

ANALISIS SISTEM PENJADWALAN PRODUKSI DENGAN METODE *NAWAZ ENSCORE HAM* & *CAMPBELL DUDEK SMITH* DI PT GRAMASURYA

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ABSTRAK

PT Gramasurya adalah perusahaan yang bergerak di bidang percetakan, permasalahan yang terjadi adalah keterlambatan penyelesaian produk dengan metode *existing* perusahaan metode *First Come First Serve* (FCFS), dimana perusahaan akan melayani permintaan yang datang terlebih dahulu, sehingga memiliki nilai *Makespan* sebesar 764,65 menit pada 7 *Job* dengan spesifikasi produk buku lipat 4 dan melalui proses bending di bulan Februari 2023. Penelitian bertujuan untuk meminimalkan total waktu penyelesaian *Job* (*Makespan*) dilakukan pengolahan data menggunakan metode *Nawaz Enscore Ham* (NEH) dengan pendekatan *Longest Processing Time* (LPT) dan *Shortest Processing Time* (SPT) serta *Campbell Dudek Smith* (CDS). Hasil pengurutan metode NEH pendekatan LPT dan SPT diperoleh 3-2-4-1-7-5-6 dengan nilai *Makespan* terkecil yaitu 747,70 menit dan *Mean Flow Time* 423,02 menit, lalu hasil perhitungan iterasi metode CDS diperoleh urutan 3-2-1-4-7-5-6 dengan nilai *Makespan* terkecil 747,70 menit dan *Mean Flow Time* 422,97 menit. Hal ini menunjukkan metode NEH pendekatan LPT dan SPT serta CDS terjadi penurunan *Makespan* sebesar 16,95 menit sedangkan untuk hasil *Efficiency Index* 1,023 dan *Relative Error* dengan nilai 2,2%. Nilai dari *Mean Flow Time* metode CDS lebih kecil daripada metode NEH, Sehingga penerapan metode *Campbell Dudek Smith* lebih dapat diandalkan, dikarenakan nilai *Efficiency Index* (EI) sebesar 1,023 dan *Relative Error* (RE) sebesar 2,2%, serta *Mean Flow Time* CDS yang digunakan dalam penelitian ini lebih baik dibandingkan dengan model penjadwalan *First Come First Service* (FCFS) ataupun NEH.

Kata Kunci: Total Waktu Penyelesaian; NEH; CDS; Waktu Proses Terlama; Waktu Proses Tersingkat

PRODUCTION SCHEDULING SYSTEM ANALYSIS USING NAWAZ ENSCORE HAM & CAMPBELL DUDEK SMITH METHOD AT PT GRAMASURYA

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ABSTRACT

PT Gramasurya is a company engaged in the printing sector, the problem that occurs is delays in product completion with the existing company First Come First Serve (FCFS) method, where the company will serve requests that come first, so it has a Makespan value of 764.65 minutes on 7 Jobs with 4 folding book product specifications and going through a bending process in February 2023. The research aims to minimize the total Job completion time (Makespan) data processing using the Nawaz Enscore Ham (NEH) method with the Longest Processing Time (LPT) and Shortest Processing approaches Time (SPT) and Campbell Dudek Smith (CDS). The results of sorting the NEH method with the LPT and SPT approaches were 3-2-4-1-7-5-6 with the smallest Makespan value of 747.70 minutes and Mean Flow Time 423.02 minutes, then the results of the calculation of the iteration of the CDS method obtained the sequence 3- 2-1-4-7-5-6 with the smallest Makespan value of 747.70 minutes and Mean Flow Time of 422.97 minutes. This shows that the NEH method with the LPT and SPT approaches and CDS decreased the Makespan by 16.95 minutes while the Efficiency Index results were 1.023 and the Relative Error was 2.2%. The value of the Mean Flow Time for the CDS method is smaller than the NEH method, so that the application of the Campbell Dudek Smith method is more reliable, because the Efficiency Index (EI) value is 1.023 and the Relative Error (RE) is 2.2%, and the Mean Flow Time CDS is used in this study is better than the First Come First Service (FCFS) or NEH scheduling models.

Keywords: *Total Completion Time; NEH; CDS; Longest Processing Time; Shortest Processing Time*

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