

ABSTRAK

PT Globalindo Intimates merupakan perusahaan yang memproduksi pakaian dalam wanita. Tingginya tingkat cacat produk pada proses *sewing bra style 76338* di PT Globalindo Intimates menjadi perhatian utama dalam penelitian ini. Persentase cacat yang berkisar antara 18% hingga 28% setiap minggunya jauh melebihi batas toleransi perusahaan sebesar 5%. Cacat-cacat yang sering muncul antara lain *long thread* (benang panjang), *symmetry* (tidak seimbang kiri-kanan), *uneven* (tidak seimbang atas-bawah), *soil* (kotor), *fullness* (menggelembung), dan *puckered* (kerut). Kondisi ini menyebabkan meningkatnya aktivitas *rework*, penurunan efisiensi produksi, serta berpotensi menurunkan kepercayaan *buyer* terhadap mutu produk.

Penelitian ini menggunakan pendekatan *Six Sigma* dan metode *Failure Mode and Effect Analysis* (FMEA) untuk menganalisis dan mengurangi cacat produk. Pada tahap *define*, dilakukan identifikasi proses menggunakan diagram SIPOC, sedangkan pada tahap *measure* dilakukan pengidentifikasian CTQ dan perhitungan peta kendali P untuk mengevaluasi kestabilan proses. Pengukuran baseline kinerja dilakukan melalui perhitungan DPMO dan level sigma, yang menghasilkan level sigma yaitu 3,97. Tahap *analyze* menggunakan diagram pareto dan *fishbone* diagram untuk mengidentifikasi cacat dominan dan akar penyebabnya. Selanjutnya, dilakukan penilaian RPN pada masing-masing cacat menggunakan FMEA.

Hasil analisis menunjukkan bahwa empat jenis cacat utama memiliki nilai RPN di atas rata-rata, yaitu *symmetry* (448), *long thread* (432), *uneven* (392), dan *soil* (378), sehingga menjadi prioritas dalam perbaikan. Usulan perbaikan meliputi pembuatan SOP, pelatihan ulang operator, penggunaan alat bantu, serta audit kebersihan harian. Pendekatan sistematis melalui *Six Sigma* dan FMEA terbukti mampu mengidentifikasi penyebab cacat secara akurat serta memberikan solusi yang tepat guna meningkatkan mutu dan efisiensi proses produksi di perusahaan.

Kata kunci: Six Sigma, DMIAC, FMEA, Produk *Bra*, *Sewing*

ABSTRACT

PT Globalindo Intimates is a company that manufactures women's undergarments. The high defect rate in the sewing process of bra style 76338 has become a major concern in this study. The defect percentage ranges from 18% to 28% per week, which significantly exceeds the company's tolerance limit of 5%. The most frequent defects include long thread, symmetry (imbalance between left and right sides), uneven (imbalance between top and bottom), soil (dirt or stains), fullness (bulging), and puckered (wrinkles). This situation leads to increased rework, decreased production efficiency, and a potential decline in buyer confidence regarding product quality.

This research applies the Six Sigma approach and the Failure Mode and Effect Analysis (FMEA) method to analyze and reduce product defects. In the define phase, the production process was identified using a SIPOC diagram. In the measure phase, the identification of CTQ and P control charts were calculated to evaluate process stability. Baseline performance measurement was carried out through DPMO and sigma level calculations, resulting in sigma 3,97 . In the analyze phase, pareto diagrams and fishbone diagrams were used to identify dominant defects and their root causes. Subsequently, the RPN values of each defect were assessed using FMEA.

The analysis results show that four major defects had RPN values above the average: symmetry (448), long thread (432), uneven (392), and soil (378), which were prioritized for corrective actions. The proposed improvements include the development of SOPs, retraining of operators, utilization of visual aids, and implementation of daily cleanliness audits. A systematic approach through Six Sigma and FMEA has proven effective in identifying defect causes and offering appropriate solutions to improve product quality and production efficiency.

Keywords: Six Sigma, DMAIC, FMEA, Bra Product, Sewing