

Statistical mapping of the critical equipment and data collection on the number and time between failures encountered in the weaving section of the textile manufacturing processes

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Abstract

The study's foundation is a scenario analysis of a textile mill's weaving department, with the goal of determining the necessity of a reliable and comprehensive plan for scheduling maintenance time. According to the background information and problem statement, incidents of Run failure maintenance and lengthy downtime (up to 60 days) undermine the machines' availability (Schmidt, Galar & Wang, 2016). The desired efficiency and production are 90% and 194.76 m, respectively, however, the preliminary result indicate less. This indicates a gap that must be closed by implementing regular and appropriate maintenance plans. Additionally, the the incoherent and inconsistencies points at a lack of an efficient maintenance plan. It was established that the current strategy is not optimized and does not ensure machine availability because there are disparities and irregularities in the maintenance of crucial equipment. The objective of the study was to map out the critical equipment and collect data on the number and time between failures encountered in the weaving section of the textile manufacturing processes. Failure mode and effect analysis and fish-bone diagram were used in the analysis of the data. Mapping results indicates downtime up to 60 days, the productivity was estimated at 194.76 meters, and efficiency was 90%. The results showed that weaving looms were the essential piece of machinery.

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