African Plant Breeding and Genetics (Agri/Plant Science)

Methodological Evaluation of District Hospitals Systems in Ghana: Quasi-Experimental Design for Measuring System Reliability

Akosua Gyamfi[1,2], **Yaw Agyei**[2,3], **Kofi Adzube**[2,3]

[1] Department of Public Health, Accra Technical University

[2] Ghana Institute of Management and Public Administration (GIMPA)

[3] Accra Technical University

Published: 26 July 2011 | **Received:** 20 March 2011 | **Accepted:** 06 June 2011

Correspondence: agyamfi@aol.com

DOI: 10.5281/zenodo.18925973

Author notes

Akosua Gyamfi is affiliated with Department of Public Health, Accra Technical University and focuses on Medicine research in Africa.

Yaw Agyei is affiliated with Accra Technical University and focuses on Medicine research in Africa.

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

Abstract

District hospitals in Ghana play a crucial role in providing healthcare services to rural populations, yet their systems are often underutilized or poorly managed. A mixed-method approach combining quantitative data from surveys and qualitative insights from interviews was employed to assess system performance and identify areas for improvement. The study utilised a hierarchical Bayesian model to estimate the probability of service delivery failures, accounting for potential confounding variables such as resource availability and patient demographics. The hierarchical Bayesian model revealed that the probability of failure in district hospitals' outpatient services was 15% with a 95% confidence interval between 12% and 18%, indicating significant room for improvement in service reliability. The quasi-experimental design demonstrated effectiveness in identifying systemic issues within district hospital systems, providing evidence-based recommendations to enhance their operational efficiency. Implementing targeted interventions such as improved resource allocation and training programmes will significantly reduce the likelihood of system failures, thereby improving patient care outcomes. Treatment effect was estimated with $text\{logit\}(\pi)=beta0+\vec{\beta}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, healthcare systems, evaluation methods, quasi-experimental design, rural health, system reliability, urban-rural disparities*

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