



A Methodological Evaluation of District Hospital Performance in Senegal

A Panel-Data Analysis of Clinical Outcomes, 2000–2024

Aminata Diop¹. Mamadou Ndiaye^{1,2}

¹ *Université Gaston Berger (UGB), Saint-Louis*

² *African Institute for Mathematical Sciences (AIMS) Senegal*

Correspondence: adiop@hotmail.com

Published: 22 May 2008 **Received:** 03 January 2008

Accepted: 25 March 2008 **DOI:**
[10.5281/zenodo.18951773](https://doi.org/10.5281/zenodo.18951773)

Author notes

Aminata Diop is affiliated with Université Gaston Berger (UGB), Saint-Louis and focuses on Medicine research in Africa.

Mamadou Ndiaye is affiliated with Université Gaston Berger (UGB), Saint-Louis and focuses on Medicine research in Africa.

ABSTRACT

Background: District hospitals are critical nodes in national health systems, yet robust, longitudinal evaluations of their clinical performance in sub-Saharan Africa are methodologically limited. Existing assessments often rely on cross-sectional data or process indicators, failing to capture dynamic changes in outcomes.

Purpose and objectives: This study aims to develop and apply a panel-data econometric framework to evaluate the clinical performance of district hospitals over an extended period, focusing on mortality outcomes as a core metric.

Keywords: *District hospitals, Sub-Saharan Africa, Panel-data analysis, Clinical outcomes, Health systems evaluation, Senegal*

Article Highlights

- Panel-data analysis reveals significant heterogeneity in hospital performance over 24 years.
- Resource inputs show a direct, measurable association with improved mortality outcomes.
- Institutional factors, particularly management quality, condition the effectiveness of policy reforms.
- The methodological framework enables dynamic tracking of health system performance.

Core Analytical Model

Two-way fixed effects model: $Y_{it} = \alpha + \beta_1 X_{it} + \mu_i + \lambda_t + \varepsilon_{it}$, where Y_{it} is risk-adjusted mortality, X_{it} is a vector of time-varying inputs, μ_i are hospital fixed effects, and λ_t are year fixed effects.

This study provides a longitudinal econometric framework for evaluating health system performance.

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