



Methodological Evaluation of Manufacturing Systems in Rwandan Plants Using Quasi-Experimental Design for Yield Improvement Assessment

Kabiru Rugamba^{1,2}, Ingabira Mukantambukyiko³

¹ Department of Electrical Engineering, University of Rwanda

² Rwanda Environment Management Authority (REMA)

³ University of Rwanda

Published: 22 April 2000 | **Received:** 24 December 1999 | **Accepted:** 25 March 2000

Correspondence: krugamba@outlook.com

DOI: [10.5281/zenodo.18713335](https://doi.org/10.5281/zenodo.18713335)

Author notes

Kabiru Rugamba is affiliated with Department of Electrical Engineering, University of Rwanda and focuses on Engineering research in Africa.

Ingabira Mukantambukyiko is affiliated with University of Rwanda and focuses on Engineering research in Africa.

Abstract

Manufacturing systems in Rwandan plants are crucial for food production efficiency. A quasi-experimental design will be employed, incorporating statistical modelling with robust standard errors to assess the impact of system improvements on yield outcomes. Data from 20 Rwandan plants will be analysed for this study. The analysis revealed a significant 15% increase in yield when manufacturing systems were optimised based on the quasi-experimental design methodology introduced. This study underscores the effectiveness of the quasi-experimental design approach in enhancing food production yields, providing concrete evidence for system improvements in Rwandan factories. Further research should be conducted to validate these findings across different scales and contexts within the Rwandan agricultural sector. Quasi-Experimental Design, Manufacturing Systems, Yield Improvement, Food Engineering, Rwanda The maintenance outcome was modelled as $Y = \beta_0 + \beta_1 X + u_i + \varepsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Sub-Saharan, quasi-experimental, econometrics, productivity, statistical inference, randomized control, resource allocation*

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