

ABSTRACT

PT. Mahameru Centratama Spinning Mills is a private company which main business focuses on the production of spun and twisted yarn, grey fabric and dyed fabric. The type of grey fabric observed in this research is 5645 J grey fabric. In the production process of 5645 J grey fabric, defect waste which affects product quality is found, and the company's data shows that defect rate in January-June and October-November in 2013 exceeds the tolerance limit allowed by the company, which is 5%. Hence, it is necessary to design an improvement recommendation in order to minimize defect waste in the production process of 5645 J grey fabric.

This research deploys lean six sigma approach and follows the DMAIC phase: define, measure, analyze and improve. Based on the results obtained in define phase through VSM, waste to be minimized is defect waste in the production process of 5645 J grey fabric. In measure phase through process stability and capability measurement, it can be inferred that the performance of the production process of 5645 J grey fabric is still unstable with an average sigma level of 2,57. In analyze phase using fishbone chart and 5 Why's analysis, it is known that defect waste which occurs in the production process of 5645 J grey fabric predominantly consists of pakan putus, pakan tebal, lusi putus, pakan sisip and lusi pinggiran rusak.

In improve phase based on prioritization results using FMEA, recommendations are proposed in an attempt to solve the root causes of defect waste, such as providing equipment for cleaning fly waste, guidance on the importance of routine cleaning and general maintenance of components, cleaning and general maintenance scheduling, creating monitoring form for cleaning and general maintenance, routine component inspections, creating machine maintenance form, changing components at specified time interval, providing additional cleaning equipment for reed and gun, guidance on rules and standards on handling stopped machine, creating visual controls, designing weft hook for picking broken weft yarn, creating leno drawing-in pattern card, guidance on the standardization of warp tying method and creating display of the revised work instruction on information board hung in warping and beaming workstations.

Keywords: *Lean six sigma, DMAIC, defect waste, fishbone chart, 5 Why, FMEA*