African Applied Molecular Biology (Applied Science)

Bayesian Hierarchical Model for Evaluating Cost-Effectiveness of Public Health Surveillance Systems in Kenya,

Kioni Ochieng[1], **Mutua Gitonga**[1], **Mwangi Njoroge**[2]

[1] University of Nairobi

[2] Department of Epidemiology, Kenyatta University

Published: 25 February 2005 | **Received:** 16 October 2004 | **Accepted:** 01 January 2005

Correspondence: kochieng@yahoo.com

DOI: 10.5281/zenodo.18815339

Author notes

Kioni Ochieng is affiliated with University of Nairobi and focuses on Medicine research in Africa.

Mutua Gitonga is affiliated with University of Nairobi and focuses on Medicine research in Africa.

Mwangi Njoroge is affiliated with Department of Epidemiology, Kenyatta University and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems are crucial for monitoring infectious diseases in Kenya, where they play a vital role in outbreak detection and response. A Bayesian hierarchical model was developed to assess the economic impact of public health surveillance systems on disease control, incorporating data from multiple regions within Kenya. The model estimated that effective surveillance reduced healthcare costs by approximately 20 *per capita annually , with robust standard errors indicating a reliable estimate . Bayesian hierarchical modelli*r \text{logit}(pi)=\beta0+\beta^\top X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, Bayesian hierarchical models, Cost-effectiveness analysis, Infectious disease surveillance, Methodology, Public health systems, Regression 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