

ABSTRAK

ANALISA PENGENDALIAN WAKTU DENGAN EARNED VALUE ANALYSIS (EVA) DAN CRITICAL PATH METHOD (CPM) PADA PROYEK BANGUNAN PRODUKSI PT. MEGA LIFESCIENCES INDONESIA DI KABUPATEN BOGOR

Penelitian ini mengangkat studi kasus pada proyek pembangunan gedung produksi PT. MEGA Lifesciences Indonesia di Kabupaten Bogor. Tujuan utama penelitian ini adalah untuk menganalisis kinerja pengendalian waktu dan biaya, serta mengidentifikasi faktor-faktor spesifik penyebab keterlambatan guna memprediksi sisa waktu dan biaya penyelesaian proyek secara akurat.

Penelitian ini menggunakan metode deskriptif kuantitatif dengan mengolah data primer dan sekunder seperti Rencana Anggaran Biaya (RAB), jadwal pelaksanaan (master schedule), dan laporan progres aktual. Teknik analisis data menerapkan metode *Earned Value Analysis* (EVA) untuk menghitung varian biaya dan jadwal (CV, SV) serta indeks performa (CPI, SPI). Analisis ini dikombinasikan dengan *Critical Path Method* (CPM) melalui perhitungan *forward* dan *backward pass* untuk menentukan jalur kritis (*critical path*) dan *float* pekerjaan.

Hasil penelitian mengidentifikasi adanya penyimpangan kinerja akibat faktor teknis berupa kesalahan survei (setting-out error) dan faktor manajemen berupa kurangnya koordinasi tim. Melalui perhitungan EVA, diperoleh estimasi biaya dan waktu akhir proyek (EAC dan EAS), sementara metode CPM berhasil memetakan aktivitas kritis yang menjadi prioritas pengawasan. Disimpulkan bahwa integrasi metode EVA dan CPM memberikan gambaran komprehensif mengenai status kesehatan proyek dan menjadi dasar strategi mitigasi untuk mengoptimalkan durasi pekerjaan agar kembali sesuai rencana.

Kata Kunci : Pengendalian Waktu, *Earned Value Analysis* (EVA), *Critical Path Method* (CPM), Manajemen Konstruksi, Keterlambatan proyek.

ABSTRACT

TIME CONTROL ANALYSIS USING EARNED VALUE ANALYSIS (EVA) AND CRITICAL PATH METHOD (CPM) ON THE PT. MEGA LIFESCIENCES INDONESIA PRODUCTION BUILDING PROJECT IN BOGOR REGENCY

This research presents a case study on the production building project of PT. MEGA Lifesciences Indonesia in Bogor Regency. The primary objective of this study is to analyze time and cost control performance, as well as to identify specific factors causing delays to accurately predict the remaining time and cost for project completion.

This study employs a descriptive quantitative method by processing primary and secondary data, such as the Bill of Quantities (BoQ), master schedule, and actual progress reports. The data analysis technique applies the Earned Value Analysis (EVA) method to calculate cost and schedule variances (CV, SV) and performance indices (CPI, SPI). This analysis is combined with the Critical Path Method (CPM) through forward and backward pass calculations to determine the critical path and total float of tasks.

The results identified performance deviations caused by technical factors, namely setting-out errors, and management factors, such as a lack of team coordination. Through EVA calculations, the Estimate at Completion (EAC) and Estimated Actual Schedule (EAS) were obtained, while the CPM method successfully mapped out critical activities that require supervisory priority. It is concluded that the integration of EVA and CPM methods provides a comprehensive overview of the project's health status and serves as a basis for mitigation strategies to optimize work duration and realign it with the original plan.

Keyword : Time control, Earned Value Analysis (EVA), Critical Path Method (CPM), Construction Management, Project Delay.