ABSTRACT

The cement packaging process at PT. Solusi Bangun Indonesia Cilacap has a defect rate of 0.54% of total production during the period from January to July 2024, resulting in a financial loss of up to IDR 320,754,000 for cement bag raw materials. These defective products also lead to inefficiencies and decreased productivity due to unnecessary activities such as redundancy and rework. This study applies the Lean Six Sigma approach using the DMAIC (Define, Measure, Analyze, Improve, Control) methodology to reduce waste and improve the efficiency and quality of the cement packaging process. The research stages include identifying waste using Current Value Stream Mapping (CVSM), measuring Process Cycle Efficiency (PCE), and conducting root cause analysis with Pareto diagrams and Fault Tree Analysis (FTA). The proposed solution involves creating a Future Value Stream Mapping (FVSM) to reduce waste and improve process efficiency. The study results indicate that the two main types of waste with the highest percentages are overprocessing (18.2%) and defects (17%). Therefore, the improvement efforts focus on addressing these two types of waste to enhance efficiency and product quality. This study contributes to a more structured quality control system to support the effectiveness of the packaging process at PT. SBI Cilacap.

Keywords*: lean six sigma, cement, quality, defect, DMAIC.*