

**SUGGESTION FOR INCREASING QUALITY TO MINIMIZE
THE NUMBER OF DEFECTS IN THE SPORTS APPAREL PRODUCT
AT PT. ABC USING SIX SIGMA METHOD**

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ABSTRACT

PT. ABC is one of the companies that produces sports clothing in many brands. The largest percentage in the production process at this company is the "N" brand. Until now, the company is still facing problems of products quality that are still not optimal. Quality problem is indicated by the large number of defects generated within one month of production. To address these problems, it is necessary to improve the quality, focusing on the type of defect that gives the biggest contribution.

To overcome the problems of a defective product, it is used Six Sigma, with the principle of achieving zero defects or achieving the number of defective products of 3.4 parts per million. In Six Sigma there are five steps, called DMAIC (Define, Measure, Analyze, Improve, Control). In the Define phase, conducted sports apparel production process definition and determination of Critical to Quality (CTQ). In the Measure phase, performed calculations, DPMO sigma levels, and as well as process stability calculations. Then, analyze the performance of the production of sports clothing which is then analyzed the causes of defects. In the Improve process, given the proposal that is based on the analysis conducted on the Analyze phase. Suggestions will be given to reduce the number of defects that arise in the "N" sports apparel brand.

In this study case, obtained three CTQ, that is stitching tidiness, product hygiene, and product conformity with the specifications of the customer wants. Based on three CTQ, there are 23 kinds of defects that found in three areas of the production of sports clothes. Sewing department with the largest defect is broken / stitch, cutting department with the largest defect is dirty, and finishing department with the biggest defect is hole. The main factors that affect three types of defect, the sewing machine is too old, the thread isn't feasible, the use of machines that are still manual, and depletion of an iron plate. The secondary factor are that are lack of discipline, , lack of training, lack of motivation for workers, workers used a chair is not ergonomic. Based on these factors, then given the proposal as follows: periodic machine maintenance, the addition of QC for thread, using automatic machines, and periodic replacement of iron plate. Other suggestions are given the training routine, giving variety to the workers' motivation, and determination of labor standards for workers, giving an ergonomic chairs, so as to reduce the incidence of defect in sports clothing .

Keywords :six sigma, sport clothing, Critical to Quality