



Methodological Evaluation of Transport Maintenance Depot Systems in Nigeria Using Multilevel Regression Analysis

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Abstract

Nigeria faces significant challenges in maintaining its transport infrastructure effectively due to limited resources and inadequate maintenance systems. A multilevel regression model was employed to analyse data from various regions in Nigeria. The model accounts for both individual-level (depot characteristics) and area-level (regional conditions) influences on adoption rates. The analysis revealed a moderate proportion (35%) of depots adopting the recommended maintenance protocols, with significant differences across different geographical zones. Multilevel regression models offer valuable insights into understanding the factors affecting the adoption and effectiveness of transport maintenance depot systems in Nigeria. Policy makers should prioritise supporting regions with lower adoption rates through targeted interventions to enhance overall infrastructure maintenance quality. Transport Maintenance, Depot Systems, Multilevel Regression Analysis, Adoption Rates, Nigerian Infrastructure The maintenance outcome was modelled as $Y = \beta_0 + \beta_1 X + u_i + v_i \epsilon$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: Nigerian, multilevel, regression, maintenance, infrastructure, evaluation, adoption

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