



Methodological Evaluation of Manufacturing Systems in Kenyan Plants: A Randomized Field Trial

Wycliffe Matiok¹, Agnes Wambugu², Oscar Kibogo^{1,3}

¹ Kenyatta University

² Egerton University

³ Department of Sustainable Systems, Egerton University

Published: 13 January 2009 | **Received:** 17 October 2008 | **Accepted:** 07 December 2008

Correspondence: wmatiok@outlook.com

DOI: [10.5281/zenodo.18887870](https://doi.org/10.5281/zenodo.18887870)

Author notes

Wycliffe Matiok is affiliated with Kenyatta University and focuses on Engineering research in Africa.

Agnes Wambugu is affiliated with Egerton University and focuses on Engineering research in Africa.

Oscar Kibogo is affiliated with Kenyatta University and focuses on Engineering research in Africa.

Abstract

Manufacturing systems in Kenyan plants are crucial for economic growth and productivity enhancement. However, their operational efficiency varies significantly across different sectors. The study employed a mixed-method approach combining quantitative data analysis and qualitative interviews. A random sample of 100 manufacturing plants was selected for detailed scrutiny, with specific focus on production processes, resource allocation, and financial outcomes. A significant proportion (65%) of the sampled plants showed improvement in cost-efficiency post-intervention, attributed to optimised resource management strategies implemented as part of the trial. Notably, a regression analysis revealed that reducing material waste by 10% led to an average reduction in operational costs by 2,500 per annum. The randomized field trial demonstrated promising results in enhancing manufacturing system efficiency. $Y_{it} = \beta_0 + \beta_1 X_{it} + \epsilon_{it}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: Kenya, Manufacturing Systems, Methodology, Cost-Effectiveness, Randomization, Evaluation, Sustainability

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