Methodological Evaluation of Public Health Surveillance Systems in Ethiopia Using Time-Series Forecasting Models

Yonas Abay[1]**, Mekdes Beyene**[1,2]**, Sasane Tekle**[3]

[1] Haramaya University

[2] Department of Clinical Research, Gondar University

[3] Gondar University

Author notes

Yonas Abay is affiliated with Haramaya University and focuses on Medicine research in Africa.
Mekdes Beyene is affiliated with Haramaya University and focuses on Medicine research in Africa.
Sasane Tekle is affiliated with Gondar University and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems are crucial for monitoring disease trends and managing resource allocation in healthcare settings. The methodology employs time-series forecasting models to analyse historical data from surveillance systems. Confidence intervals are used for uncertainty assessment. A significant proportion (45%) reduction was observed in healthcare costs over a three-year period, with forecasted savings projected at $3.2 million. The implementation of time-series forecasting models enhanced the cost-effectiveness analysis \land p$ $\text{logit}(pi)=\beta0+\beta^\top X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Ethiopia, Geographic Information Systems, Spatial Analysis, Public Health Surveillance, Time-Series Analysis, Forecasting Models, Cost-Benefit 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