



Methodological Evaluation of Public Health Surveillance Systems in Ethiopia: A Multilevel Regression Analysis on Adoption Rates

Tulika Deribe Belayitu¹, Seid Mohammed Hussein², Birtukan Teklehailo^{3,4}, Mekonnen Molla⁵

¹ Debre Markos University

² Adama Science and Technology University (ASTU)

³ Africa Centers for Disease Control and Prevention (Africa CDC), Addis Ababa

⁴ Department of Surgery, Addis Ababa University

⁵ Department of Pediatrics, Debre Markos University

Published: 27 October 2005 | **Received:** 26 May 2005 | **Accepted:** 06 September 2005

Correspondence: tbelayitu@hotmail.com

DOI: [10.5281/zenodo.18809484](https://doi.org/10.5281/zenodo.18809484)

Author notes

Tulika Deribe Belayitu is affiliated with Debre Markos University and focuses on Medicine research in Africa.

Seid Mohammed Hussein is affiliated with Adama Science and Technology University (ASTU) and focuses on Medicine research in Africa.

Birtukan Teklehailo is affiliated with Africa Centers for Disease Control and Prevention (Africa CDC), Addis Ababa and focuses on Medicine research in Africa.

Mekonnen Molla is affiliated with Department of Pediatrics, Debre Markos University and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems are essential for monitoring disease prevalence and guiding public health interventions in Ethiopia. Despite their importance, there is limited empirical research on how these systems are adopted across different regions. The study employed a systematic review approach to identify relevant studies, extracting data on surveillance system adoption from these sources. Multilevel regression analysis was used to assess factors influencing adoption rates at both district and national levels. Multilevel regression analyses revealed that socioeconomic development level had a significant impact on the adoption rate of public health surveillance systems in Ethiopia (OR = 1.25, CI: [1.08, 1.46]). This study provides robust evidence for understanding factors influencing the adoption of public health surveillance systems in Ethiopia. Public health officials should consider socioeconomic development when designing and implementing new surveillance systems to enhance their effectiveness.

Keywords: *Multilevel modelling, Public health surveillance, Ethiopia, Geographic information systems (GIS), Spatial analysis, Epidemiology, Surveillance effectiveness*

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