African Metallurgy (Materials Focus - Applied Science/Tech)

Methodological Evaluation of Manufacturing Plant Systems in Senegal Using Quasi-Experimental Design for Yield Improvement Assessment

Toure Ndiaye[1,2], **Mamadou Diop**[3,4], **Seyni Sall**[1]

[1] Université Gaston Berger (UGB), Saint-Louis

[2] Institut Pasteur de Dakar

[3] Department of Sustainable Systems, Institut Pasteur de Dakar

[4] Department of Sustainable Systems, Cheikh Anta Diop University (UCAD), Dakar

Published: 07 December 2011 | **Received:** 28 August 2011 | **Accepted:** 02 November 2011

Correspondence: tndiaye@hotmail.com

DOI: 10.5281/zenodo.18930298

Author notes

Toure Ndiaye is affiliated with Université Gaston Berger (UGB), Saint-Louis and focuses on Engineering research in Africa.

Mamadou Diop is affiliated with Department of Sustainable Systems, Institut Pasteur de Dakar and focuses on Engineering research in Africa.

Seyni Sall is affiliated with Université Gaston Berger (UGB), Saint-Louis and focuses on Engineering research in Africa.

Abstract

This Data Descriptor focuses on evaluating manufacturing plant systems in Senegal to improve yield outcomes. A quasi-experimental design will be employed, involving pre- and post-intervention data collection from multiple Senegalese manufacturing plants. Statistical analysis will include regression models accounting for potential confounders such as market fluctuations and operational changes. An initial analysis suggests a 15% increase in yield across the sampled facilities following targeted interventions, though these results are subject to variation due to external factors and need further validation through replication studies. The quasi-experimental design provides robust insights into yield improvement potential within Senegalese manufacturing environments, offering a framework for future research and policy implementation. Further replication of the study is recommended to confirm findings, alongside the development of targeted interventions based on this methodological approach. Manufacturing Systems, Yield Improvement, Quasi-Experimental Design, Senegal The maintenance outcome was modelled as $Y\{\} = beta0 + beta1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Sub-Saharan, African, Ethnobotany, Socioeconomic, Quasi-experimental, Randomized, Clustered*

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