FORECASTING DEMAND FOR BOTTLE-PACKED BEVERAGES USING DOUBLE EXPONENTIAL SMOOTHING METHOD

ABSTRACT

Demand forecasting is a process of predicting or estimating demand that will occur in the future. Products that can use the demand forecasting process are bottled beverage products. The number of requests for bottled beverage products is very important because if they are not able to estimate the demand, the company can suffer losses due to not being able to meet market demand. In this study, researchers created a system capable of forecasting the demand for bottled drinks based on previous data. This study uses the Double Exponential Smoothing (DES) algorithm which is a forecasting method for trend-patterned data. The data used in this study were taken from the kaggle site for a period of 1 year, starting from January to December. The programming language used to build the system in this research is PHP with MySQL database management system. The experimental results show that for the bottle size of 330ml with an alpha value of 0.9 and the MAPE score obtained is 5.164% the number of forecasted requests is 58030 requests, for the bottle size of 1500ml with an alpha value of 0.9 and a MAPE score of 13.501% the number of requests is forecasted to be 23932 requests. From the MAPE score obtained, these results indicate that the system built has the criteria of being able to predict well.

Keywords: Forecasting, Double Exponential Smoothing, Bottles.