

ABSTRACT

CV Main Kids is a garment manufacturing company specializing in children's clothing. However, it continues to face quality issues in the hemming process, particularly during the fabric folding, stitching, and thread trimming stages. The main problem identified is the non-conformance of stitching results to the Critical to Quality (CTQ) specification (20 ± 5 mm), such as slanted folds, waviness, inconsistent hem widths, and thread trimming too close to the fabric, which causes damage. This study aims to identify the root causes of these defects and propose process improvements using the Six Sigma methodology through the Define, Measure, Analyze, and Improve (DMAI) phases.

The analytical methods used include fishbone diagrams, 5 Why's, 5W + 1H, Cost Benefit Analysis, and process capability measurements using the Defects Per Million Opportunities (DPMO) indicator. The results show that the proposed improvement significantly reduced the DPMO value and was validated by hemming and finishing operators as a solution that improves consistency and work efficiency. This research demonstrates that the DMAI methodology is an effective approach to enhancing the quality of the hemming process, improving production efficiency, and providing practical solutions for small and medium-sized enterprise (SME) production environments.

Keywords: *Six Sigma, hemming, seam guide, thread trimmer, defect, overdeck, DMAI.*