

PENINGKATAN EFISIENSI LINI PRODUKSI SEWING TOYOSIMA 2 MENGGUNAKAN PENDEKATAN *LINE BALANCING* DI PT XYZ

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INTISARI

Latar Belakang: PT XYZ, perusahaan manufaktur garmen dengan tujuan ekspor Jepang, mengalami penurunan produktivitas akibat ketidakseimbangan lini produksi *sewing* Toyoshima 2. Hal ini berdampak pada tercapainya target produksi harian dan berpotensi mengakibatkan keterlambatan pengiriman barang, yang pada akhirnya dapat merugikan perusahaan. Analisis *line balancing* digunakan untuk mengatasi permasalahan tersebut.

Tujuan Penelitian: Analisis ini bertujuan untuk menyusun skenario terbaik guna meningkatkan efisiensi lini produksi *sewing* Toyoshima 2.

Metode Penelitian: Penelitian ini menggunakan tiga metode *line balancing*, yaitu *Killbridge Wester Heuristic* (KWM), *Ranked Position Weight* (RPW), dan *Large Candidate Rule* (LCR), untuk merancang *workstation* lini produksi *sewing* secara optimal.

Hasil: Penelitian menunjukkan bahwa metode *Largest Candidate Rule* (LCR) dengan skenario implementasi ALBP-TS mampu meningkatkan target produksi sebesar 285 pcs/hari (skenario LCR 2). Skenario ini terpilih sebagai yang paling baik karena menghasilkan *assembly line* baru yang lebih efisien dibandingkan dengan *assembly line* yang saat ini digunakan. Indikator performansi lini produksi yang dihasilkan antara lain *line efficiency* sebesar 71,1%, *smoothness index* 2,9 menit, *line time* 45 menit, dan *idle time* 13,7 menit.

Kesimpulan: Hasil penelitian ini dapat dimanfaatkan oleh PT XYZ sebagai pertimbangan dalam proses perancangan dan pengalokasian elemen kerja serta sumber daya sehingga tujuan dalam proses produksi tercapai.

Kata Kunci: *Killbridge Wester Heuristic* (KWM), *Large Candidate Rule* (LCR), *Line Balancing*, *Ranked Position Weight* (RPW).

IMPROVING THE EFFICIENCY OF TOYOSIMA 2 SEWING PRODUCTION LINE USING LINE BALANCING APPROACH AT PT XYZ

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ABSTRACT

Background: PT XYZ, a garment manufacturing company with Japanese export destinations, experienced a decrease in productivity due to imbalances in the Toyoshima 2 sewing production line. This had an impact on the achievement of daily production targets and could potentially result in delays in the delivery of goods, which in turn could be detrimental to the company. Line balancing analysis was used to address the problem.

Objective: This analysis aims to develop the best scenario to improve the productivity of the Toyoshima 2 sewing production line.

Research Methods: This study uses three line balancing methods, namely Killbridge Wester Heuristic (KWM), Ranked Position Weight (RPW), and Large Candidate Rule (LCR), to optimally design sewing production line workstations.

Results: The study showed that the Largest Candidate Rule (LCR) method with the ALBP-TS implementation scenario was able to increase the production target by 285 pcs/day (LCR scenario 2). This scenario was chosen as the best because it resulted in a new assembly line that is more efficient than the current assembly line. The resulting production line performance indicators include line efficiency of 71.1%, smoothness index of 2.9 minutes, line time of 45 minutes, and idle time of 13.7 minutes.

Conclusion: It is concluded that the results of this study can be utilized by PT XYZ as a consideration in the process of designing workstations and allocating work elements and resources so that goals in the production process are achieved.

Keywords: Killbridge Wester Heuristic (KWM), Large Candidate Rule (LCR), Line Balancing, Ranked Position Weight (RPW).