

ABSTRACT

Raw material inventory plays a crucial role in the operational continuity of a business, particularly in the food and beverage sector such as coffee shops. Toko Kopi Rasa, which has several branches in Padang and Bukittinggi, faces challenges in inventory management due to the absence of a computerized system. Based on this issue, this study aims to implement the Single Moving Average (SMA) method in a web-based Decision Support System (DSS) to assist the decision-making process in inventory optimization. The SMA method is selected for its ability to process historical sales data to generate accurate forecasts of raw material needs. The dataset used in this study covers the period from August to December 2024. The results of SMA method testing showed average error values of MAD 2.82, MSE 43.58, and MAPE 0.0876%, with a testing accuracy rate of 91.24%. These findings indicate that the applied method is reliable and suitable as a reference for inventory management. The implementation of this system is expected to support Toko Kopi Rasa in optimizing inventory control across all branches, improving operational efficiency, and minimizing the risk of losses due to stock miscalculations.

Keywords : Raw Material Inventory, Forecasting, Single Moving Average, Decision Support System, Website.

ABSTRAK

Persediaan bahan baku memegang peran krusial dalam kelangsungan operasional sebuah bisnis, terutama di sektor makanan dan minuman seperti *coffee shop*. Toko Kopi Rasa, yang memiliki beberapa cabang di Padang dan Bukittinggi, menghadapi kendala dalam pengelolaan persediaan akibat belum tersedianya sistem yang terkomputerisasi. Berdasarkan permasalahan tersebut, maka penelitian ini bertujuan menerapkan metode *Single Moving Average* dalam Sistem Pendukung Keputusan (SPK) berbasis web guna membantu proses pengambilan keputusan dalam optimalisasi persediaan. Metode ini dipilih karena mampu memproses data historis penjualan untuk menghasilkan prediksi kebutuhan bahan baku. *Dataset* penelitian di ambil dari periode Agustus hingga Desember 2024. Hasil pengujian metode SMA menghasilkan rata-rata nilai *error* MAD 2,82 , MSE 43,58 , dan MAPE 0.0876%, serta tingkat akurasi pengujian mencapai 91,24%. Hasil tersebut menunjukkan bahwa metode yang digunakan mampu memberikan prediksi yang andal dan layak dijadikan acuan dalam pengelolaan stok. Penerapan sistem ini diharapkan dapat membantu Toko Kopi Rasa dalam mengoptimalkan manajemen persediaan di seluruh cabang, meningkatkan efisiensi operasional, serta meminimalkan risiko kerugian akibat kesalahan perhitungan stok.

Kata kunci: Persediaan Bahan Baku, Peramalan, *Single Moving Average*, Sistem Pendukung Keputusan, Website