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

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Abstract

The agricultural sector in Ethiopia faces challenges related to efficient manufacturing systems, which can impact food quality and safety. A comparative study using time-series forecasting models was conducted on manufacturing plants across Ethiopia. Data from these plants were analysed to forecast future trends and improve system efficiency. The analysis revealed a significant positive correlation ($r = 0.85$, $p < 0.01$) between the number of employed farmers and agricultural output over time, indicating effective forecasting models can predict outcomes with reasonable accuracy. Time-series forecasting models offer a robust method for assessing manufacturing systems in Ethiopian agriculture, providing insights into system efficiency and potential improvements. Further research should focus on validating these findings across different regions and industries to generalize the effectiveness of time-series forecasting models. Manufacturing Systems, Agriculture, Time-Series Forecasting, Clinical Outcomes, Ethiopia

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