Editorial

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Biographical notes: Rajeshwar S. Kadadevaramath received his PhD in Supply Chain Management from the Anna University Chennai, India. He is currently working as a Professor in the Department of Industrial Engineering and Management, Siddaganga Institute of Technology, Tumkur, India. He has published many technical papers in professional academic journals and conferences He is also an active referee for *International Journals of Revenue Management* (*IJRM*), *International Journal Business and Systems Research* (*IJBSR*) and *International Journal of Artificial Systems Technology & Applications* (*IJASTA*). He is presently the Associate Editor for *International Journal of Business and Systems Research* (Inderscience Publications) and editorial member for *International Journal of Revenue Management*. His current research interests include optimisation using genetic algorithm and particle swarm optimisation, supply chain management, operations management, quality and reliability engineering and ERP

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Karnataka, India in 2008 and PhD in Supply Chain Optimisation from the Kuvempu University, Shimoga. She has five years of industrial experience, 18 years of teaching experience and seven years of experience in research. She is currently serving as an Associate Professor in the Industrial Engineering and Management Department from the Siddaganga Institute of Technology, Tumkur, Karnataka, India. She has published 15 papers in national/international journals and presented 16 papers in conferences.

Immanuel A. Edinbarough received his ME in Production Engineering from the PSGCT, India in 1998. He obtained his PhD from the PSG College of Technology Coimbatore, Anna University, Chennai, Tamil Nadu in 1996. He worked for three years as a Faculty in the Mechanical and Manufacturing Engineering RIT, Rochester, NY, USA. He is presently working as a Faculty at The University of Texas at Brownsville, Texas, USA. He is a member for many professional societies and has published many papers in national and international conferences and journals.

The main aim of this issue was to disseminate some new advances in the industrial engineering and management. This choice is motivated by the fact that these tools play an important role. This special issue is organised in eight articles related to the mentioned scopes. In the remainder of this editorial note, we describe the main contribution of each of them.

In the first paper 'Knowledge management key factors: an empirical research on small and medium-sized enterprises in Indonesia' by Didi Sundiman, Chien Hsing Wu, Andi Mursidi, Surya Budi Putra Johan and Asmara Indahingwati explores the key factor that affects knowledge management (KM) process on small medium enterprise (SME) formed in developing countries SMEs that have very diverse cultures backgrounds. This paper undertakes a principle component analysis with oblimin rotation conducted to identify the key factors within the scales used and the study shows the importance of education level.

In this second paper entitled 'A literature review on lean, Six Sigma and ISO 9001:2015 in manufacturing industry to improve process performance' by T.R. Veena and G.V. Prabhushankar addresses present day global challenges are making companies to find new techniques and methodologies to meet the market requirements with respect to quality, cost and timely delivery of products. Most of the organisations are using lean implementation for waste reduction, Six Sigma methodology for reduction of variation or ISO 9001 quality management system. In this paper, a literature review is made on lean, Six Sigma and ISO 9001:2015 QMS. Based on review a comparative study is made on lean implementation, Six Sigma methodology and ISO 9001:2015 QMS and is it found that the gap exists between all the three techniques.

In this third paper 'TPM implementation requirements and developing a TPM implementation methodology for an educational institution: a case study' by Ravishankar V. Korgal, Anil S. Badiger and Reinhard Barutzki discusses the TPM implementation for an technical educational institute is a concept which focuses on the upkeep of technical equipment and the continuous improvement of the teaching and learning environment. The aim is to ensure the conduct of effective and efficient training in workshops and laboratories.

In this fourth paper entitled 'Development of green channel suppliers in oil and gas sector: a Kaizen approach' by N.G. Guruchannabasavaiah and B. Latha Shankar

identified defect reduction challenge is one of the major action required for any sort of industry for its continuous growth. Most of the time, industries may hurt a lot due to its repetitive rejections. This paper represents with the help of kaizen, how the actions can be initiated and implemented at the suppliers place to reduce the defective percentage and make it as green channel supplier.

In this fifth paper entitled 'Role of human anthropometry in manufacturing process optimisation' by Mahantesh M. Ganganallimath, Roopa B. Math and Vijaykumar Hiremath addresses the 3M's (men machine and material) involved in the manufacturing process, all have the role to play in the process of optimising the manufacturing process. Since the start of the industrial revolution the world has seen enormous growth in the technology. Man has been seeing the growth in the technology of machines, production methods and the emergence of material technology. Very less growth has seen on the human aspect of the manufacturing process. In this paper an effort has been made to elaborate the role of anthropometric data of the workers in both static and dynamic conditions at their work place. In today's hi-tech man-machine environment, man is the weakest link. Efforts are to be made to monitor, strengthen, support and protect him.

In this sixth paper 'Application of Taguchi-based Six Sigma method to reduce defects in green sand casting process: a case study' by Mahantesh M. Ganganallimath, Suraj Dhondiram Patil, E.V. Gijo, Roopa B. Math and Vijaykumar Hiremath have taken up a case study carried out for a green sand casting manufacturing company. Here, Six Sigma methodology is used for the part and the major tools used in this work are the project charter, process map, statistical graph and cause-and-effect diagram. Use of design of experiments (DOE) and analysis of variance (ANOVA) techniques are combined to determine statistically the correlation of defects with the mould hardness, moisture content, green strength, permeability of sand, pouring rate and pouring temperature, and also to find their optimum values needed to reduce/eliminate the defects.

In the seventh paper entitled 'Developing agility system in supply chains' by Gopinath H. Rathod, Vinod S. Puranik and Vijaykumar Hiremath identified that supply chain management and agility are combined sources of competitiveness in the business world. There existed a need to apply axiomatic design principles of agility in supply chains. In this context, this paper reports an axiomatic model of agile system in supply chains design using process variables. In the theory of axiomatic design, process variables are created by mapping the design parameters in the process domain. This article serves as an efficient guideline for the design process to clarify the tools, methods and resources of designing agility system in supply chains of an Indian relays manufacturing organisation.

In this last paper entitled 'A fuzzy optimisation approach for software reliability estimation' by Boby John, Rajeshwar S. Kadadevaramath and Immanuel A. Edinbarough have identified that information technology industry has witnessed extraordinary growth and many times the software companies compromise on software testing to avoid cost or schedule overrun. This might make the software unreliable. Hence, it is imperative for the software firms to estimate the reliability of the software and ensure that their products are reliable. A wide range of models is available for reliability prediction. In this paper, the authors suggest a fuzzy optimisation methodology to choose the best software reliability

model based on multiple performance characteristics. Two case studies demonstrating the proposed methodology are also presented in the paper.

I hope that these eight papers will highlight research challenges and future research directions and add their values and contributions to the fields of business and systems research.

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In closing, we would like to express my sincere gratitude to the contributing authors and the referees who reviewed our papers, of guest editors, and remain anonymous to us for their very valuable and constructive feedback and critiques. We would like to take this opportunity to once again the chief editor of *IJBSR*, Professors Jason C.H. Chen and Janet Clements, Inderscience Publishers for their support throughout the launching of this journal. Finally, to our readers around the world, we thank you very much for using this journal as your source of information and hope you will find it helpful in your research endeavours.