

DEMANDEST -AI POWERED FOOD DEMAND FORECASTER

(APPLIED DATA SCIENCE)

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LITERATURE REVIEW

Survey 1:

Lon-Mu (2010):

Data mining on time series: an illustration using fast-food restaurant franchise data:

Lon-Mu et al. used fast-food franchise as a case in order to illustrate how data mining can be applied to such time series using Box–Jenkins seasonal ARIMA models. They used data in daily intervals and aimed to forecast daily demand to facilitate a better inventory management. They used 365 days of data for analysis and 42 days of data for comparison of forecast performance. Results of their study showed that they obtained appropriate models for a time series.

Survey 2:

Wassana (2011):

Long-Term Sales Forecasting Using Lee-Carter and Holt-Winters Methods:

Wassana et al. developed a statistical model for long-term forecasting sparkling beverages sales by using monthly sales revenue of 4 years data by using Lee-Carter forecasting approach and exponential smoothing HW with additive seasonality method. They found that Lee-Carter model with HW method produced an excellent fit and gave sensible estimates in long-term sales forecasting.

Survey 3:

Alonso (2013):

Support Vector Regression to predict carcass weight in beef cattle in advance of the slaughter:

Alonso et al. developed an SVM model to forecast cattle weight trajectories with only one or a few weights. Additionally, they report that the level of error metrics of mean absolute percentage error (MAPE) for their model were between 3.9 and 9.3 for different datasets. Alonso et al. develop an SVM/ support vector regression (SVR) to estimate the beef cattle' carcass weight 150 days before slaughter. They used MAPE to test the accuracy of their model and they report that the average MAPE of their model was 4.27%.

Although research has used advanced machine learning tools to predict agricultural and livestock production, the focus of the research has been on a specific product or livestock, and developed models are not designed to forecast different production at the macrolevel of a country. To address this gap in the literature, the present study intends to develop a model for predicting food production at the macro level of a country using machine learning models.

Survey 4:

Veiga (2014):

Demand forecasting in food retail: a comparison between the Holt-Winters and ARIMA models:

Veiga et al. compared the performances of ARIMA and HW models for the prediction of a time series formed by a group of perishable dairy products. They used 8 years of sales data. As evaluation metric, they used MAPE and Theil inequality index (U-Theil). Results showed that HW obtained better results regarding the performance.

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