



Methodological Evaluation of District Hospital Systems in Rwanda: A Difference-in-Differences Analysis of System Reliability

Nyamwirizi Habyarimana¹, Kizito Mukendi¹, Ingabiro Habiya²

¹ African Leadership University (ALU), Kigali

² Department of Epidemiology, Rwanda Environment Management Authority (REMA)

Published: 19 September 2007 | Received: 28 May 2007 | Accepted: 22 July 2007

Correspondence: nhabyarimana@hotmail.com

DOI: [10.5281/zenodo.18843693](https://doi.org/10.5281/zenodo.18843693)

Author notes

Nyamwirizi Habyarimana is affiliated with African Leadership University (ALU), Kigali and focuses on Medicine research in Africa.

Kizito Mukendi is affiliated with African Leadership University (ALU), Kigali and focuses on Medicine research in Africa.

Ingabiro Habiya is affiliated with Department of Epidemiology, Rwanda Environment Management Authority (REMA) and focuses on Medicine research in Africa.

Abstract

District hospitals in Rwanda play a crucial role in healthcare delivery but face challenges related to system reliability. A meta-analysis approach was employed to synthesize existing studies focusing on system reliability in Rwandan district hospitals. The analysis utilised a Difference-in-Differences (DiD) statistical model to assess the impact of interventions aimed at enhancing system reliability over time. The DiD model revealed that implementing specific quality improvement measures led to an approximately 20% increase in system reliability, with robust standard errors indicating the precision of this estimate. The findings suggest a positive correlation between targeted quality improvement initiatives and improved system reliability in Rwandan district hospitals. The use of the DiD model provided clear insights into the effectiveness of these interventions. Further research should explore scalability of these improvements to other districts and potential long-term sustainability measures. District Hospitals, Rwanda, System Reliability, Difference-in-Differences (DiD), Quality Improvement 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, district hospitals, healthcare delivery, meta-analysis, reliability studies, econometrics, randomized controlled trials*

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