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Methodological Assessment and Risk Reduction Evaluation of Transport Maintenance Depots in Ghana: A Quasi-Experimental Study

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Abstract

Transport maintenance depots (TMDs) are crucial infrastructure components in Ghana's transport network, facilitating vehicle repairs and maintenance to ensure road safety and efficiency. A mixed-method approach was employed, integrating quantitative survey data with qualitative interviews. Statistical analyses were conducted to evaluate the effectiveness and efficiency of TMD operations. The analysis revealed that TMDs in northern Ghana faced higher maintenance costs compared to those in southern regions ($p < 0.05$), indicating regional disparities in depot performance. This study highlights the importance of localized data for optimising TMD operations and suggests targeted interventions based on identified inefficiencies. Future research should focus on developing standardised maintenance protocols and improving depot accessibility to reduce costs and enhance service quality. Transport Maintenance Depots, Quasi-Experimental Design, Risk Reduction, Ghana The maintenance outcome was modelled as $Y\{\} = beta\,0 + beta\,1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Ghana, Sub-Saharan, Logistics, SupplyChain, QualityAssurance, Metrology, EvaluationDesign*

ABSTRACT-ONLY PUBLICATION

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