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Methodological Assessment of Transport Maintenance Depot Systems in Ghana: A Quasi-Experimental Approach to Cost-Efficiency Evaluation

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Abstract

The study aims to evaluate the efficiency of transport maintenance depots in Ghana by applying a quasi-experimental design. A quasi-experimental design will be employed, including regression analysis to measure the impact of various factors on maintenance costs. The preliminary results indicate that depots in urban areas are more cost-effective than those in rural settings, with an average saving of £50 per vehicle maintained. While some depots show potential for improvement, there is a clear need to allocate resources towards enhancing the performance of depots located in less accessible regions. Investment should be prioritised in depots serving remote communities to ensure equitable maintenance services across Ghana. The maintenance outcome was modelled as $Y\{\} = beta0 + beta1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Geographic, Sub-Saharan, Maintenance, Regression, Evaluation, Quasi-experimental, Cost-effectiveness*