



# Methodological Evaluation of Community Health Centre Systems in Ethiopia: A Randomized Field Trial on Cost-Effectiveness

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## Abstract

Community health centres in Ethiopia face challenges in cost-effectiveness due to limited resources. A randomized field trial design was employed to assess the impact of various interventions on service delivery outcomes. Data were collected over six months from randomly selected centres in Ethiopia. The study found that an optimal combination of digital health tools and community engagement strategies reduced patient wait times by 20% compared to traditional methods, with a confidence interval for this reduction being (15%, 25%). The randomized field trial demonstrated the potential for cost-effective improvements in service delivery at community health centres. Implementing digital health solutions and fostering community participation should be prioritised to enhance operational efficiency. Treatment effect was estimated with  $\text{text}\{logit\}(\pi) = \beta_0 + \beta^T p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** Ethiopia, Geographic Medicine, Randomization, Cost-Benefit Analysis, Primary Healthcare, Intervention Studies, Health Systems Research

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