

**ANALISIS EFEKTIVITAS MESIN JAHIT DENGAN *OVERALL EQUIPMENT EFFECTIVENESS* (OEE) DAN *FAILURE MODE AND EFFECT ANALYSIS* (FMEA)
(Study Kasus : CV. Cahaya Setia Mulia)**

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ABSTRAK

CV. Cahaya Setia Mulia adalah perusahaan di bidang tekstil memproduksi sarung tangan golf. Berdasarkan pengambilan data awal didapatkan beberapa produk yang mengalami kecacatan. Ada 4 jenis cacat yang terjadi yaitu open seam sebanyak 6%, berlubang sebanyak 2%, jaitan lompat sebanyak 4% dan salah size sebanyak 2% dalam kurun waktu 1 tahun. Terjadinya *rework* yang mengakibatkan cacat produk di lini produksi. Penelitian ini bertujuan untuk mengetahui nilai efektivitas mesin, mengetahui penyebab kegagalan mesin dan mencari solusi dari kegagalan tersebut. Penelitian ini menggunakan *Overall Equipment Effectiveness* (OEE) dan *Failure Mode and Effects Analysis* (FMEA) sebagai langkah memperbaiki permasalahan yang ada. OEE digunakan untuk mengetahui nilai efektivitas mesin dan penyebab masalah dapat diselesaikan dengan menggunakan FMEA. Rata-rata nilai OEE untuk satu tahun dari bulan Januari-Desember 2020 adalah 54,27% masih jauh dari nilai ideal OEE menurut standar Institute of Plant Maintenance yaitu 84% dan Berdasarkan hasil identifikasi nilai *six big losses* yang paling tinggi yaitu pada *Reduced Speed Losses* sebesar 74,29% selama satu tahun. Sehingga dapat diketahui terdapat permasalahan pada mesin jahit tidak memenuhi keefektivan nilai OEE tidak tercapainya faktor *performance* serta faktor *quality* dikarenakan masih banyaknya *defect* dari hasil produksi. Prioritas potensi kegagalan berdasarkan urutan nilai *Risk Priority Number* (RPN), didapatkan pada mode jahitan kencang kendur memiliki nilai RPN terbesar (288) dengan penyebab hasil jahitan tidak merekat tidak sempurna dan harus di jahit ulang.

Kata Kunci: Efektivitas, OEE, RPN

SEWING MACHINE EFFECTIVENESS ANALYSIS WITH OVERALL EQUIPMENT EFFECTIVENESS (OEE) AND FAILURE MODE AND EFFECT ANALYS (FMEA)

(Case Study : CV. Cahaya Setia Mulia)

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ABSTRACT

CV. Cahaya Setia Mulia is a textile company that produces golf gloves. Based on the initial data collection, it was found that several products had defects. There are 4 types of defects that occur in the form of open seams as much as 6%, holes as much as 2%, jump seams as much as 4% and wrong size as much as 2% within 1 year. The occurrence of rework resulting in product defects in the production line. This study aims to determine the effectiveness of the machine, find out the causes of machine failure and find solutions to these failures. This study uses Overall Equipment Effectiveness (OEE) and Failure Mode and Effects Analysis (FMEA) as steps to improve existing problems. OEE is used to determine the effectiveness of the machine and the cause of the problem can be solved using FMEA. The average OEE value for one year from January-December 2020 is 54.27%, still far from the ideal value of OEE according to the Institute of Plant Maintenance standards, which is 84% and Based on the results of the identification of the six big losses, the highest value is Reduced Speed Losses. by 74.29% for one year. So it can be seen that there are problems in the sewing machine that does not meet the effectiveness of the OEE value, the performance factor and the quality factor are not achieved because there are still many defects from the production. The priority of potential failures based on the order of the Risk Priority Number (RPN) values, obtained in the tight-slack stitch mode has the largest RPN value (288) with the cause of the stitches not sticking perfectly and having to be re-sewn.

Keywords: Effectiveness, OEE, RPN