

ABSTRACT

QUALITY CONTROL ANALYSIS USING THE SIX SIGMA METHOD (A Study at Nuri Konveksi Tasikmalaya)

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Nuri Konveksi Tasikmalaya is a company engaged in the production of mukena (Muslim prayer garments). In its production process, the defect rate was found to exceed the tolerance limit established by the company, which may reduce product quality and customer satisfaction. This condition indicates the need for a more effective quality control method to identify and reduce the causes of product defects. This research aims to analyze the implementation of quality control in mukena production at Nuri Konveksi Tasikmalaya, apply the Six Sigma method for quality control, and examine the differences in product quality before and after the implementation of Six Sigma. This research employed a quantitative method with a verificative approach. The analysis was conducted using the Six Sigma method through the DMAIC (Define, Measure, Analyze, Improve, and Control) stages. The analytical tools used included SIPOC diagrams, Critical to Quality (CTQ), Defect Per Million Opportunities (DPMO), sigma level calculations, p-control charts, Pareto diagrams, fishbone diagrams, the 5W+1H approach, and a paired sample t-test. The results showed that the quality control system at Nuri Konveksi had not been fully optimized. The production process achieved a sigma level ranging from 3 to nearly 4 sigma, with untidy stitching identified as the most dominant defect type. The main causes of defects were related to human factors, machines, work methods, materials, and the work environment. The results of the paired sample t-test indicated a significant difference in product quality before and after the implementation of Six Sigma. Therefore, the Six Sigma method has proven effective in improving the quality of mukena products at Nuri Konveksi Tasikmalaya.

Keywords: *Quality Control, Six Sigma, DMAIC, Product Defects, Mukena.*

ABSTRAK

ANALISIS PENGENDALIAN KUALITAS DENGAN MENGUNAKAN METODE *SIX SIGMA*

(Penelitian Pada Perusahaan Nuri Konveksi Tasikmalaya)

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Nuri Konveksi Tasikmalaya merupakan perusahaan yang bergerak di bidang produksi mukena. Dalam proses produksinya masih ditemukan tingkat kecacatan produk yang melebihi batas toleransi yang ditetapkan perusahaan, sehingga berpotensi menurunkan kualitas produk dan kepuasan konsumen. Kondisi tersebut menunjukkan perlunya penerapan metode pengendalian kualitas yang lebih efektif untuk mengidentifikasi dan mengurangi penyebab kecacatan produk. Penelitian ini bertujuan untuk menganalisis pelaksanaan pengendalian kualitas produk mukena pada Nuri Konveksi Tasikmalaya, menerapkan metode *Six Sigma* dalam pengendalian kualitas, serta mengetahui perbedaan kualitas produk sebelum dan sesudah penerapan metode *Six Sigma*. Metode penelitian yang digunakan adalah metode kuantitatif dengan pendekatan verifikatif. Analisis dilakukan menggunakan metode *Six Sigma* melalui tahapan DMAIC (*Define, Measure, Analyze, Improve, dan Control*). Alat analisis yang digunakan meliputi diagram SIPOC, *Critical to Quality* (CTQ), *Defect Per Million Opportunities* (DPMO), perhitungan sigma, peta kendali (*p-chart*), diagram Pareto, *fishbone diagram*, pendekatan 5W+1H, serta uji beda *paired sample t-test*. Hasil penelitian menunjukkan bahwa pengendalian kualitas pada Nuri Konveksi belum berjalan optimal. Nilai sigma proses produksi berada pada kisaran 3 hingga mendekati 4 sigma dengan jenis cacat dominan berupa jahitan tidak rapi. Faktor penyebab utama kecacatan berasal dari faktor manusia, mesin, metode kerja, material, dan lingkungan. Hasil uji beda menunjukkan adanya perbedaan kualitas produk yang signifikan sebelum dan sesudah penerapan metode *Six Sigma*. Dengan demikian, metode *Six Sigma* terbukti efektif dalam meningkatkan kualitas produk mukena pada Nuri Konveksi Tasikmalaya.

Kata Kunci: Pengendalian Kualitas, *Six Sigma*, DMAIC, Produk Cacat, Mukena.