



Methodological Evaluation of Manufacturing Systems Yield Improvement in Ghana: A Randomized Field Trial

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Abstract

This Data Descriptor focuses on a methodological evaluation of manufacturing systems in Ghana to assess yield improvement through randomized field trials. A randomized field trial was conducted across multiple manufacturing plants in Ghana. The trial included a control group and several experimental groups using different system methodologies. Data were collected on yield outputs to analyse the effectiveness of each method. Significant yield improvements (up to 15% increase) were observed in one-third of the experimental groups compared to the control, indicating potential for optimising manufacturing processes. The randomized field trial provided insights into which system methodologies are most effective for improving yields, contributing valuable data for future research and industry applications. Manufacturing companies should consider implementing the identified optimal systems in their operations to achieve maximum yield improvements. Further studies are recommended to validate these findings across different contexts. manufacturing systems, yield improvement, randomized field trial, Ghana 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, African, Manufacturing, Systems, Randomization, Yield, Metrics

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