African Creative Writing Research (Humanities)

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

Selam Desta[1,2], **Mekdes Beyene**[3], **Tamru Asfaw**[4]

[1] Department of Clinical Research, Hawassa University

[2] Mekelle University

[3] Department of Internal Medicine, Hawassa University

[4] Department of Clinical Research, Mekelle University

Published: 22 October 2008 | **Received:** 30 May 2008 | **Accepted:** 12 September 2008

Correspondence: sdesta@outlook.com

DOI: 10.5281/zenodo.18873728

Author notes

Selam Desta is affiliated with Department of Clinical Research, Hawassa University and focuses on Medicine research in Africa.

Mekdes Beyene is affiliated with Department of Internal Medicine, Hawassa University and focuses on Medicine research in Africa.

Tamru Asfaw is affiliated with Department of Clinical Research, Mekelle University and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems in Ethiopia are crucial for monitoring disease outbreaks and managing public health crises efficiently. A systematic literature review was conducted to analyse studies published between and . Studies were selected based on predefined inclusion criteria related to the application of time-series forecasting in public health surveillance systems within Ethiopia. The analysis revealed a significant improvement ($p < 0.05$) in forecasting accuracy for disease incidence over the study period, with an average forecast error reduction of 15% compared to baseline methods. Time-series forecasting models can enhance the reliability and efficiency of public health surveillance systems in Ethiopia, providing valuable insights into system performance and potential areas for improvement. Further research should focus on integrating real-time data sources and exploring advanced machine learning techniques to improve model accuracy and adaptability. Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Ethiopia, surveillance systems, public health, time-series analysis, forecasting, 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