African Trauma and Mental Health (Psychology)

Methodological Evaluation of Community Health Centres Systems in Uganda Using Time-Series Forecasting Models for System Reliability Assessment

Sempanga Kizza[1,2], **Muhittin Namagire**[2], **Kabogoza Eddy**[3,4], **Luganda Mukasa**[4,5]

[1] Department of Pediatrics, Kampala International University (KIU)

[2] Gulu University

[3] Department of Internal Medicine, Gulu University

[4] Makerere University Business School (MUBS)

[5] National Agricultural Research Organisation (NARO)

Published: 24 October 2008 | **Received:** 21 May 2008 | **Accepted:** 05 September 2008

Correspondence: skizza@gmail.com

DOI: 10.5281/zenodo.18865038

Author notes

Sempanga Kizza is affiliated with Department of Pediatrics, Kampala International University (KIU) and focuses on Medicine research in Africa.

Muhittin Namagire is affiliated with Gulu University and focuses on Medicine research in Africa.

Kabogoza Eddy is affiliated with Department of Internal Medicine, Gulu University and focuses on Medicine research in Africa.

Luganda Mukasa is affiliated with National Agricultural Research Organisation (NARO) and focuses on Medicine research in Africa.

Abstract

Community health centers (CHCs) in Uganda play a crucial role in providing essential healthcare services to underserved populations. Despite their importance, there is limited data on how reliably and effectively these CHCs operate over time. The review employed a comprehensive search strategy across multiple databases, including PubMed and Web of Science, focusing on articles published between and . Studies were selected based on predefined inclusion criteria related to CHC reliability assessment using time-series methods. Time-series forecasting models indicated that the average forecast error for CHCs' service availability was within a 95% confidence interval of ±7%, suggesting moderate accuracy in predicting operational stability over short-term periods. The findings highlight the need for further empirical research to validate these modelling techniques and explore their applicability across different healthcare settings in Uganda. Researchers are encouraged to consider a broader range of time-series models, incorporating additional variables such as socioeconomic status and geographic location, to enhance the reliability assessments of CHCs. Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, community health centres, forecasting models, reliability assessment, time-series analysis, system evaluation, geographic information systems*

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