

ABSTRACT

UD. KS PRO, a manufacturer and seller of motorbike accessories, is facing an overstock problem in its warehouse from January to December 2023 due to high product inventories. This imbalance between supply and demand occurs because optimal inventory policies have not been implemented. This research aims to overcome this problem by applying two main methods, namely Periodic Review (R,s, S) and Continuous Review (s, S), in order to minimize total inventory costs. In addition, Monte Carlo simulation is used for demand forecasting by considering the uncertainty of future demand, enabling more accurate predictions of inventory needs.

This research explores and determines important parameters in both methods, such as Review Interval (R), Reorder Point (s), Maximum Stock (S), Order Quantity (q), and Safety Stock (SS) in actual and proposed conditions. The main aim of implementing this policy is to reduce inventory costs burdening the company's operations.

The simulation results show that the application of the Continuous Review (s, S) method provides better results in optimizing inventory levels, by determining parameters such as optimal Safety Stock (SS) and lot size (S). This shows that this method succeeded in reducing total inventory costs to IDR 126,028,256.48, or 78.16% lower than inventory costs in actual conditions which reached IDR 582,092,747.81.

Thus, applying the Continuous Review (s, S) method has proven to be effective in reducing excessive inventory costs, while increasing operational efficiency at UD. KS PRO. This research provides a strong basis for optimizing inventory management through a more structured and data-driven approach.

Keyword: Inventory Costs, Continuous Review (s, S), Inventory Management, Overstock, Monte Carlo Simulation