

ABSTRACT

Supermarket XYZ is facing serious challenges that affect its profitability. This study aims to analyze the main factors that have led to a decline in profits in this supermarket. These factors include stock outs, high display costs, high investment in inventory, high ordering costs, and high storage costs. This research was conducted through analysis of historical data from XYZ supermarket, including records of insufficient stock levels, product display spending, investment in inventory, ordering costs, and storage costs.

The results of the data analysis showed that stock outs consistently resulted in lost sales and disappointed customers. High display costs, while providing attractive product displays, have increased the supermarket's operating costs without a corresponding increase in sales. High investment in inventory leads to funds tied up in unproductive stock, while high ordering costs and high storage costs weigh on profitability in a significant way. Therefore, strategic improvement recommendations include more efficient inventory management, more careful control of display costs, and a review of ordering and storage policies to reduce unnecessary costs. Based on the problems that XYZ supermarket has, it is necessary to maximize the use of gondolas.

This research was conducted to provide a proposal for replenish gondolas using the NonLinear Integer Programming method which aims to maximize total net profit at XYZ Supermarket. The results of the application of the proposed method are the total products on display and the total products displayed in the showroom.

The results of the calculation of Total Net Profit at XYZ Supermarket gave an increase of 81% from the actual total net profit or Rp 10,129,629.09.

Key Words — Supermarket, Replenish, Gondola, Maximize, TNP