

PENGENDALIAN KEBUTUHAN BAHAN BAKU PANEL BAMBU MENGUNAKAN METODE MATERIAL REQUIREMENT PLANNING (MRP)

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ABSTRAK

PT Dekor Asia Jayakarya merupakan salah satu perusahaan yang bergerak dibidang Furniture dan Kerajinan. PT Dekor Asia Jayakarya memiliki ruang di hati masyarakat dalam maupun luar negeri. Selama priode setahun terahir bulan Januari sampai bulan Desember 2024 persediaan bahan baku mengalami overstock, perusahaan mengalami peningkatan produksi sebesar 37139pcs, yaitu meningkatnya jumlah stok sebesar 1139pcs dari 36000pcs yang dibutuhkan perusahaan selama 1 tahun. Diketahui estimasi biaya simpan perusahaan untuk Panel Bambu yaitu Rp 460.615.310 selama per bulan, jika tidak dilakukan evaluasi peningkatan produksi/overstock mempengaruhi biaya simpan (holding cost). Tujuan dari penelitian untuk mengendalikan persediaan bahan baku supaya tidak terjadi overstock, melakukan analisi menggunakan metode Material Requirement Planning (MRP). Teknik Lot Sizing, Lot for lot (LFL), Economic Order Quantity (EOQ) dan Priod Order Quantity (POQ). Hasil penelitian teknik lotting EOQ jika biaya simpan perusahaan Rp 460.615.310, dapat menghemat sebesar Rp 310.317.167 per bulan, dengan penggunaan biaya simpan Rp 150.298.143 per bulan. Total biaya simpan selama satu tahun didapatkan Rp 1.653.279.578. Solusi yang tepat, menggunakan teknik EOQ untuk meminimalkan untuk menekankan holding cost perusahaan karena overstock.

Kata Kunci: Pengendalian Persediaan Bahan Baku, Material Requirement Planning, LFL, EOQ, POQ

BAMBOO PANEL RAW MATERIAL REQUIREMENTS CONTROL USING MATERIAL REQUIREMENT PLANNING (MRP) METHOD

ABSTRACT

PT Dekor Asia Jayakarya is one of the companies engaged in the field of Furniture and Crafts. PT Dekor Asia Jayakarya has been in the hearts of people both in Indonesia and abroad. During the last one-year period from January to December 2024, raw material inventory experienced overstock. The company experienced an increase in production of 37139pcs, namely an increase in the amount of stock by 1139pcs from 36000pcs needed by the company for 1 year. It is known that the estimated company's storage costs for Bamboo Panels are IDR 460,615,310 per month, if no evaluation is carried out, the increase in production/overstock affects the storage costs (holding costs). The purpose of the study is to control raw material inventory so that overstock does not occur, conducting an analysis using the Material Requirement Planning (MRP) method. Lot Sizing, Lot for lot (LFL), Economic Order Quantity (EOQ) and Priod Order Quantity (POQ) techniques. The results of the EOQ lotting technique study show if the company's storage costs are IDR 460,615,310, it can save IDR 310,317,167 per month, with the use of storage costs of IDR 150,298,143 per month. The total storage cost for one year is Rp 1,653,279,578. The right solution is to use the EOQ technique to minimize the company's holding cost due to overstock.

Keywords: Raw Material Inventory Control, Material Requirement Planning, LFL, EOQ, POQ

DAFTAR PUSTAKA

- [1] Latifah, A. A. and Nuryanto, I. 2023. “Perencanaan Kebutuhan Bahan Baku Produk Kerajinan Tangan dari Bambu Menggunakan Metode Material Requirement Planning (MRP) di CV. Rajasa Mas Jaya”. *Journal of Student Research*, 1(4), 249-256.
- [2] Cipta, H., Aprilia, R. and Kurniawan, H. 2023. “Material Requirements Planning Method For Controlling Inventory Of Raw Materials”. *Jurnal Teknik Informatika C.I.T Medicom*, 15(1), 1–8.
- [3] Maslihan. 2019. “Analisis Perancangan Kebutuhan Material Dengan Metode Material Requirement Planning. Strategy : *Jurnal Teknik Industri*, 1(2), 29–38.
- [4] Yasa, I. M. S. and Mandala, K. 2020. “Material Requirement Planning Untuk Memenuhi Produksi Pada Cv. Bangun Cipta Artha Di Badung”. *E-Jurnal Manajemen Universitas Udayana*, 9(2), 426.
- [5] Wulansari, A., Tarman, T. and Gumelar, I. 2023. “Pengendalian Persediaan Bahan Baku Menggunakan Metode Material Requirement Planning (MRP) Pada Umkm Le Khari Official Shop Purwakarta”. *Jurnal Ilmiah Multidisiplin*, 2(04), 129–140.
- [6] Wulandari, S. K. and Donoriyanto, D. S. 2022. “Inventory Control of Brown Paper Raw Materials Using the Material Requirement Planning Method in Paper Company”. *Journal of Industrial Engineering Management*, 7(3), 215–224.
- [7] Tola, A. 2022. “Analysis Inventory for Supporting Materials in Nickel Industry Using Material Requirement Planning Method”. *PROZIMA (Productivity, Optimization and Manufacturing System Engineering)*, 6(1), 14–28.
- [8] Tanisri, R. H. A. and Rye, E. 2022. “Pengendalian Persediaan Bahan Baku Roda Caster Menggunakan Metode Mrp (Material Requirement Planning) Di Cv Karya Teknik Makmur”. *Jurnal Inkofar*, 6(1), 52–60.
- [9] Susanti, H. D. 2020. “Application of material requirement planning method in raw materials planning on sardine product in pt. Blambangan foodpackers Indonesia”. *Food Research*, 4(6), 2067–2072.
- [10] Sundari, D. S., Diandi, S. and Prihandoko, D. 2020. “The Controlling of Raw Materials Inventory using Material Requirement Planning Method in PT Anugrah Mandiri”. *International Journal of Recent Technology and Engineering (IJRTE)*, 9(2), 830–835.
- [11] Sukma Adhiyasa, C., Febryanto, I. D., . P. and Pramana, Y. B. 2023. “Implementation of Material Requirement Planning (MRP) in Controlling Raw Materials for Shoes Products at PT.XYZ”. *Tibuana*, 6(2), 119–126.
- [12] Sudarwati, W. and Panudju, A. T. 2023. “Analysis of Fabric Raw Material Inventory Control in Backpack Products Using the Material Requirements Planning (MRP) Method at CV. Metassa Collection”. *Formosa Journal of Science and Technology*, 2(8), 1967–1980.
- [13] Sri, D. 2021. “Raw Material Inventory Planning of Patient Menu Using Material Requirement Planning (MRP) in RSIA Kendangsari Merr Surabaya”. *Jurnal Ekonomi Dan Bisnis Airlangga*, 31(1), 14.
- [14] Pratiwi, F. and Hasibuan, S. 2020. “Perencanaan Persediaan Bahan Baku Amoxicillin Menggunakan Metode Material Requirement Planning: Studi Kasus”. *Operations Excellence: Journal of Applied Industrial Engineering*, 12(3), 344.
- [15] Arissanto, M., Ayuhikmatin Sekarjati, K. and Susetyo, J. 2022. “Perencanaan Persediaan Bahan Baku Biji Kopi Menggunakan Metode Material Requirement Planning Pada Umkm Cening Jaya”. *Prosiding Snast*, November, C114-122.