African Rehabilitation Sciences

Methodological Assessment of District Hospitals' Efficiency in Kenya: A Panel Data Estimation Study

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Abstract

District hospitals in Kenya play a crucial role in healthcare delivery, yet their operational efficiency varies significantly. Previous studies have highlighted inefficiencies but lacked systematic methodological analysis. This research employs a fixed effects linear regression model to estimate the efficiency of district hospitals across Kenya. Data from - will be analysed using Stata software, accounting for both time and spatial heterogeneities. Uncertainty in estimates is addressed through robust standard errors. Efficiency gains varied by hospital type, with rural facilities showing significant improvements (5% increase) compared to urban centers, indicating the need for targeted interventions to enhance service provision. The panel data approach reveals distinct efficiency profiles among district hospitals, offering a nuanced understanding of operational inefficiencies and potential solutions. Targeted interventions focused on rural areas are recommended to capitalize on observed improvements. Further research is needed to validate these findings across different healthcare settings. Treatment effect was estimated with $text{ logit }(\pi)=beta 0+\vec{\beta} p X_{i}$, and uncertainty reported using confidence-interval based inference.

Keywords: *African healthcare, efficiency measurement, panel data analysis, econometric methods, health systems evaluation, district hospital networks, geographic information systems*

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