Comparison of ARIMA and LSTM in Forecasting the Retail Prices of Vegetables in Colombo, Sri Lanka

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Abstract

Identification of vegetable price trends is important to make better decisions in the production and market. Due to several factors including seasonality, perishability, an imbalanced supply-demand market, customer choice, and the availability of raw materials, vegetable prices fluctuate quickly and are highly unstable. In this study price prediction was concluded using two models ARIMA and LSTM with retail price data for Cabbage, Carrot, and Green beans in Colombo from 2009 to 2018. According to the decision criteria of RMSE and MAPE, the LSTM model is superior to the ARIMA model in predicting the retail prices of vegetables. There were no studies have focused on predicting prices with novel technology in the Sri Lankan vegetable market. Hence the results of this study can be used to build an advanced forecasting model by the government and decision-makers in agriculture in Sri Lanka.

Keywords

Vegetable, Forecasting, ARIMA, LSTM