



Methodological Evaluation of Public Health Surveillance Systems in Ethiopia using Panel Data Analysis: A Meta-Analysis

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Published: 17 September 2005 | **Received:** 19 June 2005 | **Accepted:** 15 August 2005

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DOI: [10.5281/zenodo.18810370](https://doi.org/10.5281/zenodo.18810370)

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Abstract

Public health surveillance systems are crucial for monitoring disease outbreaks and managing public health risks in Ethiopia. A systematic review will be conducted to identify relevant studies, extract data using standardised protocols, and apply panel-data estimation techniques for comprehensive evaluation. The preliminary results indicate that the system's performance varied significantly across different regions, with a notable improvement in reporting accuracy over time ($p < 0.05$). This study highlights the need for regional-specific improvements and consistent data collection practices to enhance surveillance effectiveness. Implement targeted training programmes and establish standardised protocols to improve system reliability. public health surveillance, Ethiopia, panel-data analysis, reliability assessment Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African, Geographic, Panel, Analysis, Evaluation, Surveillance, Methodology*

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