

ABSTRACT

PT.XYZ is a company that produces water bottled products. The company has 5 types of bottle sizes, one of them is 330 ml bottled water which has the biggest amount of error in forecasting. Higher number of forecast than the actual demand causes the product to pile up in warehouse. Less forecasted number makes the company to produce extra products which means extra cost involved. Therefore, testing on methods has to be conducted in order to find more suitable approach to decrease the risk of producing excessively or inadequately.

The methods will be employed are Naïve, Moving Average, Weighted Moving Average, Single Exponential Smoothing, Holt's Exponential Smoothing, Holt Winter's Exponential Smoothing, Polynomial Regression, and Cyclical Regression. To examine the performance of forecasting methods, three measures are applied. Those are Mean Absolute Deviation (MAD), mean squared error (MSE), and mean absolute percent error (MAPE).

The most suitable forecasting method for 330ml bottled water product is Cyclical Regression, MSE resulted from proposed method is 298.796,19 and the number of MSE with the method that is currently employed by the company is 2,382,366.84. After conducted the research, forecasting can be done by using proposed method.

Keyword: Cyclical Regression, Forecasting, Forecasting Error, Suitable Forecasting Method.