INTISARI

Penelitian sebelumnya di RS Akademik Universitas Gadjah Mada ditemukan nilai obat rusak dan kedaluwarsa 4,71% serta stok mati sebesar 7,89%. Proses perencanaan yang baik diharapkan dapat meminimalkan persentase obat rusak dan kedaluwarsa serta menurunkan nilai stok mati. Peramalan merupakan salah satu alat bantu dalam perencanaan agar efektif dan efisien. Metode peramalan yang sering digunakan adalah *time series*. Banyak faktor yang mempengaruhi ketidakpastian kebutuhan masa depan sehingga diperlukan pencarian metode peramalan terbaik untuk meminimalkan penyimpangan yang mungkin terjadi. Tujuan penelitian ini adalah menentukan metode peramalan terbaik yang didasarkan ukuran kesalahan terkecil dari ketiga metode peramalan *time series* yang dibandingkan.

Metode penelitian ini adalah observasional dengan jenis penelitian deskriptif analisis secara retrospektif. Populasi merupakan semua obat yang digunakan di RSA UGM bulan Januari 2018-Desember 2020. Sampel adalah 10 jenis obat urutan tertinggi berdasar kategori A hasil analisis ABC konsumsi tahun 2020 dengan kriteria tertentu menggunakan teknik *purposive sampling*. Metode peramalan *time series* yang digunakan *single moving average (SMA) 3 periode, single exponential smoothing (SES)* dan *Autoregressive Integrated Moving Average (ARIMA),* menggunakan *software Eviews 12* dan *Microsoft Excel*, kemudian dihitung ukuran kesalahan yaitu *Mean Absolute Deviation* (MAD), *Mean Square Error* (MSE), dan *Mean Absolute Percentage Error* (MAPE).

Metode *SES* merupakan metode dengan ukuran kesalahan terkecil. Nilai MAD, MSE, MAPE metode *SES* secara berurutan sebagai berikut Tutofusin Ops 500ml 118pcs, 21080pcs, 24%, Hemapo 2000 IU/ml 21pcs, 657 pcs, 8%, Hemapo 3000 IU/ml 19pcs, 600pcs, 19%, Abilify Discmelt 10mg tab 96pcs, 13504pcs, 21%, Otsu-NS Piggyback 287ppcs, 192379pcs, 18%, Parasetamol 1 gram/100ml 145pcs, 33103pcs, 17%, Pantoprazole 40mg 140pcs, 35231pcs, 25%, Wida Nacl 0,9% 236pcs, 153522pcs, 16%, Symbicort Turbuheler 160/4,5mcg 16pcs, 580pcs, 18% dan Otsu-Ns 0,9% 25ml 215pcs, 65544pcs, 16%, dan penelitian ini disimpulkan bahwa metode peramalan yang terbaik adalah metode *SES* dibandingkan metode *SMA 3 periode* dan *ARIMA*.

Kata kunci: *Forecasting, SMA 3 periode, SES, ARIMA*, RSA UGM

ABSTRACT

A good planning procedure should reduce the value of dead stock and the percentage of damaged and expired medications. One method for effective and efficient planning is forecasting. Time series is a forecasting technique that is frequently utilized. The unpredictability of future needs is influenced by a variety of circumstances, so the optimal forecasting technique must be chosen to reduce potential deviations. The goal of this study was to examine the three time series forecasting techniques and identify which one produced the smallest inaccuracy.

The method of this research is observational research with descriptive analysis retrospectively. The population is all drugs used at the UGM RSA in January 2018-December 2020. The samples are the 10 types of drugs in the highest order based on category A, the results of the ABC analysis of consumption in 2020 with certain criteria using purposive sampling technique. The time series forecasting method used is single moving average (SMA) 3periods, single exponential smoothing (SES) and Autoregressive Integrated Moving Average (ARIMA), using Eviews 12 and Excel, then calculating the error size, namely Mean Absolute Deviation (MAD), Mean Square Error (MSE), and Mean Absolute Percentage Error (MAPE) so that the best method was chosen.

The size of the SES error obtained is the smallest. The MAD, MSE, MAPE values of the SES method are sequentially as follows: Tutofusin Ops 500ml 118pcs, 21080pcs, 24%, Hemapo 2000 IU/ml 21pcs, 657pcs, 8%, Hemapo 3000 IU/ml 19pcs, 600pcs, 19%, Abilify Discmelt 10mg tabs 96pcs, 13504pcs, 21%, Otsu-NS Piggyback 287pcs, 192379pcs, 18%, Paracetamol 1 gram/100ml 145pcs, 33103pcs, 17%, Pantoprazole 4mg 140pcs, 35231pcs, 25%, Wida Nacl 0.9% 236pcs, 153522pcs, 16%, Symbicort Turbuheler 160/4.5mcg 16pcs, 580pcs, 18% and Otsu-Ns 0.9% 25ml 215pcs, 65544pcs, 16%. This study concluded that the best forecasting method is the SES method.

Keywords: Forecasting, SMA 3 periode, SES, ARIMA, RSA UGM