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Methodological Evaluation of District Hospitals Systems in Ghana Using Panel Data for System Reliability Assessment

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Abstract

District hospitals in Ghana face challenges related to resource allocation and system reliability, which can impact patient care quality. This study employs a mixed-methods approach with quantitative analysis of panel data from five districts. A generalized linear model (GLM) is used to estimate system reliability, accounting for potential confounders such as patient volume and socioeconomic factors. The GLM revealed that the proportion of hospitals achieving optimal service levels was 35%, indicating significant variability in system performance across different districts. The analysis highlights disparities in resource management and operational efficiency among district hospitals, necessitating targeted interventions to enhance reliability and patient care outcomes. District health authorities should prioritise infrastructure development, staff training, and standardised data collection practices to improve system reliability and service quality. district hospitals, Ghana, panel data, system reliability, generalized linear model Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \vec{\beta}\ p\ X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *District hospitals, Ghana, Methodology, System reliability, Panel data, Quantitative methods, Qualitative methods*

ABSTRACT-ONLY PUBLICATION

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