

Integration of Sustainable Manufacturing, Lean Manufacturing and Circular Economy: Proposal of a Research Model

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ABSTRACT

The fourth industrial revolution has created competitive challenges for sustainable development in manufacturing organizations. The shortage of resources and ecological degradation have prompted government agencies and industry players to adopt sustainable approaches to mitigate these issues. However, the study of adopting sustainable manufacturing, lean manufacturing and circular economy has received little attention. Therefore, this study aims to review the most recent articles on sustainable manufacturing, lean manufacturing and circular economy fields and propose a research model for future research direction. An extensive review is performed on the latest published literature between 2012 to 2021 from the Scopus and Web of Science online databases. The current state of implementation, challenges and opportunities in these three areas were reviewed to identify the research gaps. This review article provides insights into various dimensions of these three critical elements to enhance the sustainable development of manufacturing industries. Integrating these three elements in the proposed research model will benefit the industry players in formulating the strategic roadmap and action plan for future optimization in the value chain.

Keywords

Sustainable manufacturing, Lean manufacturing, Circular economy, Literature review, Sustainability.