

ABSTRAK

Penelitian ini bertujuan menganalisis bobot prioritas risiko pemasok bambu menggunakan metode *Analytical Hierarchy Process* (AHP) di CV Java Bamboo Lamina, mengevaluasi tingkat risiko setiap pemasok bambu menggunakan metode *Failure Mode Effect Analysis* (FMEA) di CV Java Bamboo Lamina, dan mengidentifikasi pemasok yang paling berisiko berdasarkan integrasi metode AHP-FMEA serta merancang strategi mitigasi risiko yang tepat untuk risiko yang diprioritaskan dari pemasok tersebut. Penelitian ini menggunakan pendekatan naratif interpretatif kualitatif yang didukung oleh kuantitatif deskriptif. Pengambilan data pada penelitian ini dilakukan melalui wawancara mendalam kepada manajemen CV Java Bamboo Lamina. Hasil analisis menunjukkan bobot prioritas tertinggi dimiliki kriteria kualitas (0,415), diikuti oleh biaya (0,310), keresponsifan (0,147), pengiriman (0,079), dan fleksibilitas (0,050). Bobot prioritas global tertinggi dimiliki oleh sub-kriteria tingginya tingkat cacat bahan baku (K1). Berdasarkan integrasi AHP-FMEA, pemasok Magelang memiliki tingkat risiko tertinggi (270,449) terutama pada sub-kriteria tingginya tingkat cacat bahan baku (87,441), biaya tambahan akibat cacat bahan baku (55,449), dan tingginya tingkat penolakan bahan baku (53,028). Mitigasi risiko dilakukan pada dua tingkatan, yaitu tingkat strategis operasional dan taktis. Hasil penelitian ini memperkuat teori integrasi AHP-FMEA dapat mengurangi inkonsistensi penilaian subjektif dari FMEA tradisional dan meningkatkan akurasi pengambilan keputusan. Hasil penelitian ini memberikan pedoman bagi manajemen CV Java Bamboo Lamina dan perusahaan serupa di bidang manufaktur bahan baku alami dalam menerapkan sistem pengendalian risiko pemasok yang terstruktur dan sistematis.

Kata kunci: manajemen risiko, risiko pemasok, AHP, FMEA, integrasi AHP-FMEA.

ABSTRACT

This study aims to analyze the priority weights of bamboo supplier risks using the Analytical Hierarchy Process (AHP) at CV Java Bamboo Lamina, evaluate the risk levels of each supplier using the Failure Mode and Effect Analysis (FMEA) method, and identify the most critical supplier based on the integration of AHP-FMEA while designing appropriate mitigation strategies for the prioritized risks. The research adopts a qualitative interpretive–narrative approach supported by descriptive quantitative analysis. Data were collected through in-depth interviews with the management of CV Java Bamboo Lamina. The analysis results indicate that quality holds the highest priority weight (0.415), followed by cost (0.310), responsiveness (0.147), delivery (0.079), and flexibility (0.050). Among the sub criteria, the highest global priority weight is attributed to the high defect rate of raw materials (K1). Based on the integrated AHP–FMEA analysis, the Magelang supplier exhibits the highest overall risk level (270,449), primarily driven by the high defect rate of raw materials (87,441), additional costs due to defective materials (55,449), and the high rejection rate of raw materials (53,028). Risk mitigation is implemented at two levels, strategic operational and tactical to ensure effective reduction of supplier-related risks. This study contributes to the development of upstream supply chain risk management by demonstrating how the integration of AHP and FMEA can reduce subjective inconsistencies in traditional FMEA and improve decision-making accuracy. It also offers practical insights for CV Java Bamboo Lamina and similar companies in the natural raw material manufacturing sector in implementing a more structured and systematic supplier risk control system.

Keywords: risk management, supplier risk, AHP, FMEA, AHP–FMEA integration.