

ABSTRAK

Gudang PT. XYZ merupakan distributor semen di wilayah Sumenep, Jawa Timur, yang melayani 223 toko bangunan mitra. Permasalahan utama yang dihadapi adalah terjadinya *stockout* sebesar 65.700 sak selama periode 2024–2025, akibat ketidakseimbangan antara pasokan gudang sebesar 2.239.200 sak dengan total permintaan toko sebesar 2.304.900 sak. Penelitian ini bertujuan untuk menentukan kuantitas pemesanan optimal, menghitung *safety stock* dan *reorder point*, serta menganalisis potensi penghematan total biaya persediaan menggunakan metode *Economic Order Quantity Multi Item*. Peramalan permintaan dilakukan menggunakan metode *Holt Winters Exponential Smoothing Additive* dan *Multiplicative*. Hasil penelitian menunjukkan interval pemesanan optimal sebesar 0,41667 bulan dengan frekuensi 24 kali per bulan. Nilai *safety stock* yang direkomendasikan adalah 3.294 sak untuk Dynamix Serbaguna, 714 sak untuk Merdeka, dan 570 sak untuk Dynamix Masonry. *Reorder point* masing-masing ditetapkan sebesar 8.002, 1.540, dan 1.453 sak. Penerapan EOQ *Multi Item* menghasilkan *Total Inventory Cost* sebesar Rp4.601.804.750 per bulan, lebih efisien dibandingkan metode eksisting sebesar Rp4.606.463.514, dengan penghematan Rp4.658.763 per bulan. Penelitian ini juga mendukung SDGs poin 9 dan 12.

Kata kunci : Pengendalian Persediaan, EOQ *Multi Item*, *Safety Stock*, *Reorder Point*, SDGs.

ABSTRACT

PT. XYZ warehouse is a cement distributor in the Sumenep area, East Java, which serves 223 partner building stores. The main problem faced is the occurrence of stockouts of 65,700 sacks during the 2024–2025 period, due to an imbalance between warehouse supply of 2,239,200 sacks and total store demand of 2,304,900 sacks. This study aims to determine the optimal order quantity, calculate safety stock and reorder point, and analyze the potential savings in total inventory costs using the Economic Order Quantity Multi Item method. Demand forecasting is carried out using the Holt Winters Exponential Smoothing Additive and Multiplicative methods. The results show the optimal ordering interval is 0.41667 months with a frequency of 24 times per month. The recommended safety stock value is 3.294 sacks for Dynamix Serbaguna, 714 sacks for Merdeka, and 570 sacks for Dynamix Masonry. The reorder points were set at 8.002, 1.540, and 1.453 bags, respectively. The implementation of the Multi-Item EOQ resulted in a Total Inventory Cost of Rp4,601,804,750 per month, more efficient than the existing method of Rp4,606,463,514, with savings of Rp4,658,763 per month. This research also supports SDGs points 9 and 12.

Keywords: Inventory Control, Multi-Item EOQ, Safety Stock, Reorder Point, SDGs.