

## ABSTRAK

**Hotma Juliati Simbolon: Analisis Perbandingan Metode *Precedence Diagram Method* (PDM) dan *Ranked Position Weight Method* (RPWM) dalam Penjadwalan Proyek Pembangunan SD Negeri Mekarjaya 1 Kota Depok. Skripsi, Fakultas Teknik, Universitas Negeri Medan, 2025**

Peningkatan kualitas sumber daya manusia sangat didukung oleh pembangunan infrastruktur pendidikan yang memadai, sehingga pengelolaan proyek konstruksi harus menerapkan penjadwalan yang optimal untuk menghindari keterlambatan. Proyek pembangunan Gedung SD Negeri Mekar Jaya 1 Kota Depok menghadapi permasalahan keterlambatan pada pekerjaan struktur lantai 1, karena metode penjadwalan yang digunakan Kurva S dan *Bar Chart* kurang efektif dalam mengidentifikasi jalur kritis. Hal ini menyebabkan durasi aktual proyek mencapai 194 hari, melampaui rencana awal selama 180 hari. Permasalahan ini mendorong penelitian untuk menganalisis perbandingan efektivitas penggunaan metode *Precedence Diagram Method* (PDM) dan *Ranked Positional Weight Method* (RPWM) dalam menyusun ulang jadwal proyek. Penelitian ini menggunakan metode analisis komparatif dengan menghitung ulang jadwal proyek berdasarkan data aktual, di mana PDM fokus pada lintasan kritis dan logika ketergantungan, sementara RPWM berfokus pada alokasi sumber daya berdasarkan bobot posisi. Hasil analisis menunjukkan bahwa metode PDM menghasilkan durasi total proyek selama 150.5 hari, lebih cepat dibanding metode RPWM berdurasi 155.5 hari. Perbedaan terbesar tampak pada pekerjaan struktur, di mana PDM menyelesaikan pekerjaan tersebut dalam 56 hari, sedangkan RPWM memerlukan 58 hari. Selain itu, pekerjaan atap pada PDM berdurasi 16 hari, sementara pada RPWM mencapai 19 hari. Perbedaan durasi ini menunjukkan bahwa PDM lebih unggul karena mampu menampilkan lintasan kritis dan memanfaatkan aktivitas tumpang tindih (*overlapping*). Sebaliknya, RPWM menyusun urutan pekerjaan berdasarkan tingkat bobot posisi, memprioritaskan aktivitas bobot tertinggi yang cenderung menghasilkan pola kerja linear dan kurang memberi ruang percepatan. Oleh karena itu, metode PDM dinilai lebih optimal untuk proyek ini karena menghasilkan durasi pelaksanaan yang lebih singkat dan efisien.

**Kata kunci:** Penjadwalan Proyek, *Precedence Diagram Method* (PDM), *Ranked Positional Weight Method* (RPWM)

## ABSTRACT

**Hotma Juliati Simbolon: Comparative Analysis of the Precedence Diagram Method (PDM) and the Ranked Position Weight Method (RPWM) in scheduling the construction project of SD Negeri Mekarjaya 1, Depok City. Thesis, Faculty of Engineering, Medan State University, 2025**

The improvement of human resource quality was strongly supported by the development of adequate educational infrastructure, therefore project management in construction was required to be implemented through optimal scheduling to avoid delays. The construction project of SD Negeri Mekar Jaya 1 in Depok City was faced with delays in the first-floor structural work because the scheduling methods previously used, namely the S-Curve and Bar Chart, were considered ineffective in identifying the critical path. This condition resulted in an actual project duration of 194 days, which exceeded the initial plan of 180 days. These issues led to the conduction of a study that was aimed at analyzing the comparative effectiveness of the Precedence Diagram Method (PDM) and the Ranked Positional Weight Method (RPWM) in rescheduling the project. A comparative analysis method was employed, in which the project schedule was recalculated using actual data. The PDM was focused on critical path identification and dependency logic, while the RPWM was focused on resource allocation based on positional weights. The analysis results showed that PDM produced a total project duration of 150.5 days, which was achieved faster than RPWM with 155.5 days. The largest difference was observed in structural work, where the activities were completed in 56 days using PDM, while 58 days were required using RPWM. In addition, roofing work was completed in 16 days using PDM, while 19 days were needed using RPWM. These differences in duration indicated that PDM was considered more advantageous because it was able to present the critical path and allowed overlapping activities. In contrast, RPWM was arranged based on positional weight levels, prioritizing activities with the highest weight, which tended to produce a linear workflow and provided limited room for acceleration. Therefore, PDM was assessed as the more optimal method for this project because it resulted in a shorter and more efficient execution duration.

**Keywords:** Project Scheduling, Precedence Diagram Method (PDM), Ranked Positional Weight Method (RPWM)