MODELLING THE BARRIERS OF LEAN SIX SIGMA IN THE SERVICE INDUSTRY

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ABSTRACT

The purpose of this paper is to investigate the barriers for implementing lean six sigma and develop a hierarchical interrelationship model between them in the service industry. Using a systematic literature review, focus groups and expert opinions, 20 LSSBs have been identified and analysed using Interpretive Structural Modelling (ISM) and (MICMAC) approach. Based on the results, organisations will be able to identify what are the driving and dependent barriers that affect the implementation of lean Six Sigma and thus can plan their strategy accordingly.

Keywords: Lean Six Sigma, LSS barriers, interpretive structural modelling, service industry, MICMAC analysis, strategy.

INTRODUCTION

As per the United Nations Conference on Trade and Development (UNCTAD) report (2017), service industries occupy more than 75% share of the GDP in advanced economies. Further, as we move into the era of the 4th Industrial Revolution where we are slowly moving into a digital space, this share is likely to increase much further. Therefore, it is imperative that such organisations find ways to improve their process as per the need of the market and meet their customer demands. Lean Six Sigma (LSS), which has been associated with the manufacturing firms to reduce defects in their processes, has been adopted recently in the service industry. However, in both sectors, the integration of Lean and Six Sigma methodologies gives a unique opportunity to the organisations for achieving process efficiency and effectiveness that can result in enhanced customer satisfaction and improved business performance (Snee, 2010).

The usage of LSS across services, especially in banking, hospitality and healthcare services has been an increasing trend in the past few years such as Starwood Hotels & Resorts, Bank of Montreal, American Express, Mayo Clinic, Mumbai’s dabbawals are few of the many which established the LSS programs for advancement in process excellence. However, there are challenges in the implementation of LSS in any organisation, especially the service industry. According to a survey of 184 companies who implemented LSS, 80 percent of the companies were failing to drive the estimated value, as it was not implemented in the right manner (Guarraia et al., 2008). This paper conducts a literature review to identify the barriers that may affect a successful implementation of LSS in a service based organisation. Although the barriers for the manufacturing and service may have commonalities, their relevance in implementation will vary as the operating style for the two industries is different. The model generated after the analysis, will help the organisation to prioritize the barriers as per their relevance to their businesses, and formulate a necessary strategy to tackle them.
RESULTS AND CONCLUSIONS

In this paper, we have identified, analysed and modelled the barriers which may hinder implementing the Lean Six Sigma in the service industry. Initially, we identified 12 LSSBs, but with further research and inputs from the focus groups and experts, we included barriers which can be crucial for the service industry, such as poor estimation of cost, poor deployment of strategy, lack of continuous improvement culture. In total 20 barriers were finalised and analysed using ISM modelling approach to get hierarchical interrelationship model. Finally, the integrated ISM and MICMAC analysis have been used to identify the relation and clustering among LSSBs.

The initial results of ISM model help us to draw a hierarchical road map to minimize the impact of LSSBs in the successful implementation of LSS in the service sector. The model concludes that lack of top management and customer focused, resistance to change management, lack of alignment between LSS and organisation strategy, poor estimation of implementation cost and return are the top 5 major barriers. Also, how this model differentiates from the various other models in manufacturing is the identification of customer focus as one of the major LSSBs (Singh, Kumar, and Rathi, 2019; Talib, Rahman, and Qureshi, 2011) as service industry revolves around the customers involvement in service process and design (Abu-Salim et al., 2019; Antoney et al., 2005; Brown et al., 2006).

Moreover, understand six sigma tools and methodology, lack of relationship with suppliers, lack of training have been found to be having least influence on six sigma implementation. This paper also provide us the most driving and dependent barriers which help us to understand that which barriers are self-driving and which are dependent on others. It can be understood from the model that technical and statistical skills are less important in the service model, which is in contrast to the manufacturing model. The model also stipulates that people (employees or customers) are more important than tools, as the service industry is ultimately about the people. The outcomes of the paper will help the top management, Champions, Black belt, Green belt, managers to prioritize and rank the barriers in the very initial stage in implementing LSS in the service industry.

REFERENCES


