



Methodological Assessment of Manufacturing Efficiency in Rwanda using Quasi-Experimental Design

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Abstract

Manufacturing efficiency in Rwanda has been a focus for policymakers aiming to boost economic growth through improved industrial productivity. Quasi-experimental designs were used to evaluate manufacturing plants' performance metrics, accounting for variations in production environments and resource allocation across different facilities. A notable direction identified was a 15% increase in productivity among randomly selected factories implementing process automation measures compared to those not adopting such technologies. The quasi-experimental design provided robust insights into the impact of technological interventions on manufacturing efficiency, contributing to evidence-based policy recommendations for Rwanda's industrial sector. Policymakers are advised to prioritise investments in technology and training programmes that align with identified areas of potential improvement based on this study's findings. The maintenance outcome was modelled as $Y_i = \beta_0 + \beta_1 X_i + u_i + \epsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Geographic, Manufacturing, Efficiency, Quasi-Experimental, Design, Econometrics, Productivity*

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