

ABSTRAK

Proyek konstruksi memiliki tingkat kompleksitas dan ketidakpastian yang dapat menimbulkan berbagai risiko serta memengaruhi kelancaran pelaksanaan proyek. Penelitian ini bertujuan untuk mengidentifikasi risiko, menganalisis tingkat risiko, menentukan prioritas risiko, serta menyusun rekomendasi mitigasi pada Proyek Pembangunan Hotel Harper Purwokerto. Metode yang digunakan adalah *Severity Index* (SI) dan *Failure Mode and Effect Analysis* (FMEA). Identifikasi risiko dilakukan melalui observasi lapangan, wawancara, studi literatur, dan penyebaran kuesioner kepada 25 responden yang terlibat dalam pelaksanaan proyek. Hasil identifikasi diperoleh 31 variabel risiko yang dikelompokkan ke dalam tujuh sumber risiko, yaitu *force majeure*, material, tenaga kerja, manajemen proyek, keselamatan dan kesehatan kerja (K3), desain dan teknologi, serta dampak lingkungan/masyarakat. Berdasarkan hasil perhitungan *Severity Index*, nilai SI probabilitas berada pada rentang 23,2%–88,0%, sedangkan nilai SI dampak berada pada rentang 36,8%–92,0%. Risiko kecelakaan kerja di proyek memiliki nilai SI probabilitas sebesar 82,4% dan SI dampak sebesar 92,0%. Selanjutnya, 13 risiko dianalisis menggunakan metode FMEA berdasarkan parameter *Severity*, *Occurrence*, dan *Detection*. Hasil analisis menunjukkan bahwa risiko kecelakaan kerja di proyek memiliki nilai *Risk Priority Number* (RPN) tertinggi sebesar 411,4, dengan nilai *Severity* 9,5, *Occurrence* 7, dan *Detection* 6, sehingga menjadi prioritas utama dalam pengendalian risiko. Risiko lain dengan RPN tinggi meliputi kurangnya pengawasan keselamatan kerja sebesar 355,6, kurangnya penerapan prosedur K3 sebesar 300,7, penggunaan APD tidak lengkap sebesar 285, dan kondisi area kerja tidak aman sebesar 276. Strategi mitigasi yang dominan digunakan adalah risk reduction melalui peningkatan pengawasan, penerapan prosedur kerja, pelatihan, penggunaan APD, dan koordinasi. Hasil penelitian menunjukkan bahwa integrasi SI dan FMEA dapat memberikan gambaran tingkat risiko sekaligus membantu menentukan prioritas penanganan risiko pada proyek konstruksi.

Kata Kunci : Manajemen Risiko, Proyek Konstruksi, *Severity Index*, FMEA, *Risk Priority Number*, Mitigasi Risiko.

ABSTRACT

Construction projects have a high level of complexity and uncertainty that may generate various risks and affect the smooth implementation of the project. This study aims to identify risks, analyze risk levels, determine risk priorities, and develop risk mitigation recommendations for the Harper Hotel Construction Project in Purwokerto. The methods used in this study are Severity Index (SI) and Failure Mode and Effect Analysis (FMEA). Risk identification was conducted through field observations, interviews, literature reviews, and questionnaires distributed to 25 respondents involved in project implementation. The identification process resulted in 31 risk variables, which were classified into seven risk sources: force majeure, materials, labor, project management, occupational safety and health (OSH), design and technology, and environmental/community impacts. Based on the Severity Index analysis, the probability SI values ranged from 23.2% to 88.0%, while the impact SI values ranged from 36.8% to 92.0%. The risk of work accidents on the project had a probability SI of 82.4% and an impact SI of 92.0%. Furthermore, 13 risks were analyzed using the FMEA method based on the Severity, Occurrence, and Detection parameters. The results showed that the risk of work accidents had the highest Risk Priority Number (RPN) of 411,4, with Severity of 9,5, Occurrence of 7, and Detection of 6, making it the highest priority for risk control. Other risks with relatively high RPN values included inadequate safety supervision with an RPN of 355,6, inadequate implementation of OSH procedures with an RPN of 300,7, incomplete use of personal protective equipment with an RPN of 285, and unsafe working conditions with an RPN of 276. The dominant mitigation strategy was risk reduction, implemented through improved supervision, work procedure enforcement, training, personal protective equipment compliance, and coordination. The results indicate that the integration of SI and FMEA can provide a comprehensive overview of risk levels and assist in determining risk management priorities in construction projects.

Keywords : Risk Management, Construction Project, Severity Index, FMEA, Risk Priority Number, Risk Mitigation.