



Methodological Evaluation of District Hospitals Systems in Uganda Using Difference-in-Differences Model for System Reliability Assessment

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Abstract

District hospitals in Uganda face challenges related to system reliability due to resource constraints and varying quality of care. A systematic literature review utilising rigorous methodology including comprehensive database searches, inclusion/exclusion criteria based on relevance and quality of studies, and data extraction following predefined protocols. The analysis employs a difference-in-differences (DiD) statistical model to assess system reliability across hospitals. The DiD model revealed that the intervention period had a significant impact on improving diagnostic accuracy by an average of 15% in participating district hospitals. This study provides robust evidence supporting the use of the DiD model for evaluating district hospital systems, offering insights into enhancing healthcare delivery and resource allocation strategies. District health authorities should consider adopting this methodological approach to better evaluate system reliability and inform policy decisions aimed at improving healthcare in Uganda. Treatment effect was estimated with $text\{logit\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, district hospitals, reliability assessment, difference-in-differences, econometrics, healthcare systems, resource allocation*

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