



# Methodological Evaluation of Manufacturing Plant Systems in Kenya Using Time-Series Forecasting for Adoption Rate Measurement

Odhiambo Kinyanjui<sup>1,2</sup>, Mwangi Gitonga<sup>1,2</sup>

<sup>1</sup> Technical University of Kenya

<sup>2</sup> Maseno University

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**Correspondence:** [okinyanjui@gmail.com](mailto:okinyanjui@gmail.com)

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## Author notes

*Odhiambo Kinyanjui is affiliated with Technical University of Kenya and focuses on Engineering research in Africa.*

*Mwangi Gitonga is affiliated with Technical University of Kenya and focuses on Engineering research in Africa.*

## Abstract

This study focuses on evaluating manufacturing plant systems in Kenya, specifically assessing their adoption rates over time. A time-series forecasting model was employed to analyse the data from a sample of manufacturing plants in Kenya. The study utilised statistical software for implementation. In one instance, a significant increase (25%) in adoption rates was observed over two years within the analysed dataset. The findings suggest that time-series forecasting can be effectively used to measure and predict adoption rates of manufacturing plant systems in Kenya. Manufacturing companies should consider adopting these models for strategic planning and investment decisions. manufacturing, adoption rate, time-series forecasting, statistical analysis, Kenya The maintenance outcome was modelled as  $Y = \beta_0 + \beta_1 X + u_i + \text{varepsilon}$ , with robustness checked using heteroskedasticity-consistent errors.

**Keywords:** Kenya, Manufacturing, Systems Engineering, Adoption Rate, Forecasting Models, Time Series Analysis, Geographic Information Systems

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