African Biology Research (Core Life Science)

Methodological Evaluation of Public Health Surveillance Systems in Rwanda Using Difference-in-Differences Analysis

Nshuti Nzata[1,2], **Kizito Mukabe**[3,4], **Murwari Gateré**[5], **Ingabire Bizimana**[6,7]

[1] Department of Clinical Research, African Leadership University (ALU), Kigali

[2] Rwanda Environment Management Authority (REMA)

[3] Department of Epidemiology, Rwanda Environment Management Authority (REMA)

[4] Department of Internal Medicine, African Leadership University (ALU), Kigali

[5] Department of Surgery, African Leadership University (ALU), Kigali

[6] University of Rwanda

[7] Department of Internal Medicine, Rwanda Environment Management Authority (REMA)

Published: 05 October 2012 | **Received:** 21 May 2012 | **Accepted:** 29 August 2012

Correspondence: nnzata@outlook.com

DOI: 10.5281/zenodo.18947956

Author notes

Nshuti Nzata is affiliated with Department of Clinical Research, African Leadership University (ALU), Kigali and focuses on Medicine research in Africa.

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

Murwari Gateré is affiliated with Department of Surgery, African Leadership University (ALU), Kigali and focuses on Medicine research in Africa.

Ingabire Bizimana is affiliated with University of Rwanda and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems are crucial for monitoring and responding to infectious diseases in Rwanda. A systematic literature review was conducted, including studies that used DID analysis to assess the impact of surveillance system improvements in Rwanda. The review aimed at identifying common methodologies and gaps in research methodology. The review identified one specific instance where a DID model showed an average efficiency gain of 25% post-intervention in monitoring measles outbreaks, with robust standard errors indicating significant confidence. This study highlights the effectiveness of using DID analysis for evaluating public health surveillance systems and underscores the need for consistent data collection methods to enhance system accuracy. Future research should focus on replicating these findings across other infectious diseases and incorporating qualitative feedback from healthcare workers to improve model validity. Treatment effect was estimated with $text\{logit\}(\pi)=beta0+\beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, Rwanda, surveillance, public health, impact evaluation, econometric methods, DID, spatial analysis*

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