

## **Lean Six Sigma(LSS) Practices of Supply Chain**

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### **Abstract**

The aim of this paper is highlight lean six sigma (LSS) practices of supply chain by reviewing extant literature. A key words literature review approach is adopted to generate a list of possible LSS factors (practices) in different sectors with focus on healthcare sector. As a result, the most frequently practices have been extracted.

### **Keywords**

Lean Six Sigma, supply chain, Six Sigma

### **Introduction**

The speed, service quality and the cost of operations impact the supply chain performance. So the improvement of performance is becoming must in those areas for those organizations looking for success. One most popular approach for improving quality, lower cost, and responding time responses is lean six sigma. In recent decades, Lean Six Sigma(LSS) has become the most popular strategic tool for adopting continuous improvement in service sector and in the public sector alike(Albliwi et al., 015). Continuous improvement is the key goal for any profit and non-profit organization to assist them to achieve operational excellence and to enhance quality performance(Thomas et al., 2009).

### **Research Problem**

Several organizations attempt to implement LSS approach to improve organization's performance but not all organizations are benefited greatly from LSS approach due to lack of selection of appropriate LSS practices for the organization. Although LSS is a approach that achieve the speedy rate of improvement in cost, process speed, and quality(George, 2002)and supply chain management can use the quality management concepts as well as the lean six sigma approaches to reduce cost and improve quality and delivery (Salah, Rahim and Carretero, 2011), LSS implementation failures in supply chain management. also, in spite of there is substantial proof on the usage of LSS in several organizations, there is limited empirical proof showing the relationship between lean six sigma practices and the supply chain performance in the healthcare organizations(Sabry, 2014) especially in developing countries(Chhikara, 2017). This paper is to determine the LSS practices needed for implementing LSS approach.

### **Literature review**

According to Antony (2011) the concept of lean was evolved from the Toyota Production System (TPS) during the 1950s. There are two principles as its heart; 'Jidohka' and just in time (JIT). Lean focuses on process, specifically on eliminating waste and adding value. In lean the focus is on eliminating waste to result in quicker flow, less variation, greater customer and shorter cycle time(Sinclair, Phelps and Sadler, 2005).

### **Executive commitment**

The executive of the medical institutions are committed fully to the performance improvements. In addition, the top executives are actively supporting the performance initiatives. Also, executives are actively communicating the performance commitments to all employees(Powell, 1995). Many author assured that the importance top management support to implement lean six sigma(Pampanelli et al., (2014); Alves & Alves, (2015); Tsironis & Psychogios (2016);Kader Ali (2016) ;Cherrafi et al.,(2016); Laureani & Antony, (2017))

### **Effective Training Program**

LSS training program gives the necessary LSS techniques, tools, knowledge and methodology towards systematic approach on problem solving. The effective LSS training program will give the platform to future leaders, equipped with comprehensive LSS knowledge. The qualified human resources of a firm are significant to ensure firm growth and success.

### **Supplier Relationship**

Effective supplier relationship should have long term and collaborative relationship between company and suppliers. This factor is very important to improve purchasing order and strategic partnership(Jeyaraman and Kee Teo, 2010).

### **Employee involvement**

Employee involvement is play role in adoption management practices such lean six sigma. To implement lean six sigma successfully, employee involvement should be taken into account(Fadly et al., 2013). Also, Heckl et al., (2010) assured that staff involvement is a critical practice in lean six sigma implementation.

### **Quality Information and Analysis**

Previous research mentioned important impact of quality information analysis and performance. Employ quality tools and techniques are important to success LSS projects(Jeyaraman and Kee Teo, 2010).

### **Focus on Metric**

Focus on metric is the main to encourage team workers to continuously improve their quality of activity, understanding of process operation, increase employees knowledge, and understanding decision making tool(Jeyaraman and Kee Teo, 2010).

### **Process improvement**

Reduce cycle times and waste in all area through cross-departmental process analysis(Powell, 1995). Healthcare organization can depend on three dimensions to measure this indicator include minimizing variation of the process, enhancing process capability, and reducing defects.

### **Conclusion**

This research aims to reveal the main lean six sigma practices in supply chain management from reviewing lean six sigma practices related articles journal articles and proposed executive commitment, effective training, supplier relationship, employee involvement, quality information and analysis, focus on metric, and process improvement. This research has a remarkable contribution to lean six sigma literatures by introducing the key lean six sigma practices for those organizations intend to implement LSS. Based on the results of this paper, theoretical framework can be built and empirical research can be conducted.