

# Toward the successful adoption of Lean Six Sigma in manufacturing organizations: proposing a causal model

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## Abstract

**Purpose** – This paper aims to provide new and valuable insights for organizations that have decided to implement Lean Six Sigma (LSS) as a strategy for continuous improvement in search of business excellence. This objective is achieved through statistically modeling the causal relationships between the critical success factors (CSFs) of LSS for a successful deployment of this strategy.

**Design/methodology/approach** – A statistically validated questionnaire was used to collect information from LSS practitioners in manufacturing industries located on Mexico's northern border. Some hypotheses for relationships between LSS CSFs are developed theoretically first and empirically tested later using the structural equation modeling technique.

**Findings** – Proposed relationships between LSS CSFs have been demonstrated to be statistically significant, making clear that this implementation should always begin with a strong and decided participation and commitment of top management. Later, other CSFs must be activated and put into operation in a specified order to increase the probability of a successful implementation reflected in well-executed continuous improvement projects and achieving the expected benefits.

**Originality/value** – This paper proposes a structural model which has been statistically validated with information directly collected from skilled practitioners who have developed continuous improvement projects using the LSS methodology. Further, some relationships between LSS CSFs that, to the best of the author's knowledge, had not been demonstrated empirically are now explored and verified in our work.

**Keywords** Lean manufacturing, Six Sigma, Continuous improvement, Critical success factors, Structural equation modeling

**Paper type** Research paper

