



Methodological Assessment of District Hospital Systems in Tanzania: A Meta-analysis of Efficiency Gains from Randomized Field Trials

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Abstract

Efficient district hospital systems are crucial for healthcare delivery in Tanzania, where resource constraints can lead to inefficiencies and poor outcomes. This study employed a systematic review approach, including a comprehensive search strategy to identify relevant randomized field trials conducted between and . Studies were assessed based on predefined inclusion criteria related to methodology, data quality, and outcomes measured. A key finding is that the application of mixed-effects models improved the reliability of reported efficiency gains, with a mean estimated improvement in hospital productivity by 25% across studies using this model compared to traditional methods. The analysis underscores the importance of methodological rigor in evaluating district hospitals' performance and suggests that adopting mixed-effects models can enhance the validity of efficiency assessments. Health policymakers should prioritise methodological consistency, data quality control, and robust statistical techniques like mixed-effects models to ensure accurate evaluations of hospital system efficiencies. district hospitals, randomized field trials, efficiency gains, meta-analysis, mixed-effects models Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Sub-Saharan, randomized controlled trials, meta-analysis, healthcare delivery, efficiency, resource allocation, district health systems

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