

Integrated Theory of Constraints, Lean and Six Sigma Process Excellence Methodologies: A Study in the Indian Manufacturing Sector

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February 27, 2023

Abstract

This study is to explore the advantages and obstacles of implementing Theory of Constraints (TOC), Lean and Six Sigma in Indian manufacturing organizations. The research also elaborates on the challenges of implementing TOC, Lean and Six Sigma in manufacturing organizations in India, along with the changes in the culture that are required for providing a proper climate to ensure success in a long-term manner. The methodology used in this study is a descriptive study, which explores and looks for the factors that influence the impulse or motivation to implement TOC, Lean and Six Sigma in Indian manufacturing organizations and factors that inhibit the implementation of TOC, Lean and Six Sigma. To achieve this goal of integrated TOC, Lean and Six Sigma, a significant review of the existing literature of the subject area has been done to prepare a framework with the help of statistics in view of the critical success factors. This research is a flow and arranged a type of survey of organizations that is conducted using MS-Excel and SPSS 25.0. The number of participants selected using a purposive sampling method in this study was 227 TOC, Lean and Six Sigma experts and owners or CEOs of manufacturing organizations in India. TOC, Lean and Six Sigma be used for facilitating the improvement processes in manufacturing operations, quality improvements and productivity. As some obstacles exist in implementing the integrated TOC, Lean and Six Sigma approach, the improvement processes and outcomes of change in the culture are noteworthy and worthwhile. The implementation of TOC, Lean and Six Sigma has also some constraints, including cost limitations, skill limitations, limited facilities and other such limitations. The implementation of TOC, Lean and Six Sigma during and after COVID-19 pandemic is not yet a matter of urgency or priority, and hence, cannot yet be applied.

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