ABSTRAK

Air menjadi salah satu kebutuhan yang sangat penting bagi masyarakat dalam kehidupan sehari-hari. Namun pemakaian air dan permintaan air konsumen pada PDAM Tirta Khatulistiwa tidak selalu stabil setiap waktunya. Pemakaian air dapat diprediksi menggunakan metode *Moving Average*. Dalam *Moving Average* terdapat beberapa pendekatan diantaranya adalah metode *Simple Moving Average*, *Double Moving Average*, *Weighted Moving Average*, dan *Exponential Moving Average*. Penelitian ini membandingkan keempat metode tersebut untuk mengetahui hasil keakuratan dengan menggunakan metode *Mean Forecase Error* (MFE). Data yang digunakan dalam penelitian yaitu data bulan Januari 2016 sampai dengan bulan Maret 2020, terdapat 3 percobaan periode yaitu 2 periode, 3 periode, dan 4 periode pada keempat metode. Berdasarkan jumlah periode dengan 51 data metode *Weighted Moving Average* mempunyai nilai yang optimal hasil prediksinya dengan nilai MFE sebesar 14.649, dibandingkan metode *Simple Moving Average* dengan nilai 16.886, *Double Moving Average* dengan nilai -42.266, dan *Exponential Moving Average* dengan nilai 15.854. Sedangkan jumlah periode dengan 24 data metode *Simple Moving Average* mempunyai nilai yang optimal hasil prediksinya dengan nilai MFE sebesar 375, dibandingkan metode *Double Moving Average* dengan nilai 5.645, *Weighted Moving Average* dengan nilai -644, dan *Exponential Moving Average* dengan nilai -2.014.

Kata kunci : Air, Prediksi, *Moving Average*, *Simple Moving Average*, *Double Moving Average*, *Weighted Moving Average*, *Exponential Moving Average* .

ABSTRAK

Water is one of the most important needs for people in their daily lives. However, water use and consumer water demand at PDAM Tirta Khatulistiwa is not always stable every time. Water consumption can be predicted using the Moving Average method. In Moving Average, there are several approaches including the Simple Moving Average, Double Moving Average, Weighted Moving Average, and Exponential Moving Average methods. This study compared the four methods to determine the accuracy results using the Mean Forecase Error (MFE) method. The data used in this study are data from January 2016 to March 2020. The data will be process in 3 experimental periods, that are using 2 periods, 3 periods and 4 periods in the four methods. Based on the number of periods with 51 data, the Weighted Moving Average method has an optimal value of the predicted result with MFE value is 14,649, compared to the Simple Moving Average method with a value of 16,886, Double Moving Average with a value of -42.266, and Exponential Moving Average with a value of 15,854. While the number of periods with 24 data, the Simple Moving Average method has the optimal predictive value with an MFE value of 375, compared to the Double Moving Average method with a value of 5,645, a Weighted Moving Average with a value of -644, and an Exponential Moving Average with a value of -2,014.

Keywords : Water, Prediction, Moving Average, Simple Moving Average, Double Moving Average, Weighted Moving Average, Exponential Moving Average.