



Methodological Evaluation of Ethiopian Transport Maintenance Depot Systems Using Panel Data for Cost-Effectiveness Analysis

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Abstract

This Data Descriptor focuses on evaluating the cost-effectiveness of transport maintenance depots in Ethiopia, providing a methodological framework for future studies. A fixed effects model will be used to analyse the costs and efficiencies associated with each depot, accounting for potential confounding variables such as depot size and geographical location. The analysis indicates that there is a significant variation in maintenance costs per vehicle across depots, necessitating further investigation into operational inefficiencies. While preliminary findings suggest variability in cost-effectiveness among depots, the need for detailed sector-specific research remains evident. Further studies should focus on specific depot operations to identify best practices and areas needing improvement. Quantitative data collection methods should be refined for more accurate future assessments. 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: Ethiopia, Maintenance Depots, Panel Data, Fixed Effects, Econometrics, Cost-Benefit, Methodology

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