



Public Health Surveillance System Adoption Rates in Ethiopia: A Panel Data Evaluation

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Abstract

Public health surveillance systems (PHSSs) play a crucial role in monitoring infectious diseases and public health emergencies in Ethiopia. Panel data estimation techniques were employed to analyse the dataset comprising regional health information systems (RHIS) data from to . The study utilised a fixed effects model to account for unobserved heterogeneity and robust standard errors were applied to quantify uncertainty in estimates. The analysis revealed that region-specific factors significantly influence PHSS adoption rates, with some regions showing higher adoption than others. For instance, urban areas had an adoption rate of 78% compared to rural areas at 65%. This study provides insights into the effectiveness and challenges faced by PHSSs in Ethiopia, highlighting the need for tailored interventions to improve coverage across different regions. Health policymakers should prioritise investments in infrastructure and training programmes to enhance the functionality of PHSSs in underserved rural areas. Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta^* p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Ethiopia, Geographic Information Systems, Public Health Surveillance, Time Series Analysis, Spatial Statistics, Panel Data Analysis, Logistic Regression

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