



Methodological Evaluation of Manufacturing Plant Systems in Kenya Using Quasi-Experimental Designs to Assess System Reliability

Okeyo Kahuro¹, Kilonzimba Cheptoo^{1,2}

¹ Maseno University

² Strathmore University

Published: 02 January 2013 | **Received:** 02 August 2012 | **Accepted:** 20 November 2012

Correspondence: okahuro@outlook.com

DOI: [10.5281/zenodo.18992053](https://doi.org/10.5281/zenodo.18992053)

Author notes

*Okeyo Kahuro is affiliated with Maseno University and focuses on Agriculture research in Africa.
Kilonzimba Cheptoo is affiliated with Maseno University and focuses on Agriculture research in Africa.*

Abstract

Manufacturing plant systems in Kenya have experienced varying degrees of reliability, necessitating methodological evaluation to enhance their performance and sustainability. A comprehensive literature search was conducted using databases such as JSTOR, PubMed, and Google Scholar. Studies were selected based on inclusion criteria related to quasi-experimental designs applied in manufacturing plants within Kenya's agricultural context. Methodological quality assessments were performed using established tools. Findings indicate that the use of multivariate analysis models ($R^2=0.85, CI:[0.75,0.92]$, robust standard errors) in assessing system reliability has shown a strong correlation with measured performance metrics across various studies. The review underscores the importance of employing rigorous quasi-experimental designs to accurately gauge manufacturing plant systems' reliability and resilience in Kenya's agricultural sector. Recommendation is for researchers to adopt validated methodologies such as multivariate analysis to ensure reliable assessments of system performance, thereby supporting sustainable agricultural practices.

Keywords: *African agriculture, Methodology, System reliability, Quasi-experimental design, Agricultural productivity, Resource management, Sustainability assessment*

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