based on these findings, it is recommended that Tanzania invests in targeted resource allocation and training programmes to improve the efficiency of its transport maintenance depots. transport maintenance depots, randomized field trial, risk reduction, performance improvement The maintenance outcome was modelled as $Y_i = \beta_0 + \beta_1 X_i + u_i + \epsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: Tanzania, Logistics, Risk Management, Supply Chain, Operations Research, Quality Control, Randomized Trials

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