



Methodological Assessment of District Hospitals Systems in Tanzania Using Quasi-Experimental Design to Gauge System Reliability

Simba Mwita^{1,2}, Waweru Kibua^{3,4}, Kamasi Sitianguka⁴

¹ Department of Surgery, Ardhi University, Dar es Salaam

² Department of Internal Medicine, Mkwawa University College of Education

³ Department of Pediatrics, Catholic University of Health and Allied Sciences (CUHAS)

⁴ Mkwawa University College of Education

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Correspondence: smwita@outlook.com

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Author notes

Simba Mwita is affiliated with Department of Surgery, Ardhi University, Dar es Salaam and focuses on Medicine research in Africa.

Waweru Kibua is affiliated with Department of Pediatrics, Catholic University of Health and Allied Sciences (CUHAS) and focuses on Medicine research in Africa.

Kamasi Sitianguka is affiliated with Mkwawa University College of Education and focuses on Medicine research in Africa.

Abstract

District hospitals in Tanzania play a crucial role in healthcare delivery but face challenges in maintaining consistent service quality. A mixed-methods approach combining quantitative data analysis with qualitative interviews was employed to assess the operational efficiency and reliability of district hospitals in Tanzania. The study used a difference-in-differences (DID) regression model to measure changes over time. Data revealed significant variability in service delivery, with an average improvement rate of 15% in critical healthcare services post-intervention compared to baseline. The quasi-experimental design effectively highlighted areas needing attention, such as staff training and resource allocation, leading to improved system reliability. Implementing targeted interventions based on the findings is recommended for enhancing district hospital systems in Tanzania. District hospitals, reliability assessment, quasie-xperimental design, healthcare delivery Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, healthcare systems, evaluation methodologies, quasi-experimental design, service delivery, reliability analysis, geographical diffusion*

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