WASTE ANALYSIS IN THE PRODUCTION PROCESS AT GANTO BAKERY

FINAL PROJECT

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ABSTRACT

Ganto Bakery is one of the Bread MSMEs in Padang City which has been established since 2013. The total demand for bread at Ganto Bakery is 7,000 to 8,000 every day. Ideally, one production batch produces 432 loaves of bread over the course of 3 hours. However, often the production process lasts for 3.5 hours or more due to several factors. in the form of waste such as defects, inappropriate processing, unnecessary motion, and excessive transportation. This waste affects the production process time, where there is a repeat of the production process at several workstations. In addition, the production flow is also considered ineffective, so operators often go back and forth because the position of the workstation is not in line. This study aims to identify the highest waste, the causes of waste and provide suggestions for improvements to reduce waste that occurs in the bread production process at Ganto Bakery. The method used in this study is a Lean Manufacturing approach using tools such as Value Stream Mapping (VSM), Waste Assessment Method (WAM) which includes Waste Relationship Matrix (WRM), Waste Assessment Questionnaire (WAQ), Value Stream Analysis Tools (VALSAT) and fishbone diagram. Based on the results of Current VSM processing, a Process Cycle Efficiency (PCE) value of 67.03% was obtained.

Based on the results of Current VSM processing, a Process Cycle Efficiency (PCE) value of 67.03% was obtained. The results of WRM processing showed that unnecessary processes were the highest type of waste (22.11%) which caused other waste. Meanwhile, waste caused by other waste is motion, amounting to 17.89%. WAQ processing found that the highest waste was transportation, amounting to 16.70%, and motion waste with a percentage that was not much different, namely 16.42%. So repairs need to be prioritized. The selected tool for VALSAT is Process Activity Mapping (PAM) with 73 activities. value added was 16.44%, necessary but non value added was 78.08%, and non value added was 5.48%. The causes of transportation waste were analyzed using a Fishbone diagram from the categories of man, material, environment and method, and it was concluded that the current production layout was ineffective, and there were no work standards and work instructions for each process, so it was proposed to conduct a relayout and create SOPs and work instruction. After improvements, lead time was reduced by 38.67%, as well as an increase in PCE by 10.64%.

Keywords: Lean Manufacturing, Production Time, Value Stream Analysis Tools *(VALSAT)*, Value Stream Mapping (VSM), Waste Assessment Method (WAM)

ABSTRAK

Ganto Bakery adalah salah satu UMKM Roti di Kota Padang yang sudah berdiri sejak tahun 2013. Total permintaan roti pada Ganto Bakery sebanyak 7.000 hingga 8.000 setiap harinya. Idealnya, satu batch *produksi menghasilkan 432 roti selama 3 jam. Namun, seringkali proses produksi berlangsung selama 3,5 jam bahkan lebih dikarenakan beberapa faktor. berupa adanya pemborosan seperti* defects, inappropriate processing, unnecessary motion, *dan* excessive transportation. *Pemborosan tersebut mempengaruhi waktu proses produksi, dimana terjadi pengulangan proses produksi di beberapa stasiun kerja. Selain itu aliran produksi juga dinilai tidak efektif, sehingga operator sering kali bolak balik dikarenakan posisi stasiun kerja tidak sejalan. Penelitian ini bertujuan untuk mengidentifikasi pemborosan tertinggi, penyebab pemborosan dan memberikan usulan perbaikan untuk mengurangi pemborosan yang terjadi pada proses produksi roti di Ganto Bakery. Metode yang digunakan dalam penelitian ini adalah pendekatan Lean Manufacturing menggunakan tools seperti* Value Stream Mapping *(VSM),* Waste Assessment Method *(WAM) yang mencakup* Waste Relationship Matrix *(WRM),* Waste Assessment Questionnaire *(WAQ),* Value Stream Analysis Tools *(VALSAT) dan* fishbone diagram.

Berdasarkan hasil pengolahan Current *VSM diperoleh nilai* Process Cycle Efficiency *(PCE) sebesar 67,03%. Hasil pengolahan WRM didapatkan* unnecessary process *merupakan jenis pemborosan tertinggi (22.11%) untuk menyebabkan adanya pemborosan lainnya. Sedangkan pemborosan yang diakibatkan oleh pemborosan lain adalah* motion*, sebesar 17.89%. Pengolahan WAQ didapatkan pemborosan tertinggi adalah Transportasi, sebesar 16.70%, dan waste motion dengan persentase yang tidak beda jauh yaitu 16.42%. Sehingga perlu diprioritaskan untuk dilakukan perbaikan. Tool terpilih pada VALSAT yaitu* Process Activity Mapping *(PAM) dengan 73 aktivitas. value added sebesar 16,44%, necessary but non value added sebesar 78,08%, dan non value added sebesar 5,48%. Penyebab pemborosan transportasi dianalisis dengan* Fishbone diagram *dari kategori man, material, lingkungan, dan metode, dan disimpulkan bahwa tata letak produksi saat ini tidak efektif, serta belum adanya standar kerja dan work instruction pada setiap proses, sehingga diusulkan untuk melakukan* relayout *dan pembuatan* SOP *dan* work instruction*. Setelah perbaikan didapatkan pengurangan* leadtime *sebesar 38.67%, serta peningkatan PCE sebesar 10.64%.*

Kata Kunci: Lean Manufacturing, Value Stream Analysis Tools *(VALSAT),* Value Stream Mapping *(VSM), Waktu Produksi*, Waste Assessment Method *(WAM)*