African Laser Physics (Pure Science)

Methodological Evaluation of Off-Grid Communities Systems in Ethiopia: A Randomized Field Trial

Mengistu Abraha[1,2], **Tadesse Yilma**[2], **Abay Desta**[3]

[1] Bahir Dar University

[2] Haramaya University

[3] Department of Interdisciplinary Studies, Jimma University

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Correspondence: mabraha@aol.com

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Author notes

Mengistu Abraha is affiliated with Bahir Dar University and focuses on Physics research in Africa.
Tadesse Yilma is affiliated with Haramaya University and focuses on Physics research in Africa.
Abay Desta is affiliated with Department of Interdisciplinary Studies, Jimma University and focuses on Physics research in Africa.

Abstract

This study addresses a current research gap in Physics concerning Methodological evaluation of off-grid communities systems in Ethiopia: randomized field trial for measuring clinical outcomes in Ethiopia. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A mixed-methods design was used, combining survey and interview data collected over the study period. The results establish bounded error under perturbation, a convergent estimation process under stated assumptions, and a stable link between the proposed metric and observed outcomes. The findings provide a reproducible analytical basis for subsequent theoretical and applied extensions. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. Methodological evaluation of off-grid communities systems in Ethiopia: randomized field trial for measuring clinical outcomes, Ethiopia, Africa, Physics, intervention study This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Geographic, Methodology, Off-grid, Community, Ethiopia, Randomized, Trial*

ABSTRACT-ONLY PUBLICATION

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