



Revisiting Time-Series Forecasting Models for Adoption Rates in Nigerian Manufacturing Plants,

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Abstract

This study revisits time-series forecasting models to assess adoption rates of advanced manufacturing technologies in Nigerian plants from . A time-series analysis was conducted using the ARIMA model (Autoregressive Integrated Moving Average), which accounts for past values and their influence on future periods. Uncertainty in forecasts is estimated through robust standard errors. The analysis revealed that investment levels have a significant positive correlation with technology adoption rates, accounting for approximately 60% of the variation observed. This replication confirms the reliability of ARIMA models for forecasting adoption trends in Nigerian manufacturing settings. Further research should explore additional socio-economic factors impacting technology diffusion. Future studies could incorporate more granular data and longitudinal analysis to enhance predictive accuracy, particularly focusing on small-scale plants that may not have full historical records. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: Nigerian, geographical, forecasting, ARIMA, methodology, econometrics, time-series

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