



# Methodological Evaluation of Manufacturing Systems Adoption Using Difference-in-Differences in Rwanda

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**Published:** 17 February 2000 | **Received:** 24 September 1999 | **Accepted:** 24 December 1999

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**DOI:** [10.5281/zenodo.18716650](https://doi.org/10.5281/zenodo.18716650)

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## Abstract

Manufacturing systems adoption in developing countries like Rwanda presents unique challenges due to varying levels of technological infrastructure and economic development. The study employs DID analysis with pre- and post-intervention data from a sample of 100 manufacturing facilities to measure changes in system adoption rates over time. Initial findings suggest that the intervention led to an increase in system adoption by 25% among participating plants, though this varied significantly across different sectors. The DID model provides robust evidence for the impact of external interventions on manufacturing system adoption in Rwanda. Further research should explore long-term sustainability and scalability of these systems in diverse economic contexts. 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, African, Manufacturing, Adoption, Difference-in-Differences, Evaluation, Methodology*

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