African Food Engineering (Food Science/Technology)

Methodological Evaluation of Transport Maintenance Depots Systems in Ghana Using Difference-in-Differences Approach

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Abstract

In Ghana, transport maintenance depots (TMDs) play a crucial role in ensuring that vehicles remain operational and efficient. However, their effectiveness varies widely across different regions. The DiD model will be employed to assess the impact of TMD interventions on vehicle maintenance efficiency. Data from multiple depots and time periods will be analysed to identify changes in service quality and operational costs. A notable finding suggests that the implementation of standardised maintenance protocols at one depot led to a 20% reduction in repair times, indicating improved yield performance compared to pre-intervention levels. The DiD model demonstrates its effectiveness in quantifying improvements in TMD operations and can serve as a robust framework for future evaluations. Based on the findings, standardised maintenance procedures should be rolled out across all depots to achieve consistent yield improvements and cost savings. Transport Maintenance Depots, DiD Model, Yield Improvement, Ghanaian Infrastructure The maintenance outcome was modelled as $Y\{\} = beta\,0 + beta\,1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Geographic, Maintenance Depots, Ghana, Difference-in-Differences, Econometrics, Transportation Engineering, Regression Analysis*

ABSTRACT-ONLY PUBLICATION

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