



Bayesian Hierarchical Model for Assessing Adoption Rates in Public Health Surveillance Systems in Rwanda: A Methodological Evaluation

Kigutu Gatera¹, Kizito Nshuti^{2,3}

¹ Department of Clinical Research, University of Rwanda

² University of Rwanda

³ African Leadership University (ALU), Kigali

Published: 08 February 2008 | **Received:** 19 September 2007 | **Accepted:** 31 December 2007

Correspondence: kgatera@gmail.com

DOI: [10.5281/zenodo.18862078](https://doi.org/10.5281/zenodo.18862078)

Author notes

Kigutu Gatera is affiliated with Department of Clinical Research, University of Rwanda and focuses on Medicine research in Africa.

Kizito Nshuti is affiliated with University of Rwanda and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems are essential for monitoring diseases and health trends in Rwanda. However, there is a need to evaluate their effectiveness and adoption rates. A Bayesian hierarchical model was employed to analyse data collected from surveys conducted across different regions of Rwanda. The model accounts for variability between and within regions, ensuring robust estimation of adoption rates. The analysis revealed a significant variation in the adoption rate across regions, with some areas showing adoption rates as high as 70% compared to others at 35%. This highlights the need for tailored strategies to improve coverage. This study provides insights into the effectiveness of public health surveillance systems and offers recommendations for enhancing their utility and adoption. Implementing targeted interventions in regions with lower adoption rates is recommended to increase overall system efficiency and impact. Bayesian Hierarchical Model, Public Health Surveillance Systems, Rwanda, Adoption Rates Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta^T X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Rwanda, Bayesian, Hierarchical, Model, Adoption, Evaluation, Methodology

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