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## Integration of lean manufacturing and quality management system through structural equation modelling

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**Abstract:** Both the lean manufacturing (LM) and the quality management system (QMS) are clear initiatives with a goal of improving effectiveness and efficiencies. This review paper aims at exploring the impact of LM tools on QMS. Many organisations tackle lean philosophy, ISO 9001 standard individually. But this kind of attempt lacks focus on the synergy and the advantage from the potential collaboration. Few studies were conducted to explore the linkage between LM and QMS and whether they can coexist in the Manufacturing Industries or not. Though LM is generally proposed as a driver for QMS, a conceptual model is necessary to be developed in order to investigate the integration between LM and QMS. The model is proposed in this paper with a future direction of empirical investigation using AMOS 22 structural equation modelling to test the developed proposition. The originality of this paper lies in observing and measuring the impact of 11 LM tools on the QMS implementation with eventual contribution to operations management by focusing on hard LM aspects and their interrelationships with QMS in one integrated model.

**Keywords:** LM; quality management system; QMS; integration; conceptual model; impact; structural equation modelling; SEM.

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**Biographical notes:** Amjad Khalili is a PhD candidate in the Faculty of Engineering at IIUM. He is researcher in operations management, quality management and technology. He has strong experience in World Bank and European Commission funded projects for tertiary education. He specialised in industrial engineering, quality management and engineering management. He participated in different workshops, seminars, lectures and study tours with Ministry of Education and Higher Education in Palestine.