

Impact of Lean Manufacturing Practices in Sri Lankan Western Province SMEs on Their Sustainability Performance: Based on Managerial Perspective

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ABSTRACT

The contribution of Small and Medium Enterprises (SMEs) in Sri Lanka plays a massive role economically and socially as it accounts for 80% of all businesses. Since the large scale businesses are now moving towards sustainable development these SMEs could also think of practicing such strategies for the betterment of their future as well as the country. Therefore it is important to show the respective parties the benefits they could gain by having sustainable practices within the business. Hence the main objective of this study is to investigate the impact of one of the sustainable practices which is the Lean Manufacturing Practices (LMPs) on sustainability performance of SMEs. Here sustainability performance were measured under economic, environment and social perspectives which are considered as Triple Bottom Line (TBL) sustainability performances. Data were collected from 100 SMEs in Western Province Sri Lanka through a structured questionnaire and analysis was done with Structural Equation Modeling (SEM) using Smart PLS. Outcome has shown that there is a significant positive impact on sustainability performance from LMPs. In implementing LMPs within a business this will be an supportive study for managers to inspire and get the commitment of business stakeholders who have different expectations. Further this study contributes to theoretical and practical knowledge in terms of the importance of LMPs in maximizing economic, environment and social sustainability performances.

Keywords-- Lean Manufacturing Practices (LMPs), Small and Medium Size Enterprises (SMEs), Triple Bottom Line (TBL)

INTRODUCTION

Recent times, most of forward thinking organizations are emerged to consider the sustainability performance as their primary objective [1]. The newest way to define

organization's sustainable performance has advanced the Triple Bottom Line (TBL) approach. Simply it focuses on "people, planet and profit". Lean manufacturing practices can be identified as one of the most powerful methods that can be used to improve sustainability. SME sector has been recognized as one of the vital sectors in economic development of a country because it contributes to generate employment, income inequality, inflation and balance of payment. Past researches have justified researching the impact of lean practices on sustainability performance of SMEs regional wise such as western countries, Asian countries, Indian context etc. Most of researches carried out in the Sri Lankan context have focused more on economic sustainability dimension while ignoring other two, environmental and social sustainability [2]. This is true in the context of academics as well as practitioners. Study gives a pivotal insight and important knowledge on developing and implementing lean strategies in SME sector. Findings of the present study will encourage managers to inspire and get the commitment of business stakeholders who have different expectations in order to implement LMPs in SMEs. Furthermore, with the current trend in the global business environment which is moving forward with "Sustainability", practitioners will be able to highlight the importance of LMPs for the survival as well as the success of SMEs.

OBJECTIVES

Following research objectives were established in order to fulfill the identified research gap.

- To identify the relationship between LMPs in SMEs and sustainability performances.
- To measure the impact of Lean Manufacturing Practices (LMP) on the sustainability performances.

LITERATURE REVIEW

Basically since diminishing wastage leads to enhance organizational operational performances, it obviously mediates to enhance

economic significance through increase delivery time, speed, quality, flexibility and finally decrease cost and wastage as well [3-4].

H₁. There is a positive impact of LMP in SMEs on Economic sustainability performances.

Some researches express that environmental considerations are one of the major components of lean and others says that it comprises with less considerable situation in lean. When most of the companies come to keep up more and more consideration on diminishing energy and transportation costs [5], they have aligned with Kaizen which mainly focus to reduce environmental wastage. This practice leads to put more consideration on lean practices to success in terms of reducing wastage.

H₂. There is a positive impact of LMP in SMEs on Environmental sustainability performances.

The elementary consideration in any lean system is people. After that it keeps their consideration along

implementing lean methods in enterprise as well [6]. To gain success of lean practices by applying to operational processes, it must have preferable staff who engage with activities practically. That's why people are considered as the primary element of any lean system [7].

H₃. There is a positive impact of LMP in SMEs on Social sustainability performances.

DATA/METHODOLOGY

Since this study is based on lean manufacturing practices of SMEs, the population is considered as small and medium size enterprises in the Western Province Sri Lanka. A structured questionnaire was used to collect data and 145 questionnaires were distributed and response rate was 68.97 %. This study used Structural Equation Modeling in Smart PLS 3 (Student Version) for the analysis.

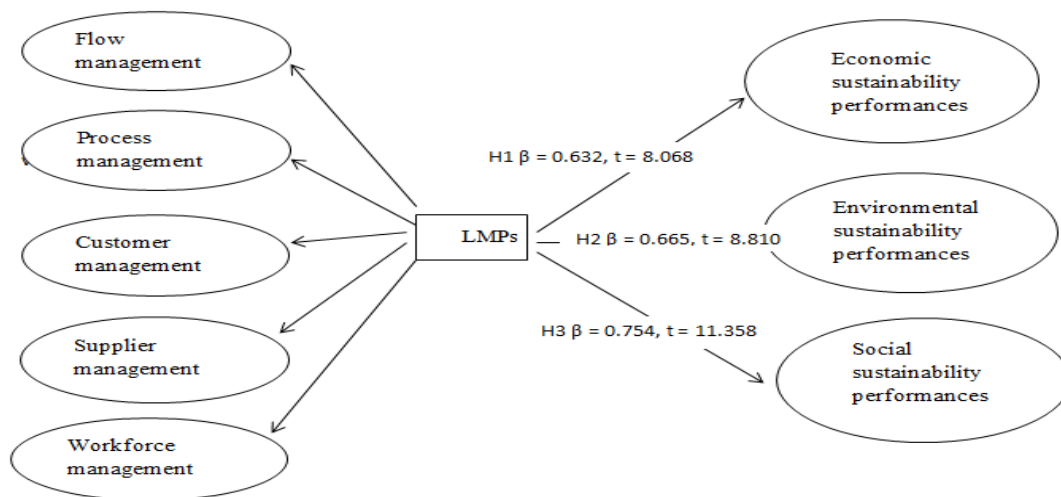


Figure 1: Structural Model.

RESULTS/FINDINGS

Hypothesis	β Coefficient	Supported/Not Supported
H ₁ . There is a positive impact of LMPs on Economic sustainability performances.	β = 0.632 (t=8.068, p=0.000)	Supported
H ₂ . There is a positive impact of LMPs on Environmental sustainability performances.	β = 0.665 (t=8.810, p=0.000)	Supported
H ₃ . There is a positive impact of LMPs on Social sustainability performances.	β = 0.754 (t=11.358, p=0.000)	Supported

DISCUSSION

With the available literature it can be found that results of the present study is in line with the previous studies such as Yang et al. (2011) [8], Fullerton and Wempe (2009) [9], Shah and Ward (2003) [10], who have studied lean manufacturing

on economic and environment sustainability performances. Further, Chugani et al. (2017) [11] and Longoni et al. (2013) [12] have found that LMPs have a positive relationship on organization performance. The positive relationship between LMPs and economic performance is established from the previous work by Ranadewa (2018) [2],

which confirms the present study further for SMEs in Western Province Sri Lanka.

CONCLUSION

Study outcome has added new knowledge regarding how the application of LMPs in SMEs can impact the sustainability performance of the business in three different areas, economic, environment and social. As the literature shows most of the studies have focused economic and environment sustainability separately, this study has included the social sustainability performance as a contribution to theories with respect to sustainability performance in SMEs. Identified positive impact of LMPs on sustainability performance is a supporting factor for managers to address different expectations of various stakeholders. Furthermore, with the current trend in the global business environment which is moving forward with “Sustainability”, practitioners will be able to highlight the importance of LMPs for the survival as well as the success of SMEs.

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