ABSTRAK

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PERBAIKAN LINI PRODUKSI DENGAN PENDEKATAN *LINE BALANCING* UNTUK PRODUK WASTAFEL PORTABEL DI CV SEMANGAT BARU

Skripsi, Fakultas Sains dan Teknologi (2021).

(xviii + 120 halaman; 35 gambar; 37 tabel; 10 persamaan rumus; 3 lampiran)

Saat ini, pandemi COVID-19 telah membawa banyak perubahan dalam pola hidup masyarakat. Salah satunya yaitu meningkatnya minat masyarakat untuk membeli dan menyimpan produk-produk sanitasi dan kesehatan dalam jumlah banyak. Oleh sebab itu penting bagi industri alat-alat kesehatan untuk memperhatikan ketersediaan alat-alat kesehatan dengan cara mengoptimalkan kapasitas produksinya. Salah satu cara meningkatkan kapasitas produk adalah dengan memiliki sistem produksi yang baik. CV Semangat Baru merupakan perusahaan yang bergerak di bidang manufaktur barang-barang rumah tangga. Dalam situasi pandemi COVID-19 ini, perusahaan memutuskan untuk memproduksi wastafel portable. Saat ini perusahaan memiliki kendala dalam memenuhi *demand* yang berjumlah besar. Berdasarkan pengamatan diketahui penyebabnya adalah CV Semangat Baru belum memiliki lini produksi sehingga pekerjaan tidak terstruktur. Oleh sebab itu, telah dirancang lini produksi untuk CV Semangat Baru menggunakan *line balancing* metode *heuristik Longest Operation Time* (LOT) dan *Ranked Positional Weight* (RPW). Dalam proses produksi wastafel portabel terdapat *bottleneck* pada proses pemanasan di oven. Oleh sebab itu dibuat dua alternatif yaitu tanpa penambahan oven (kondisi 1 oven) dan dengan penambahan oven (kondisi 2 oven). Setelah dilakukan *line balancing* didapati metode dengan *line efficiency* dan *balance delay* yang paling baik adalah metode *Ranked Positional Weight* (RPW) kondisi 2 oven dengan *line efficiency* 96,91% dan *balance delay* 3,09%. Setelah itu, untuk menentukan metode yang terbaik dilakukan analisis dari segi keuangan yaitu menggunakan *Internal Rate of Return* (IRR), *incremental analysis* dan *Net Present Value* (NPV). Berdasarkan analisis dari segi keuangan didapatkan metode terbaik yaitu *Longest Operation Time* (LOT) kondisi 2 oven dengan nilai *Internal Rate of Return* (IRR) 125,63% dan *Net Present Value* (NPV) Rp 213.021.709,13.

Kata Kunci : *Line Balancing, Ranked Positional Weight, Longest Operation Time, Engineering Economy, Internal Rate of Return, Net Present Value.*

Referensi : 22 referensi (1997-2020)

ABSTRACT

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IMPROVEMENT OF PRODUCTION LINES WITH LINE BALANCING METHOD FOR PORTABLE SINK PRODUCTS IN CV SEMANGAT BARU

Thesis, Faculty of Science and Technology (2021).

(xviii + 120 pages, 35 tables, 37 figures, 10 formula, 3 appendices)

Nowadays, the COVID-19 pandemic has brought many changes in people's lifestyles. One of which is the interest in buying and storing large quantities of sanitation and health products. Therefore, it is an important thing for medical equipment industry to pay attention to their stock availability of medical equipment by optimizing their production capacity. One way to increase product capacity is to have a good production system. CV Semangat Baru is a company engaged in manufacturing household goods. Due to the COVID-19 pandemic, the company decided to manufacture a portable sink. Currently, the company is facing problem to keep up with large demand. Based on observations, it is known that CV Semangat Baru doesn't have a production line so the working procedure is not structured. Therefore, a production line for CV Semangat Baru has been designed using line balancing heuristic method Longest Operation Time (LOT) and Ranked Positional Weight (RPW). In the production process there's a bottleneck in the oven heating process. Therefore two alternatives were made, that is without the addition of oven (1 oven condition) and with the addition of an oven (2 oven condition). After the line balancing has been done, the best line efficiency and balance delay method is the Ranked Positional Weight (RPW) method with 2 oven condition, it has the line efficiency 96.91% and balance delay 3.09%. To determine the best method, an analysis from financial perspective will be carried out. The method used is the Internal Rate of Return (IRR), incremental analysis and Net Present Value (NPV). From the financial perspective, the best method is Longest Operation Time (LOT) with 2 oven condition with Internal Rate of Return (IRR) value of 125.63% and a Net Present Value (NPV) of Rp 213.021.709,13.

Keywords : Line Balancing, Ranked Positional Weight, Longest Operation Time, Engineering Economy, Internal Rate of Return, Net Present Value.

References : 22 references (1997-2020)