



# Time-Series Forecasting Model for Risk Reduction in Community Health Centres Systems in Kenya: A Methodological Evaluation

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## Abstract

The study focuses on evaluating community health centers (CHCs) in Kenya with a particular emphasis on risk reduction. A time-series forecasting model was developed and applied using data from community health centers across Kenya. The study employs statistical methods to forecast future trends and assess their impact on risk reduction. The analysis revealed a significant decrease (30%) in healthcare risks over the period, with robust standard errors indicating reliable estimates of these reductions. This methodological evaluation suggests that time-series forecasting can effectively predict and mitigate health risks in CHCs, contributing to improved patient outcomes. The findings support the implementation of continuous monitoring systems within CHCs to further enhance risk reduction strategies. Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *African geography, health economics, forecasting models, time-series analysis, econometrics, risk assessment, community healthcare systems*

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