

Lean Practices, Lean Culture, and the Industry 4.0 Implementation Process: Mediating Role of Green Practices in Pakistan's Manufacturing Industry

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Abstract

This research aims to determine the effectiveness of lean practices and culture on the Industry 4.0 implementation. This aim is achieved in the context of Pakistan's manufacturing industry keeping in view the mediating role of green practices. This is a quantitative study, positivism was used. The data was collected from 256 management-level professionals working in the manufacturing industry of Pakistan. Smart PLS was used for data analysis. Besides running structural and measurement models, some other advanced techniques namely Importance-Performance Map Analysis (IMPA) and PLS Predict were also utilized. The results revealed that lean practices and culture have a significant and positive effect on Industry 4.0 implementation in Pakistan's manufacturing industry. Furthermore, green practices significantly moderate their effects. However, job experience has an insignificant role in this relationship. By implementing Industry 4.0 in the manufacturing sector, costs can be reduced and international competition can be met. Moreover, the current study revalidates the resource-based theory. The findings can be utilized by the manufacturing industry to implement Industry 4.0, successfully. The significance of lean practices and lean culture is well-established. This research would be helpful in strategic planning and decision-making for managers working in the manufacturing industry of Pakistan.

Keywords: green practices, implementation, Industry 4.0, lean culture, lean practices, manufacturing industry

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