



Methodological Evaluation of Public Health Surveillance Systems in Ethiopia Using Panel Data for Reliability Assessment

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Abstract

Public health surveillance systems are crucial for monitoring infectious diseases in Ethiopia. However, their reliability varies across different regions and time periods. A systematic literature review was conducted, focusing on studies reporting public health surveillance activities in Ethiopia. Panel-data estimation techniques were employed to analyse the impact of various factors on surveillance reliability. The analysis revealed a significant variation ($p < 0.05$) in system reliability across different regions and years, with some areas showing lower than expected coverage rates. This study provides insights into the methodological challenges faced by public health surveillance systems in Ethiopia. Further research should focus on implementing standardised data collection methods to improve surveillance accuracy. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Ethiopia, Public Health Surveillance, Panel Data, Reliability Assessment, Systematic Review, Methodology, Epidemiology

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