

ABSTRACT

The quality of a product is the suitability of the product for use and meets customer needs. A product needs to go through a production process that converts raw material input into a finished product that has quality characteristics. So the production process is important to maintain product quality. Elsan Hijab is a small and medium-sized enterprise (UMKM) that produces hijabs and has been established since 2019. One of the products produced is oval hijabs. To market products, companies need special criteria in the production process that must be met, namely Critical to Quality (CTQ). However, in production results, the number of defective products exceeds the company's tolerance limit, namely 1%. The highest number of defective products is produced at the cutting process stage so that the cutting process CTQ is not met.

This research aims to identify the factors that cause defects at the cutting process stage and design proposed tools to minimize the occurrence of defects during the cutting process using the QFD method based on the results of analysis using the DMAI approach. DMAI (Define, Measure, Analyze, Improve) is a stage in six sigma for solving process-related problems. At the define stage, identification is carried out to determine the main problem using a fishbone diagram. At the measure stage, measurements of process stability and capability are carried out. At the analyze stage, analysis is carried out using the 5 why's method to find out the root cause of each problem factor, then FMEA analysis to find out and determine the priority for improvement. In the improve stage, an improvement design is carried out in the form of a tool using the QFD method.

The result of the proposed solution is in the form of a pattern printing tool that can make the operator's work easier when cutting fabric so that the operator can cut the fabric according to the shape of the pattern print. Assuming that defective products produced are reduced by 50%, a new sigma level value of 4.16 is obtained, which is an increase of 0.25 from the previous sigma level of 3.91.

Key Words – [Elsan Hijab, defect, DMAI, QFD]