

## **ABSTRACT**

UMKM Sandal Bandol Calvin in Purwokerto faces the problem of a high defect rate in slipper sandals products, with an average of 4.63%, exceeding the tolerance limit of 3%. The dominant defects include holes in the sandals, incorrect stitching on the straps, and peeling glue. This study aims to provide solutions to these problems using the Six Sigma method with a DMAIC approach. In the Define phase, check sheets and SIPOC were used to identify the types of defects. The Measure phase included the creation of control charts (P-chart), calculation of DPMO, and determination of the sigma level. The Analyze phase was conducted using Pareto diagrams and fishbone diagrams to identify the main causes of defects. Improvement proposals in the Improve phase included implementing SOPs for material inspection, scheduling raw materials, routine machine maintenance, and enhancing work comfort. The Control phase was carried out to ensure the sustainability of improvements. The results showed an increase in the sigma level from 3.87 to 4.0 and a decrease in DPMO from 9,251 to 7,913, indicating that the production process is now much more controlled and of higher quality.

**Keywords:** quality control, sandal bandol, six sigma, DMAIC, product quality