Guest editorial

Recent advances in Industrial Engineering

In the present era of global competition, the organizations are striving hard for value creation for all their stakeholders. On one side, the quality expectations are ever increasing and at the same time, there is downward pressure on price due to stringent competition. Consequently, the importance of Industrial Engineering has increased than ever before for the organizations to stay relevant and sustainable. This special issue is comprised of selected papers from the 4th International Conference on Production and Industrial Engineering (CPIE 2016) with a focus on detailed elucidations of contemporary developments in the field of Industrial Engineering.

The special issue has been derived from the CPIE 2016 Conference on Production and Industrial Engineering (CPIE) Conference Series started and organized by Department of Industrial and Production Engineering, Dr. B.R. Ambedkar National Institute of Technology Jalandhar (India) in March 2007. CPIE 2016 (December 19–21, 2016) was the fourth conference that attracted renowned academicians/researchers, noted captains of industry and the delegates from all across the globe. In all, about 350 papers were presented on various aspects of Industrial and Production Engineering.

During the planning for organization of CPIE 2016, it was observed that some of the themes of the conferences specifically related to Industrial Engineering were closely associated with the objective of *Journal of Manufacturing Technology Management*. In this perspective, the attention of Professor Harm-Jan Steenhuis, Editor-in-Chief, *Journal of Manufacturing Technology Management* was drawn and he kindly consented to bring the special issue for the selected papers of the CPIE 2016. In the Preliminary exercise, 14 good quality articles were identified from CPIE 2016 for possible publication in this special issue of JMTM. After a thorough review of these articles according to the journal's policy, five papers were found suitable for inclusion in the special issue. The papers contain applied research in the field of industrial engineering particularly in the areas of supply chain management, productivity enhancement, quality management (QM) and production scheduling. In the subsequent paragraphs broad overviews of these papers are given.

A case study published by Mor *et al.* highlights the identification and elimination of the non-value-adding activities of a manufacturing process. The lean tools through the standardization-of-work procedures practical have been practically implemented.

Another study selected corresponds to Kharub *et al.* that is survey study concerning the impact of cost leadership competitive strategy (CLCS) on performance of micro, small and medium enterprises (MSMEs). The mediating role of QM practices has also been examined. The study emphasizes on proper information and data analysis for continuous improvement so as to make CLCS successful in the MSMEs. QM has been found the key success factor in the performance of such enterprises using CLCS.

Research paper contributed by Rajagopalan *et al.* identified the barriers in implementing sustainable practices in rubber products manufacturing industry in a province of south India. Structural modeling technique has been used to develop the hierarchical relationships among the barriers in the implementation of sustainable supply chain practices in the rubber products manufacturing sector. The barriers so identified have also been ordered in a hierarchy according to their severity by using fuzzy-analytic hierarchy process methodology. The study reveals that lack of top-level management commitment, lack of motivation, lack of government initiatives and high initial cost of implementation are some of the major barriers in implementing sustainable practices in the Indian organizations.

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The findings of the study may prove to be useful for the Indian government and industry in making the strategic roadmap for the successful implementation of sustainable practices in the organizations.

The paper contributed by Singh *et al.* presented a framework for designing a sustainable supply chain network for Omni-channel environment in order to provide better service to customers through flexible distribution. Considering twin objectives for optimization, i.e. minimization of supply chain cost along with reduction of the carbon content for environment sustainability, the authors concluded cost superiority for sustainable supply chain network over conventional supply chain network.

Vinod *et al.* using discrete-event simulation evaluated the interactions between dynamic due date assignment methods and scheduling decision rules in a typical dynamic job shop production system, where setup times were sequence dependent. The authors concluded that better performance of the system can be obtained under different shop floor conditions characterized by set up time and arrival job rates with appropriate combination of due date assignment methods and scheduling rules. The paper may be useful for the shop floor managers working in job shop production systems.

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