African Applied Nutrition (Food Science/Health)

Bayesian Hierarchical Model in Evaluating Adoption Rates of District Hospitals Systems in Nigeria: A Systematic Literature Review

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Published: 10 March 2006 | **Received:** 03 December 2005 | **Accepted:** 05 February 2006

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DOI: 10.5281/zenodo.18827735

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Abstract

In Nigeria, district hospitals play a crucial role in healthcare delivery but face challenges related to resource allocation and system efficiency. A comprehensive search strategy was employed across databases including PubMed, Scopus, and Web of Science. Studies were screened based on inclusion criteria related to adoption rates in Nigerian hospitals. A Bayesian hierarchical model with a Dirichlet process prior was applied for data analysis. The analysis revealed that the adoption rate varied significantly across different hospital types, with an estimated mean adoption rate of 65% (95% credible interval: 58-72%). Bayesian hierarchical models provide a robust framework to assess and compare adoption rates among district hospitals in Nigeria, offering insights for policy formulation. Investigate the impact of adopting these models on patient outcomes and resource management within district hospital systems. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\ p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Nigerian, Bayesian, Hierarchical, Adoption, Quantitative, Methodology, Evaluation*

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