



# Methodological Evaluation and Time-Series Forecasting of Rural Clinics in Senegal: A Model for Measuring Clinical Outcomes

Mamadou Sall<sup>1</sup>

<sup>1</sup> Council for the Development of Social Science Research in Africa (CODESRIA), Dakar

**Published:** 04 June 2013 | **Received:** 11 January 2013 | **Accepted:** 02 May 2013

**Correspondence:** [msall@aol.com](mailto:msall@aol.com)

**DOI:** [10.5281/zenodo.18986922](https://doi.org/10.5281/zenodo.18986922)

## Author notes

*Mamadou Sall is affiliated with Council for the Development of Social Science Research in Africa (CODESRIA), Dakar and focuses on Medicine research in Africa.*

## Abstract

Rural clinics in Senegal face challenges in delivering consistent clinical outcomes due to resource limitations and varying service quality. The study will employ mixed-methods including surveys, observational data collection, and statistical modelling. A time-series analysis with ARIMA (AutoRegressive Integrated Moving Average) models will be applied to forecast future clinical performance. A preliminary ARIMA model suggests a positive trend in patient recovery rates over the past five years, but variability remains high across different clinics. This study provides foundational insights for enhancing rural clinic effectiveness and supports targeted interventions based on identified trends. Implementing continuous quality improvement programmes and leveraging digital health tools can mitigate observed variations. Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Sub-Saharan, Mixed-Methods, Evaluation, Forecasting, Time-Series, Spatial Analysis, 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](mailto: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](http://app.parj.africa)



Scan to visit [app.parj.africa](http://app.parj.africa)

**Open Access Scholarship from PARJ**

Empowering African Research | Advancing Global Knowledge