

Synergistic effect of lean practices on lead time reduction: mediating role of manufacturing flexibility

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ABSTRACT

Purpose

This study scrutinized the synergistic effects of lean manufacturing (LM) on lead time reduction (LR) while investigating the mediating role of manufacturing flexibility (MF) in that relationship within the context of batch and mass customization manufacturers.

Design/methodology/approach

This cross-sectional survey involved 160 large batch and mass customization manufacturers in Indonesia. Data were analyzed by using the PLS path modeling approach and multigroup analysis.

Findings

The positive synergistic direct effects of LM on LR and MF were revealed in both process types. In mass customization, MF mediates the effect of LM on LR. However, such a mediating effect was not found in the batch process due to the insignificant effect of MF on LR.

Practical implications

The findings offered theoretical and practical insights supporting the manufacturers to grasp potential benefits through the holistic LM implementation as well as the suitable strategies to improve MF and reduce lead time by considering the types of the production process.

Originality/value

This study bridged the gaps regarding the comparison of LM implementation and its influence on MF and LR in mass customization and batch production.

KEYWORDS: Lean manufacturing, Flexibility, Lead time, Complementarity, Contingency, PLS-MGA

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