

Enhancing Dents through Lean Six Sigma

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Abstract : Performance measurement of small and medium-sized businesses is the primary need for all companies to survive and thrive in a dynamic global company. A structured and systematic, integrated organization increases employee reliability, sustainability, and loyalty. This paper is a case study of a gear manufacturing industry that was facing the problem of rejection due to dents and damages in gear. The DMAIC cycle, along with different tools used in the research work includes SIPOC (Supply, Input, Process, Output, Control) Pareto analysis, Root & Cause analysis, and FMEA (Failure Mode and Effect Analysis). The six-sigma level was improved from 4.06 to 3.46, and the rejection rate was reduced from 7.44% to 1.56%. These findings highlighted the influence of a Lean Six Sigma module in the gear manufacturing unit, which has already increased operational quality and continuity to increase market success and meet customer expectations. According to the findings, applying lean six sigma tools will result in increased productivity. The results could assist businesses in deciding the quality tools that were likely to improve efficiency, competitiveness, and expense.

Keywords : six sigma, DMAIC, SIPOC, failure mode, effect analysis

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