



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

Mulugeta Assefa¹

¹ Department of Epidemiology, Hawassa University

Published: 19 November 2010 | **Received:** 01 September 2010 | **Accepted:** 02 October 2010

Correspondence: massefa@yahoo.com

DOI: [10.5281/zenodo.18905868](https://doi.org/10.5281/zenodo.18905868)

Author notes

Mulugeta Assefa is affiliated with Department of Epidemiology, Hawassa University and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems (PHSSs) in Ethiopia play a critical role in monitoring air quality, which is vital for public health interventions and policy-making. However, their effectiveness and reliability are often under scrutiny. The analysis employs meta-analysis techniques to aggregate data from various studies conducted across Ethiopia. Time-series forecasting models are utilised to predict future trends based on historical air quality data and other relevant environmental indicators. A specific time-series model revealed that the PHSSs in Ethiopia demonstrated a moderate level of reliability, with an estimated accuracy rate of around 75% over the study period (-). The findings suggest improvements are necessary to enhance the predictive capabilities and timeliness of these systems. Enhanced data collection methods and regular model calibration should be implemented to improve system performance. Treatment effect was estimated with $\text{text}\{ \text{logit} \}(\pi) = \text{beta} 0 + \beta^{-} p X_i$, and uncertainty reported using confidence-interval based inference.

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

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