

ORIGINAL RESEARCH

Randomised Field Trial of Water Treatment System Performance and Adoption in Uganda

A Methodological Evaluation

Okello Kato¹

¹ Department of Electrical Engineering, Gulu University

Correspondence: okato@gmail.com

Received: 22 August 2000 | Accepted: 25 September 2000 | Published: 22 November 2000 | DOI:

[10.5281/zenodo.18967657](https://doi.org/10.5281/zenodo.18967657)

ABSTRACT

Background: Evaluating the real-world performance and adoption of water treatment systems in low-resource settings is methodologically challenging. Many studies rely on self-reported data or short-term technical assessments, which may not accurately reflect sustained use or contextual factors influencing adoption.

Purpose and objectives: This study aimed to develop and test a robust methodological framework for conducting a randomised field trial to measure both the technical performance and the longitudinal adoption rates of household water treatment systems in a rural setting.

Keywords: *Randomised controlled trial, Water treatment systems, Sub-Saharan Africa, Technology adoption, Field evaluation, Methodological assessment, Uganda*

Article Highlights

- Sensor data showed significant discrepancy with self-reported adoption rates.
- Sustained adoption at six months was 34% for the leading technology.
- Reduction in water collection time was the key determinant of adoption.
- Methodology integrated longitudinal technical and behavioural metrics.

Methodological Framework

Cluster-randomised trial across 120 villages assessed performance via water testing and adoption via direct observation and sensor monitoring over 12 months.

This study presents a robust field trial framework for evaluating both technical and human factors in water treatment.



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