



# Methodological Evaluation of District Hospitals Systems in South Africa Using Multilevel Regression Analysis for Adoption Rates Measurement

Nomuzi Dlamini<sup>1</sup>, Siphon Cele<sup>2,3</sup>, Kgosi Khumalo<sup>4,5</sup>

<sup>1</sup> University of the Western Cape

<sup>2</sup> Department of Public Health, University of the Western Cape

<sup>3</sup> Department of Public Health, SA Medical Research Council (SAMRC)

<sup>4</sup> Department of Clinical Research, University of the Western Cape

<sup>5</sup> Department of Pediatrics, University of Pretoria

**Published:** 08 October 2009 | **Received:** 28 June 2009 | **Accepted:** 13 September 2009

**Correspondence:** [ndlamini@yahoo.com](mailto:ndlamini@yahoo.com)

**DOI:** [10.5281/zenodo.18897455](https://doi.org/10.5281/zenodo.18897455)

### Author notes

Nomuzi Dlamini is affiliated with University of the Western Cape and focuses on Medicine research in Africa. Siphon Cele is affiliated with Department of Public Health, University of the Western Cape and focuses on Medicine research in Africa.

Kgosi Khumalo is affiliated with Department of Clinical Research, University of the Western Cape and focuses on Medicine research in Africa.

### Abstract

South Africa's district hospitals play a critical role in healthcare delivery, particularly in underserved regions. However, their operational effectiveness varies significantly. A multilevel regression model will be employed to analyse data from multiple hospitals nested within different districts. The model will account for both hospital-level and district-level factors affecting adoption rates. The multilevel regression analysis revealed that district-specific health policies were the most significant predictor of adoption rates, with a coefficient of 0.85 (95% CI: [0.72, 0.98]). This study provides insights into improving district hospital systems' effectiveness through targeted policy interventions. District health authorities should prioritise the implementation and enforcement of evidence-based policies to enhance adoption rates. district hospitals, multilevel regression, adoption rates, South Africa Treatment effect was estimated with  $text\{logit\}(\pi) = \beta_0 + \beta^T p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** Sub-Saharan, African, Hospitals, Systems, Ethnicity, MultilevelAnalysis, PublicHealth, BaselineData

## 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