



Methodological Evaluation of Community Health Centre Systems in Ethiopia Using Quasi-Experimental Design for Cost-Effectiveness Measurement

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Abstract

Community health centers (CHCs) play a critical role in healthcare delivery in Ethiopia, particularly in rural and underserved areas. A mixed-methods approach combining quantitative data analysis with qualitative insights was employed to assess the efficiency and effectiveness of CHCs in Ethiopia. Data from 20 CHCs showed an average reduction in healthcare costs by 15% without compromising on service quality, indicating a cost-effective model for sustainable health care delivery. The quasi-experimental design successfully demonstrated the feasibility and potential of community health centers as a cost-effective strategy for improving public health outcomes in Ethiopia. Further research should focus on replicating this model in other regions with similar healthcare challenges, emphasising sustainability and scalability. 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: Ethiopia, Community Health Centers, Quasi-Experimental Design, Cost-Effectiveness Analysis, Public Health Systems, Geographic Information Systems, Spatial Analysis

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