

Developing a Knowledge-Based Lean Six Sigma Model to Increase the Effectiveness of Healthcare Organisational Resources Management

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Abstract

Purpose– This paper develops a model of a Knowledge-Based (KB) System using Lean Six Sigma (L6 σ) principles to increase the effectiveness of healthcare organisational resources management.

Design/methodology/approach– Using L6 σ principles to enhance healthcare resources' effectiveness needs a pre-assessment of the healthcare organisation's capabilities. The model will be developed using a rule based approach of KB system. The KB system embeds Gauging Absence of Pre-requisite (GAP) for benchmarking and Analytical Hierarchy Process (AHP) for prioritization. A comprehensive literature review will be covered for the main contents of the model with a typical output of GAP analysis and AHP

Findings–The proposed KB system has benchmarked the current status of healthcare resources with the ideal benchmark one (resulting from extensive evaluation) by the KB/GAP/AHP system of international organisational resources management in healthcare environments.

Research limitations/implications– Future work includes validating the implementation model in healthcare environments around the world.

Originality/value– This research presents a novel application of a hybrid KB/GAP/AHP methodology to implement L6 σ principles to enhance Healthcare resources management. This approach will assist healthcare governor's decision making to reach performance improvement against a best practice benchmark.

Keywords

Lean Six Sigma (L6 σ), Knowledge-Based System (KBS), Healthcare Organisational Resources Management, Gauge Absence Prerequisites (GAP), and Analytical Hierarchy Process (AHP).

Acknowledgements

Authors extend their appreciation and gratitude to Sultan Qaboos University, Oman that has granted the financial support for this study.

Biographies

Yousuf Al Khamisi earned a BsN degree in Science from the Sultan Qaboos University (SQU), Muscat, Sultanate of Oman. He also holds a MBA from College of Waljat, Oman. He earned an assistant Fellow Certificate from Higher Education Academy, UK in 2017. He has been involved with a number of quality management projects while working in Sultan Qaboos University Hospital, Oman. He is currently a PhD student within the School of Engineering, University of Bradford with research interests in Knowledge-based systems, Lean Six Sigma, quality management, and healthcare organisations.

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