ABSTRACT

Umega Konveksi Purwokerto faces the problem of high defect rates in elementary school batik uniform products, especially in the form of skewed pockets and loose buttons. This problem has an impact on increasing operational costs and inefficient production time. This study aims to identify the main causes of defects and provide improvement solutions to reduce the number of defective products. The method used is Six Sigma with DMAIC (Define, Measure, Analyze, Improve, Control) approach, as well as 5W+1H analysis to design solutions. The results showed that the product defect rate reached 6.95% with a DPMO value of 34474.92 and an average sigma value of 3.34. From the pareto analysis and cause-and-effect diagram, it was found that the main factors causing defects were inaccuracy during sewing and the use of low-quality thread. Based on these findings, this study provides several suggestions for improvement including: clear standard operating procedures for Quality Control, evaluation of tailor performance, and standard operating procedures for sewing machines.

Keywords: *Quality Control, Six Sigma, DMAIC, Defective Products, Batik Uniforms*