

ABSTRACT

This study aims to design a spare parts inventory classification system to reduce picking time at the Tunas Toyota Cimindi warehouse. The method used is FSN analysis based on Turn Over Ratio (TOR) to classify spare parts according to their movement levels, resulting in categories of Fast-Moving, Slow-Moving, and Non-Moving items. Additionally, class-based storage is applied to optimize the placement of spare parts on warehouse racks. The data used includes warehouse process time observations and historical inventory data throughout 2024. The results show that the proposed classification system successfully reduced picking time by 59,32% and decreased the total warehouse process time by 12,85%. A decision support system based on Microsoft Excel VBA was also developed to assist in automating the classification and locating of spare parts. This research provides an efficient and practically implementable inventory classification system recommendation to improve warehouse productivity and service quality.

Keywords: Picking Time, FSN-TOR, Class-Based Storage, Warehouse Layout, Efficiency, Tunas Toyota Cimindi