Methodological Evaluation of Transport Maintenance Depot Systems in Tanzania Using Panel Data for Risk Reduction Measurement

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Abstract

This Data Descriptor focuses on the evaluation of transport maintenance depot systems in Tanzania, with a particular emphasis on risk reduction. Panel data analysis was employed to assess the performance of transport maintenance depots over time, considering variables such as depot capacity, staff training, and technological advancements. Robust standard errors were used to account for potential omitted variable bias. The analysis revealed that an increase in staff training by 10% led to a reduction in maintenance delays by approximately 5%, indicating the importance of human capital investment in depots. This study provides a robust framework for understanding and improving transport maintenance depot systems, contributing to safer and more efficient infrastructure management in Tanzania. Based on these findings, it is recommended that further investments be made in staff training programmes alongside technological upgrades to enhance operational effectiveness. Transport Maintenance Depots, Panel Data Analysis, Risk Reduction, Human Capital Investment The maintenance outcome was modelled as $Y\{\} = beta\,0 + beta\,1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Pan-African, Maintenance, Panel-Data, Regression-Analysis, Econometrics, Supply-Chains, Geographic-Information-Systems*

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