

## **ABSTRACT**

*Elsan Hijab is an original hijab brand in Indonesia that was established in 2019. Various models of hijab are produced and marketed. Pashmina inner which is of the ceruty baby doll type and the inner is made of jersey fabric is one of the models produced. Elsan Hijab sets specific criteria in the production process that must be met using Critical to Quality (CTQ). In the period January 2021 - November 2022, many production defects exceed the percentage of tolerance for product defects that have been determined by the Elsan Hijab Company, which is 1%. This study aims to identify the factors that cause defects at the sewing process stage using the DMAI analysis approach and to design a proposed tool to minimize defects using the QFD design method. DMAI analysis begins with the define stage, namely identifying to determine the main problem by knowing the process with the highest number of unfulfilled process CTQs and having the highest defect frequency and for root cause analysis of unfulfilled process CTQ problems using fishbone diagram tools. Then at the measure stage calculations are carried out to determine the stability and capability of the sewing process. The next stage is analyze, namely to find out the failure mode, problem analysis is used with 5 why's analysis and FMEA. The final stage is improve where at this stage the design for improvements to the sewing process is carried out using the QFD design mechanism. The design results obtained were found to be potential improvement proposals by designing the Magnifying Glass Lamp Tool which was selected based on the second option. This proposed tool can help operators see more clearly and in detail when sewing. The results of the assumption of calculating the new sigma level show an average increase of 0.22 with a decreased DPMO value of 1748.*

**Keywords – defect, DMAI, QFD, magnifying glass lamp, pashmina inner hijab**