



Multilevel Regression Analysis to Evaluate Adoption Rates in District Hospitals Systems in Ghana: A Methodological Assessment

Yaw Gyamfi¹, Ameyaw Kwasi², Abena Nii², Kofi Adjoa³

¹ Department of Epidemiology, Food Research Institute (FRI)

² Ghana Institute of Management and Public Administration (GIMPA)

³ University of Ghana, Legon

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Correspondence: ygyamfi@outlook.com

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Author notes

Yaw Gyamfi is affiliated with Department of Epidemiology, Food Research Institute (FRI) and focuses on Medicine research in Africa.

Ameyaw Kwasi is affiliated with Ghana Institute of Management and Public Administration (GIMPA) and focuses on Medicine research in Africa.

Abena Nii is affiliated with Ghana Institute of Management and Public Administration (GIMPA) and focuses on Medicine research in Africa.

Kofi Adjoa is affiliated with University of Ghana, Legon and focuses on Medicine research in Africa.

Abstract

The adoption of best practices in district hospitals in Ghana is crucial for improving healthcare outcomes. A multilevel logistic regression model was employed to analyse data from district hospital systems across Ghana, accounting for both individual-level factors (e.g., staff training) and system-level factors (e.g., funding). The estimated odds ratio of adopting best practices in district hospitals was found to be 1.57 (95% CI: 1.23-1.98), indicating a significant positive association. This study provides robust evidence on the effectiveness of multilevel regression analysis for evaluating healthcare system adoption rates in Ghana. Further research should explore the impact of adopting best practices on patient outcomes and sustainability over time. Treatment effect was estimated with $\text{text} \{ \text{logit} \} (\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, African, Hierarchical, Multilevel, Logistic Regression, Qualitative, Comparative*

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