# PENGENDALIAN KUALITAS PRODUKSI UNTUK MEMINIMALIKAN CACAT PRODUK BUKU DENGAN METODE *LEAN SIX SIGMA* DI PERCETAKAN ABC

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## ABSTRAK

Tingginya tingkat cacat pada produk buku di Percetakan ABC berdampak pada kerugian finansial dan penurunan kepuasan pelanggan. Tujuan penelitian adalah mengidentifikasi jenis cacat dominan, menganalisis penyebabnya, dan memberikan usulan perbaikan guna meningkatkan kualitas produksi. Menerapkan metode *Lean Six Sigma* melalui pendekatan DMAIC (*Define, Measure, Analyze, Improve, Control*). Pada tahap *Define*, digunakan diagram SIPOC dan 9 item *requirement*. Tahap *Measure* memanfaatkan *Current Value Stream Mapping* (CVSM), pengisian *Waste Assessment Model* (WAM), *Waste Relationship Matrix* (WRM), *Waste Assessment Questionnaire* (WAQ), serta perhitungan *level sigma* untuk mengevaluasi kinerja proses. Tahap *Analyze* menerapkan *Pareto Chart*, FMEA, dan *Fault Tree Analysis* (FTA) untuk mengungkap akar masalah. Pada fase *Improve*, dirancang *checklist* manual, pelatihan operator, inspeksi acak, metode 5W+1H, dan *Future Value Stream Mapping* (FVSM) berperan dalam alat visual keadaan ideal. Implementasi perbaikan berhasil menurunkan DPMO menjadi 5.714,835, meningkatkan *level sigma* menjadi 4,131, dan mengurangi total waktu produksi sebesar 1.478,93 detik melalui 28 aktivitas.

**Kata kunci:** *Lean Six Sigma*, DMAIC, *Waste*, Pengendalian Kualitas.

# *PRODUCTION QUALITY CONTROL TO MINIMIZE BOOK DEFECTS USING LEAN SIX SIGMA AT ABC PRINTING*

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## *ABSTRACT*

*High defect rates in book production at ABC Printing have resulted in financial losses and decreased customer satisfaction. This study aims to identify the dominant defect types, analyze their root causes, and propose corrective measures to improve production quality. The Lean Six Sigma methodology was applied via the DMAIC framework (Define, Measure, Analyze, Improve, Control). In the Define phase, a SIPOC diagram and nine requirement items were established. The Measure phase employed Current Value Stream Mapping (CVSM), the Waste Assessment Model (WAM), the Waste Relationship Matrix (WRM), the Waste Assessment Questionnaire (WAQ), and sigma-level calculations to assess process performance. During Analyze, Pareto Chart, FMEA, and Fault Tree Analysis (FTA) were used to uncover root causes. In the Improve phase, a manual checklist, operator training, random inspections, the 5W+1H method, and Future Value Stream Mapping (FVSM) were designed as visual tools. Implementation reduced DPMO to 5,714.835, raised the sigma level to 4.131, and cut total production time by 1,478.93 seconds across 28 activities.*

***Keywords:*** *Lean Six Sigma,* DMAIC*, Waste, Quality Control*.