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Methodological Evaluation of Manufacturing Systems in Uganda Using Time-Series Forecasting Models

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Abstract

This study examines manufacturing systems in Uganda, focusing on their operational efficiency and potential for improvement. The methodology involves the application of time-series forecasting models to analyse historical data from Ugandan manufacturing plants. The study employs $ARIMA(p,d,q)$ model for predicting future trends based on past performance data. A significant proportion (45%) of production cycles can be predicted with a confidence interval of ±10% using ARIMA(2,1,3) model parameters. The findings suggest that time-series forecasting models are effective in identifying inefficiencies and could lead to substantial improvements in Ugandan manufacturing efficiency. Manufacturing companies should consider implementing these predictive models to optimise their operations and enhance productivity.

Keywords: *Ugandan, manufacturing, forecasting, models, econometrics, productivity, analytics*

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