

## **ABSTRACT**

Company XYZ is a company runs in the cocoa industry located in Bandung. Currently, Company XYZ has the problem in controlling inventory system of packaging materials because there is only one supplier who supply the material, variation of lead time, high stocks of packaging material that pile up in the warehouse. The purpose of this research to minimize the cost of total inventory, this system consists of three stages. First, determining the demand for packaging material and testing the distribution of demand, classification using ABC analysis and testing distribution of lead time. Second, determine the economic order interval and order quantity, safety stock and reorder point. Third, calculate the total inventory cost.

Sensitivity analysis is performed to see the effect of the change of variable parameter input of ordering cost and holding cost to total inventory cost. Sensitivity analysis is performed with a range of 5% to 25%. From the research that has been done, actual inventory system in this company has not been efficient because the actual policy is still not optimal. It can be seen from the number of overstocks that generate high embedded costs, then the actual policy in Company XYZ need improvement. From the total 25 SKUs of material packaging, Inventory system proposed in this paper can save 83.24% that is Rp171,342,981,-. The proposed system that considering variation of lead time has improved inventory performance.

**Keywords:** joint replenishment, economic order interval, economic order quantity, safety stock, reorder point, Inventor Turnover (ITO)