

Analysis of Inventory Control of Wheat Flour Raw Material Using the Economic Order Quantity Method at Maya Bakery Sidoarjo Regency

Septine Brillyantina, S.ST., M.Tr.P. *as a chief concelor*

Siti Lailatul Mukasanah

*Agroindustrial Management Study Program
Department of Agribusiness Management*

ABSTRACT

This research was conducted at Maya Bakery, a business engaged in the production of traditional pastries and bread, using wheat flour as its primary raw material. Previously, inventory management of wheat flour at Maya Bakery was carried out conventionally based on estimation, without any structured method. This led to a high frequency of purchases, increased ordering costs, and the absence of safety stock, which posed a risk to the continuity of production. The purpose of this study was to analyze the control of wheat flour inventory using the Economic Order Quantity (EOQ) method. This study applied the EOQ method with several analytical techniques, including calculations of optimal order quantity (EOQ), order frequency, safety stock, reorder point, and total inventory cost. The analysis showed that the optimal purchase quantity using the EOQ method should have been 252 kg per order, with a frequency of 15 times per year. In addition, Maya Bakery should have maintained a safety stock of 28 kg and reordered when stock levels reached 39 kg. The total inventory cost using the EOQ method amounted to Rp 340,591, whereas the conventional method resulted in Rp 678,600. The EOQ approach proved effective in optimizing inventory control and reducing operational costs by Rp 338,009, representing a 50% cost saving. These findings indicated that the EOQ method was more efficient in raw material management compared to the company's current practice.

Keywords : Wheat Flour, Inventory, EOQ, Bakery