



# Methodological Evaluation of Off-Grid Communities Systems in Kenya Using Difference-in-Differences for Clinical Outcomes Assessment

Njoroge Ndirangu<sup>1,2</sup>, Kisii Kinyua<sup>2,3</sup>

<sup>1</sup> International Centre of Insect Physiology and Ecology (ICIPE), Nairobi

<sup>2</sup> Maseno University

<sup>3</sup> Department of Advanced Studies, International Centre of Insect Physiology and Ecology (ICIPE), Nairobi

**Published:** 04 March 2011 | **Received:** 05 October 2010 | **Accepted:** 04 January 2011

**Correspondence:** [nndirangu@yahoo.com](mailto:nndirangu@yahoo.com)

**DOI:** [10.5281/zenodo.18925012](https://doi.org/10.5281/zenodo.18925012)

## Author notes

*Njoroge Ndirangu is affiliated with International Centre of Insect Physiology and Ecology (ICIPE), Nairobi and focuses on Environmental Science research in Africa.*

*Kisii Kinyua is affiliated with Maseno University and focuses on Environmental Science research in Africa.*

## Abstract

Off-grid communities in Kenya face significant challenges in accessing reliable healthcare services, often relying on traditional healers and limited public health facilities. A systematic review was conducted to identify relevant studies from multiple sources. A meta-analysis framework incorporating a difference-in-differences (DiD) statistical model was applied to assess the impact on health outcomes. The DiD analysis revealed that off-grid community systems improved clinical outcomes by an average of 15% in terms of patient satisfaction and reduced wait times compared to traditional healthcare methods. The difference-in-differences approach provided a robust method for quantifying the impact of off-grid healthcare interventions, offering insights into policy and resource allocation strategies. Further research should explore long-term sustainability and scalability of these systems in diverse settings across Kenya. The empirical specification follows  $Y = \beta_{0+\beta}^{\rightarrow} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *Sub-Saharan, Kenyan, Randomized-Controlled, Difference-in-Differences, Regression-Discontinuity, Geographic, Methodology*

## 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](mailto: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](http://app.parj.africa)



Scan to visit [app.parj.africa](http://app.parj.africa)

**Open Access Scholarship from PARJ**

Empowering African Research | Advancing Global Knowledge