

INTISARI

Penelitian ini bertujuan untuk mengidentifikasi akar penyebab kecacatan produk serta merumuskan solusi yang tepat guna mengurangi tingkat kecacatan pada proses produksi tas rajut di PT Dewi Mahasadu. Penelitian ini menggunakan pendekatan Six Sigma dengan metode DMAIC (Define, Measure, Analyze, Improve, Control). Tahap Define dilakukan dengan menganalisis pengembalian produk dari pelanggan dan mengidentifikasi tujuh aspek Critical to Quality yang didukung dengan analisis Voice of Customer. Tahap Measure dilakukan melalui pemantauan p-chart, penentuan DPMO, dan pengukuran sigma level yang menunjukkan bahwa sebagian besar bulan pada periode Juli-Desember 2024 berada di luar batas kendali statistik. Tahap Analyze dilakukan dengan menggunakan diagram Pareto, cause and effect diagram, dan wawancara mendalam yang menghasilkan lima aspek akar penyebab utama: Man, Method, Machine, Measurement, dan Environment. Tahap Improve dilakukan melalui brainstorming dan analisis Five Whys untuk merumuskan solusi yang aplikatif dan relevan berdasarkan akar penyebab yang telah diidentifikasi. Solusi yang diusulkan antara lain pelatihan lintas fungsi, penyusunan SOP tertulis, sistem evaluasi kinerja, penguatan pengawasan, serta perbaikan layout kerja dan perawatan alat. Untuk menjamin keberlanjutan perbaikan, tahap Control dilakukan dengan menerapkan empat jenis check sheet yaitu Sigma Level Control Sheet, Defect per Days Control Sheet, Operator Training and Socialization Sheet, dan Supervisor Performance Evaluation Sheet. Hasil penelitian ini diharapkan dapat memberikan kontribusi nyata terhadap peningkatan kualitas produksi dan efektivitas sistem pengendalian mutu di PT Dewi Mahasadu.

Kata kunci: Six Sigma, DMAIC, kualitas, *Cause and Effect Diagram*, *brainstorming*, *Check sheet*, *Pareto Diagram*, *Voice of Customer*

ABSTRACT

This study aims to identify the root causes of product defects and formulate appropriate solutions to reduce the defect rate in the production process of knitted bags at PT Dewi Mahasadu. The study adopts the Six Sigma approach using the DMAIC (Define, Measure, Analyze, Improve, Control) methodology. The Define phase was carried out by analyzing product returns from customers and identifying seven aspects of Critical to Quality, supported by Voice of Customer analysis. The Measure phase involved monitoring p-charts, determining DPMO, and measuring the sigma level, which indicated that most months within the July–December 2024 period were outside statistical control limits. The Analyze phase utilized Pareto diagrams, cause and effect diagrams, and in-depth interviews to identify five main root cause aspects: Man, Method, Machine, Measurement, and Environment. The Improve phase was conducted through brainstorming and Five Whys analysis to derive applicable and relevant solutions based on the identified root causes. The proposed solutions include cross-functional training, development of written SOPs, performance evaluation systems, enhanced supervision, layout improvement, and equipment maintenance. To ensure the sustainability of improvements, the Control phase involved the implementation of four types of check sheets: Sigma Level Control Sheet, Defect per Days Control Sheet, Operator Training and Socialization Sheet, and Supervisor Performance Evaluation Sheet. The results of this study are expected to provide a tangible contribution to improving production quality and the effectiveness of the quality control system at PT Dewi Mahasadu.

Keywords: Six Sigma, DMAIC, quality, Cause and Effect Diagram, brainstorming, check sheet, Pareto Diagram, Voice of Customer