



# Methodological Evaluation of Community Health Centres Systems in Uganda Using Panel Data for Yield Improvement Analysis

Elisabeth Akayi<sup>1</sup>, Moses Okello<sup>2</sup>, Wilfred Mugisa<sup>3</sup>

<sup>1</sup> Department of Internal Medicine, Busitema University

<sup>2</sup> Medical Research Council (MRC)/UVRI and LSHTM Uganda Research Unit

<sup>3</sup> Department of Pediatrics, Busitema University

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**Correspondence:** [eakayi@gmail.com](mailto:eakayi@gmail.com)

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## Author notes

*Elisabeth Akayi is affiliated with Department of Internal Medicine, Busitema University and focuses on Medicine research in Africa.*

*Moses Okello is affiliated with Medical Research Council (MRC)/UVRI and LSHTM Uganda Research Unit and focuses on Medicine research in Africa.*

*Wilfred Mugisa is affiliated with Department of Pediatrics, Busitema University and focuses on Medicine research in Africa.*

## Abstract

Community health centres in Uganda face challenges in service delivery and efficiency. Panel data from multiple community health centres were analysed using a fixed effects regression model to measure yield improvements over time. Data show that patient wait times decreased by 15% after implementing new appointment scheduling systems, with an estimated effect size of -0.15 (95% CI: -0.23 to -0.06). The fixed effects model highlighted significant yield improvements in service efficiency. Immediate implementation of the new appointment scheduling system across all health centres is recommended for further yield improvement studies. Community Health Centres, Yield Improvement, Fixed Effects Regression, Appointment Scheduling 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:** African healthcare, community health centres, fixed effects model, panel data, yield analysis, geographical econometrics, spatial econometrics

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