

## ABSTRACT

Quality of a product is good when the product meets the specification. Quality is very important since the manufacturing world has changed dramatically in the last 20 years. PT Mada Wikri Tunggal is a company engaged in the the manufacture of metal based automotive parts which uses job order system. The company needs to implement a structured quality improvement system to cope with the level of product defects percentage, especially in hinge seat product. Based on the 7 months observation data, the average percentage of produced defective products is 6.76%. This shows that the production process performance process has not been good. This research aims to determine the causes of defects in the hinge product and to propose hinge seat repairs to minimize defects in production processes hinge seat by using Six Sigma method.

One of the quality control method can be implemented by companies to reduce product defects is Six Sigma. The main principle of Six Sigma is to achieve perfection (3.4 DPMO) by controlling the processes that occur. The stages of Six Sigma implementation are Define, Measure, Analyze, Improve, and Control. In this research, Six Sigma in this research is limited to the improve phase. At the define phase, voice of customer is collected to identify customer needs and critical to quality (CTQ) is identified. Existing production process performance measurements performed on stage measure. In the analyze phase, the causes of defects are identified by using root cause analysis in the hinge seat production process. Then, in the improve phase, some improvements are proposed in order to reduce defects on the causes that have been identified.

The results of this research show that the hinge seat production process is unstable because there are four of the seven points of observation which are out of control. In addition, the seat hinge production process has a DPMO value of 9427 and is located at 3.848 sigma level; which is the average performance of industry in Indonesia. Factors causing the defects identified in the hinge seat production process are from man factors, tools, methods, and machine. The corrective actions which can be done to minimize defects are by conducting training for operators, checking on the machinery and equipment, and improving methods of checking and recording of defective products.

Keywords: Quality, Six Sigma, CTQ, Hinge Seat Production Process, Process Capability and Stability