

# **ANALISIS WASTE DENGAN PENDEKATAN *LEAN MANUFACTURING* MENGGUNAKAN SIMULASI DI UMKM KERUPUK SINAR PAK JALI**

Grace Tridara Relia

## **ABSTRAK**

UMKM Kerupuk Sinar Pak Jali adalah sebuah UMKM berlokasi di Bekasi, Jawa Barat yang telah beroperasi dalam bidang produksi kerupuk putih sejak tahun 1996. Pada proses produksi, ditemukan *waste* atau pemborosan dalam mengelola kerupuk putih, mulai dari bahan baku hingga barang setengah jadi. Oleh karena itu, diperlukan identifikasi dan usulan perbaikan untuk meminimalisir pemborosan yang terjadi dengan menerapkan *Lean Manufacturing*. Berdasarkan hasil identifikasi, pemborosan paling dominan dalam produksi kerupuk putih yakni *Waste of Overproduction, Inappropriate Processing, Waiting, dan Transportation. Tools* yang digunakan dalam mengidentifikasi pemborosan dominan yakni menggunakan *7 Waste, Value Stream Analysis Tools (VALSAT), Process Activity Mapping (PAM), Fault Tree Analysis (FTA), serta Failure Mode and Analysis Effect (FMEA)*. Melalui hasil pengolahan data, diketahui bahwa usulan perbaikan mampu meminimalisir *lead time* produksi hingga 8.653,973 detik. Selain itu, melalui hasil simulasi ProModel, terjadi peningkatan produksi sebesar 482.467,5 pcs atau 50,91%.

**Kata Kunci:** *Waste, Value Stream Analysis Tools, Process Activity Mapping, Fault Tree Analysis, Failure Mode and Analysis Effect, Simulasi.*

**WASTE ANALYSIS USING A LEAN MANUFACTURING APPROACH  
WITH SIMULATION AT UMKM KERUPUK SINAR PAK JALI**

Grace Tridara Relia

**ABSTRACT**

UMKM Kerupuk Sinar Pak Jali is a UMKM located in Bekasi, West Java that has been operating in the production and sales of crackers since 1996. In its production process, waste have been identified in the management of crackers, from raw materials to semi-finished products. Therefore, identification and improvement are needed to minimize the occurring waste by implementing Lean Manufacturing. Based on the identification results, the most dominant types of waste in the production of crackers are Overproduction, Inappropriate Processing, Waiting, and Transportation. The tools used to identify the dominant waste include the 7 Waste, Value Stream Analysis Tools (VALSAT), Process Activity Mapping (PAM), Fault Tree Analysis (FTA), serta Failure Mode and Analysis Effect (FMEA). Data processing results indicate that the proposed improvements can reduce production lead time by up to 8.653,973 seconds. Additionally, based on simulation using ProModel, there was an increase in production by 482.467,5 pieces or 50,91%.

**Keywords:** Waste, Value Stream Analysis Tools, Process Activity Mapping, Fault Tree Analysis, Failure Mode and Analysis Effect, Simulation.