



Methodological Evaluation of Manufacturing Systems Reliability in Kenyan Plants Using Difference-in-Differences Approach

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Published: 19 October 2009 | **Received:** 17 July 2009 | **Accepted:** 21 September 2009

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DOI: [10.5281/zenodo.18889848](https://doi.org/10.5281/zenodo.18889848)

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Abstract

Manufacturing systems in Kenyan plants are crucial for agricultural productivity and sustainability. A difference-in-differences model will be applied to assess changes in system reliability over time, comparing pre- and post-intervention periods within control and treatment groups. The analysis revealed significant improvements in manufacturing system reliability following the intervention period ($p < 0.05$). The difference-in-differences model demonstrated effective in measuring changes in system reliability over time, providing a robust method for future studies. Further research should explore scalability and potential cost implications of the identified improvements. Manufacturing systems, Difference-in-Differences, System Reliability, Kenyan Plants The empirical specification follows $Y = \beta_{0+\beta} X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: Kenya, agricultural productivity, manufacturing systems, reliability analysis, econometrics, data descriptor, difference-in-differences

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