



PROJECT REPORT
PREDICTING RICE PRICE IN CENTRAL JAVA USING
SEASONAL AUTOREGRESSIVE INTEGRATED MOVING
AVERAGE WITH EXOGENOUS REGRESSOR (SARIMAX)
AND TRIPLE EXPONENTIAL SMOOTHING (TES)

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ABSTRACT (ABSTRACT TITLE)

Rice prices are very important for economic stability, especially in Central Java, therefore accurate predictions are needed for effective agricultural planning and risk management. To overcome this problem, the government must prepare itself by ensuring the availability of sufficient rice stocks and even irrigation in areas of Central Java affected by drought. Predicting rice prices using the triple exponential smoothing (TES) and Seasonal Autoregressive Integrated Moving Average with Exogenous Regressors (SARIMAX) methods is one of the things that can help farmers in Central Java. The forecasting approach used takes into account stationary components, trends, seasonality, and exogenous factors (X) so that the results are expected to help the government stabilize the economy through appropriate agricultural decisions. The optimal MAPE value obtained from the Triple Exponential Smoothing method is: 1.15% with parameter values α (alpha) = 0.70, β (beta) = 0.20, and γ (gamma) = 0.90. The Seasonal Autoregressive Integrated Moving Average with Exogenous Regressors (SARIMAX) method using two exogenous variables (X), namely the Price of Harvested Dry Paddy and Inflation, produces a MAPE value of 5.39%..

Keyword: Rice prices, forecasting, exponential smoothing, Seasonal Autoregressive Integrated Moving Average with Exogenous Regressors (SARIMAX), exogenous(X).

