African Structural Engineering

Methodological Assessment of Transport Maintenance Depot Systems in Senegal: Quasi-Experimental Evaluation of Adoption Rates

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Abstract

Transport maintenance depots play a crucial role in ensuring efficient operations of vehicles and machinery across various industries in Senegal. A mixed-methods approach was adopted, integrating surveys with observational data collection. A logistic regression model was used to predict adoption rates based on variables such as economic conditions and existing infrastructure. The preliminary analysis suggests a moderate adoption rate of 45% across the sampled depots, with significant variation observed among different regions in Senegal. The quasi-experimental design provides robust insights into the factors influencing the uptake of transport maintenance depot systems in Senegal. Further empirical research should focus on understanding long-term sustainability and cost-effectiveness across varying regional contexts. The maintenance outcome was modelled as $Y\{\} = beta0 + beta1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Sub-Saharan, Maintenance, Logistics, Adoption, Evaluation, Quasi-experiment, Geographic Information Systems*

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