Bayesian Hierarchical Model for Measuring Adoption Rates in Nigerian District Hospitals Systems

Felix Osita Udoh[1]

[1] Department of Pediatrics, University of Nigeria, Nsukka

Author notes

Felix Osita Udoh is affiliated with Department of Pediatrics, University of Nigeria, Nsukka and focuses on Medicine research in Africa.

Abstract

Adoption rates of new healthcare technologies in Nigerian district hospitals are often underreported and misinterpreted due to variability across different facilities. A Bayesian hierarchical model was constructed to account for both facility-specific and system-level factors influencing technology adoption. The model incorporates uncertainty through robust standard errors and credible intervals. The model estimated an average adoption rate of 45% across all district hospitals, with significant variability between urban and rural facilities (urban: 60%, rural: 30%). The Bayesian hierarchical model provides a nuanced understanding of technology adoption dynamics in Nigerian hospital systems. Policy makers should consider both facility-specific and system-level interventions to enhance technology uptake across different geographic regions. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\, p\, X_i$, and uncertainty reported using confidence-interval based inference.

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ REQUEST FULL PAPER

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge