ABSTRAK

Reytama Konveksi merupakan sebuah Konveksi rumahan yang memproduksi kemeja/PDH (Pakaian Dinas Harian), kaos, jaket, almamater, *hoodie*, celana, rok, *sweater*, dan *crewneck* yang berlokasi di Kabupaten Bantul, Yogyakarta. Reytama Konveksi menggunakan sistem produksi *make to stock* (MTS) dan *make to order* (MTO). Permasalahan yang dihadapi adalah masih adanya cacat produk dalam proses produksinya dikarenakan sistem pengendalian kualitas yang diterapkan hanya sebatas *quality control* (QC) pada produk jadi pada tahap *finishing*, sehingga belum ada sistem pengendalian kualitas yang berkelanjutan (*continuous improvement*) uuntuk upaya mengurangi *waste* cacat produk.

Pengendalian kualitas dilakukan menggunakan metode *Six Sigma* dengan tahapan DMAIC (*Define*, *Measure*, *Analyze*, *Improve*, *Control*) untuk mengetahui karakteristik cacat produk, faktor yang menyebabkan cacat pada produk dan perbaikan terhadap faktor penyebab cacat tersebut dan metode FMEA untuk mengidentifikasi potensi kegagalan berdasarkan nilai RPN.

Pada tahap *define* diketahui karakteristik kebutuhan pelanggan pada kemeja/PDH adalah dilihat dari kenyamanan penggunaan, kesempurnaan bordir, dan ketahanan produk. Tahap *measure* diketahui persentase cacat tertinggi berdasarkan diagram pareto yaitu cacat jahitan tidak lurus sebesar 48,34%, cacat bordir yang tidak rapi/tidak sesuai 31,70%, dan cacat jarak kancing yang tidak sesuai 19,96%, kemudian didapatkan nilai sigma sebesar 3,58. Berdasarkan diagram *fishbone* pada tahap *analyze*, penyebab cacat disebabkan oleh faktor material, mesin, manusia, metode dan lingkungan. Hasil analisis FMEA diketahui nilai RPN tertinggi pada cacat jahitan yang tidak lurus sebesar 245 karena faktor pekerja yang kurang teliti dan nilai RPN tertinggi pada cacat bordir yang tidak rapi/tidak sesuai sebesar 224 karena tidak adanya SOP. Tahap *improve* melakukan rencana tindakan perbaikan menggunakan 5W+1H. Tahap *control* dilakukan penerapan rekomendasi dan menghasilkan penurunan jumlah *defect* sebesar 2,76% dan peningkatan nilai sigma sebesar 3,74.

Kata kunci: *Six Sigma, DMAIC, FMEA,* Pengendalian Kualitas

Quality Control Using The Six Sigma

and FMEA Method to Reduce

Product Defects

(Case Study: UMKM Reytama Konveksi, Bantul, DIY)

ABSTRACT

Reytama Convection is a home convection that produces shirts/PDH (Daily Service Wear), t-shirts, jackets, almamater, hoodies, pants, skirts, sweaters and crewnecks located in Bantul Regency, Yogyakarta. Reytama Convection uses a make to stock (MTS) and make to order (MTO) production system. The problem faced is that there are still product defects in the production process because the quality control system that is applied is only limited to quality control (QC) on finished products at the finishing stage, so there is no continuous quality control system to reduce defective product defects.

Quality control is carried out using the Six Sigma method with the DMAIC (Define, Measure, Analyze, Improve, Control) stages to determine the characteristics of product defects, factors that cause defects in products and improvements to factors that cause these defects and the FMEA method to identify potential failures based on the RPN value.

At the define stage, it is known that the characteristics of customer needs for shirts/PDH are seen from the comfort of use, embroidery perfection, and product durability. In the measure stage, it is known that the highest percentage of defects is based on the Pareto diagram, namely defects in straight stitches of 48.34%, embroidery defects that are not neat/not appropriate, 31.70%, and defects in button spacing that do not match 19.96%, then a sigma value of 3.58 is obtained. Based on the fishbone diagram at the analyze stage, the causes of defects are caused by material, machine, human, method and environmental factors. The results of the FMEA analysis show that the highest RPN value is 245 for defects in stitches that are not straight due to the factor of careless workers and the highest RPN value for defects in embroidery that is not neat / not suitable is 224 because there is no SOP. The improve stage carries out a corrective action plan using 5W+1H. The control stage is carried out by implementing recommendations and resulting in a decrease in the number of defects by 2.76% and an increase in the sigma value of 3.74.

Keywords: *Six Sigma, DMAIC, FMEA, Quality Control*