



Makalah Penelitian Tugas Akhir 2022

**MAKALAH
PENELITIAN
TUGAS AKHIR**

**PENENTUAN JUMLAH OPERATOR OPTIMAL
BERDASARKAN ANALISIS BEBAN KERJA
MENGUNAKAN METODE FULL TIME EQUIVALENT (FTE)**

(Studi Kasus di PT Perkakas Rekadaya Nusantara, Subang, Jawa Barat)

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ABSTRACT

PT. Perkakas Rekadaya Nusantara (PRN) is a company engaged in the production of automotive components. PT. PRN has four mass production lines, such as the steering shaft, cylinder, inner tube, and under bracket. Cylinder production lines request additional work periodically due to fatigue, unlike the mass production lines of a steering shaft, inner tube, and under bracket. However, from observations, it was found that the operator was idle because the job was carried out alternately with his co-workers. On the other hand, the company doesn't have a basis for determining the optimal number of operators, thus the company always agrees to add operators to cylinder production line. To find out the optimal number of operators on a cylinder production line, the Full-Time Equivalent (FTE) method was chosen to determine the number of workers based on workload analysis.

This research was conducted by taking data on the working time of each work element in each work process. The data is then processed to determine the standard time required. The standard time is processed into the FTE index to determine the workload received by workers in each process and then adjust the workload and number of workers.

The result showed that there was an underload workload in the production process on the cylinder line, the workload received by each operator on the upsetter machine process was 0,3655 in the underload category, the CNC machine process was 1.096 in the normal category, the workload of punch hole, drill, and buffing operators is 0.37738 in the underload category, and the inspection process workload is 0.381 in the underload category. After adjusting manpower, the optimal number of operators for the upsetting machine process is 2 operators with a workload of 1.0965 for each operator, 2 for punch hole, drill, and buffing operators with a workload of 1.144 for each operator. From the calculation result, it's necessary to change the number of workers to be more optimal from 27 operators to 13 operators.

Keywords: *workload, Full Time Equivalent, standard time, rating factor.*