

Randomised Field Trial for Reliability Diagnostics in Uganda's Transport Maintenance Depot Systems

A Policy Analysis

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ABSTRACT

Background: Transport infrastructure maintenance in sub-Saharan Africa is often hampered by inefficient depot systems, leading to unreliable service and accelerated asset degradation. Current policy evaluations typically rely on observational data, which lack the rigour to establish causal effects of systemic interventions on operational reliability.

Purpose and objectives: This policy analysis evaluates a novel methodological approach for diagnosing reliability in transport maintenance depots. Its primary objective is to assess the efficacy of a randomised field trial (RFT) in generating robust, causal evidence to inform maintenance policy.

Keywords: *Randomised controlled trial, Transport maintenance depots, Sub-Saharan Africa, Reliability engineering, Policy evaluation, Infrastructure management*

Article Highlights

- Stratified randomised trial across regional transport depots in Uganda
- 22% increase in MTBF for intervention group versus control (95% CI: 15% to 29%)
- Procedural standardisation cited as key mechanism for reliability improvement
- Advocates for integrating randomised pilots into policy formulation cycles

Methodological Note

Impact estimated via difference-in-differences model with robust standard errors clustered at depot level.

This analysis presents a novel application of experimental methods to infrastructure policy.

ABSTRACT-ONLY PUBLICATION

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