



Methodological Evaluation of Transport Maintenance Depot Systems in Nigeria: A Randomized Field Trial for Yield Improvement Assessment

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Abstract

Transport maintenance depots in Nigeria are crucial for ensuring efficient vehicle operation and safety. However, their performance variability is significant, making improvement strategies challenging. A mixed-method approach was employed, including quantitative analysis of data collected from randomly selected depots and qualitative interviews with maintenance staff. Statistical models were used to estimate yield improvements under different operational conditions. In one of the depots tested, a $Y = 0.5X + 10$ model showed an average improvement in vehicle readiness rate by 20% after implementing new maintenance protocols. The randomized field trial provided evidence for yield improvements through targeted interventions, which could be scaled up to enhance depot efficiency across Nigeria. Deploy the identified strategies, monitor their effectiveness over time, and consider expanding this methodology to other depots in Nigeria. Depot maintenance, yield improvement, randomized field trial, statistical modelling

Keywords: *Randomized Field Trial, Maintenance Depot Systems, Yield Assessment, Supply Chain Management, Geographic Information Systems, Quality Control, Logistics Optimization*

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