

ABSTRAK

Efisiensi gudang di perusahaan *make-to-order* seperti PT Adi Satria Abadi sangat krusial. Sistem penyimpanan material saat ini di gudang aksesori yang kurang terstruktur berpotensi menyebabkan waktu pencarian dan siklus pengambilan yang tinggi. Penelitian ini bertujuan merancang dan mengevaluasi alternatif strategi penataan barang menggunakan metode *Shared Storage*, *Class-Based Storage* (CBS), dan *Mixed Storage* untuk meningkatkan kinerja operasional gudang melalui simulasi ProModel.

Metodologi penelitian melibatkan analisis data historis permintaan, perhitungan popularitas kategori, dan estimasi kebutuhan ruang sebagai dasar pengembangan model simulasi. Tiga skenario strategi penyimpanan tersebut kemudian dievaluasi berdasarkan metrik kinerja utama, dengan parameter waktu pencarian untuk setiap skenario didasarkan pada observasi kondisi awal dan prinsip desain serta referensi perbaikan. Fokus utama adalah mengidentifikasi strategi yang paling efektif dalam mempercepat proses pencarian dan pengambilan material.

Hasil simulasi menunjukkan bahwa skenario *Class-Based Storage* (CBS) dan *Mixed Storage* secara signifikan mengungguli *Shared Storage* dan didukung dengan penurunan rata-rata waktu setelah implementasi untuk kategori tertentu sebesar 81%. Berdasarkan analisis kinerja dan pertimbangan selain penataan yang terstruktur dan fleksibilitas barang maka metode *Mixed Storage* tersebut direkomendasikan untuk PT Adi Satria Abadi. Implementasi ini disarankan didukung penguatan praktik 5S untuk optimalisasi berkelanjutan.

Kata kunci: *Shared Storage*; *Class-Based Storage* (CBS); *Mixed Storage* (*Hybrid Storage*); Simulasi Promodel; Waktu Pencarian

Proposed Material Storage Strategy for Accessory and Packing Warehouses to Minimize Search Time

ABSTRACT

Warehouse efficiency in a make-to-order company such as PT Adi Satria Abadi is highly crucial. The current unstructured material storage system in the accessory warehouse potentially leads to long search times and high picking cycle durations. This study aims to design and evaluate alternative storage strategies using the Shared Storage, Class-Based Storage (CBS), and Mixed Storage methods to improve warehouse operational performance through ProModel simulation.

The research methodology involves analyzing historical demand data, calculating category popularity, and estimating space requirements as the basis for developing the simulation model. The three storage strategy scenarios are then evaluated based on key performance metrics, with the search time parameter for each scenario derived from baseline observations, design principles, and improvement references. The main focus is to identify the most effective strategy in accelerating the material search and retrieval process.

Simulation results show that the Class-Based Storage (CBS) and Mixed Storage scenarios significantly outperform Shared Storage, supported by a reduction in average search time of up to 81% for specific categories after implementation. Based on performance analysis and considerations such as structured organization and item flexibility, the Mixed Storage method is recommended for PT Adi Satria Abadi. It is also advised that this implementation be supported by the strengthening of 5S practices for continuous optimization.

Keywords: *Shared Storage; Class-Based Storage (CBS); Mixed Storage (Hybrid Storage); ProModel Simulation; Search Time*