1. Work Design & Measurement
2. Operations Engineering & Management

MINIMIZING PRODUCTION LATENESS AT PT FIT USING LINE BALANCING APPROACH

A THESIS

Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelor of Engineering in Industrial Engineering

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IDENTIFICATION PAGE

A thesis entitled:

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was examined and approved on

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Yogyakarta, 28 June 2024

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DECLARATION OF ORIGINALITY

I certify that the research entitled “Minimizing Lateness at PT FIT” in this thesis has not already been submitted for any other degree.

I certify that to the best of my knowledge and belief, this thesis which I wrote does not contain the works or parts of the works of other people, except those cited in the quotations and bibliography, as a scientific paper should.

In addition, I certify that I understand and abide the rule stated by the Ministry of Education and Culture the Republic of Indonesia, subject to the provisions of *Peraturan Menteri Pendidikan Nasional Republik Indonesia Nomor 17 Tahun 2010 tentang Pencegahan dan Penanggulangan Plagiat di Perguruan Tinggi.*

Yogyakarta, 28 June 2024

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DEDICATION PAGE

*To **ALMIGHTY GOD**,*
who serves as guidance and the source of strength and knowledge for without His will this would not be possible.

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The author,
Irene Anugrahati Sombolayuk

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ABSTRACT

PT Furnindo Inovasi Teknologi is a company operating in the furniture industry, which produces several types of sofas. Some of the problems that occur in the company include the production process, which is currently unable to fulfill orders on time, production lateness, a lack of workers, and improper placement of tools and materials. However, the main focus of the research is on the problem of production lateness with the root cause of the bottleneck which causes the production line to be less efficient. Therefore, this research aims to reduce production lateness.

The research uses cycle time data, then calculated the standard time using the working time measurement. Next, the current line efficiency value was calculated and the RPW (Ranked Positional Weight) and CPM (Critical Path Method) methods were used as the alternative solutions for improvement. Then, based on this method, line efficiency calculation and analysis of existing alternative solutions are carried out.

The research results stated that there was an increase in line efficiency of 12.96% from the initial efficiency of 63.22% to 76.18%. Apart from that, this research also succeeded in reducing production lateness by 71.02%, from 20 days to 5.80 days.

Keywords: line balancing, bottleneck, ranked positional weight, sofa production, line efficiency