



Methodological Evaluation of District Hospitals Systems in Ghana: Multilevel Regression Analysis for Measuring Adoption Rates

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Abstract

District hospitals in Ghana play a critical role in healthcare delivery, yet their operational efficiency varies significantly. A mixed-methods approach will be employed, including surveys and case studies. Multilevel regression analysis with robust standard errors will be used for data modelling. District hospitals in northern Ghana have a higher adoption rate of electronic health records (EHR) compared to southern regions, indicating geographical disparities. The multilevel regression model reveals significant differences in EHR adoption rates among districts, suggesting the need for targeted interventions. Investment should be prioritised in northern district hospitals to improve healthcare technology infrastructure and training programmes. Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, African, Healthcare, Systems, Ethnicity, Socioeconomic, Qualitative, Quantitative*

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