

REVIEWER'S REPORT

Manuscript No.: IJAR-58403

Title: Forecasting Production Pattern of Sugar, Molasses, Bagasse and Pressmud in India using ARIMA Model.

Recommendation:

Accept as it is
 Accept after minor revision.....
Accept after major revision
 Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality			x	
Techn. Quality		x		
Clarity		x		
Significance		x		

Reviewer's ID: JPR-171

Detailed Reviewer's Report

This study applies ARIMA models to forecast production of sugar, molasses, bagasse, and pressmud in India using data from 1999–2019. The topic is relevant given the economic significance of the sugar industry and its by-products. However, the manuscript has several critical weaknesses requiring major revision. First, the methodology lacks clarity: the data period is stated as 1999–2019, yet Table 4 includes “actual” values for 2019–20 and beyond, which are not actual but projected – this is confusing and must be corrected. Second, the validation of the ARIMA model is inadequate: the paper presents RMSE, MAPE, and R^2 values (Table 3), but does not discuss residual diagnostics (e.g., Ljung-Box test for autocorrelation, normality of residuals) or provide ACF/PACF plots to justify the chosen orders (p,d,q). Third, the forecasting horizon (10 years) is too long for a model fitted on only 20 data points; the authors should justify why a shorter horizon was not considered or use more robust methods (e.g., rolling forecasts). Fourth, the comparison of actual vs predicted values (Table 4) is overly lengthy and could be summarised more concisely. Fifth, Table 2 presents cubic/quadratic trend models without explaining why these were estimated or how they relate to the ARIMA forecasts. Sixth, the introduction contains a typographical error (“2” after “and also an essential commodity”). Seventh, references are incomplete (e.g., Ahmar et al. 2018 lacks journal details). The authors must clarify the data split, provide full diagnostic checks, justify the forecast horizon, and correct the references. A major revision is required.