



Methodological Assessment of District Hospitals' Operational Efficiency in Uganda Using Panel Data Analysis

Nakibinge Namugijja¹, Kabokoza Okello^{2,3}, Nyakwanda Mukasa⁴, Semedi Mubiru^{1,5}

¹ Makerere University Business School (MUBS)

² Department of Clinical Research, Medical Research Council (MRC)/UVRI and LSHTM Uganda Research Unit

³ Department of Epidemiology, Makerere University Business School (MUBS)

⁴ Department of Public Health, National Agricultural Research Organisation (NARO)

⁵ Department of Clinical Research, National Agricultural Research Organisation (NARO)

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Correspondence: nnamugijja@gmail.com

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Author notes

Nakibinge Namugijja is affiliated with Makerere University Business School (MUBS) and focuses on Medicine research in Africa.

Kabokoza Okello is affiliated with Department of Clinical Research, Medical Research Council (MRC)/UVRI and LSHTM Uganda Research Unit and focuses on Medicine research in Africa.

Nyakwanda Mukasa is affiliated with Department of Public Health, National Agricultural Research Organisation (NARO) and focuses on Medicine research in Africa.

Semedi Mubiru is affiliated with Makerere University Business School (MUBS) and focuses on Medicine research in Africa.

Abstract

District hospitals in Uganda play a crucial role in healthcare delivery but face operational challenges that affect service quality and efficiency. Panel data analysis will be employed to evaluate the performance of district hospitals over time, accounting for both fixed and random effects. The study will use a generalized method of moments (GMM) estimator with robust standard errors to account for potential omitted variable bias. The panel-data estimation reveals significant variation in operational efficiency across districts, indicating that some hospitals are more effective at resource utilization compared to others. This study underscores the need for targeted interventions aimed at enhancing operational efficiencies in district hospitals, particularly those with lower performance indices. District health authorities should prioritise investments in human resources training and infrastructure improvements, alongside ongoing monitoring of hospital efficiency metrics. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^* p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Sub-Saharan, African, Panel, data, Analysis, Econometrics, Hospital, Systems, Efficiency

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