

Impact of Lean Manufacturing Methods on Wastage Reduction of Apparel Industry in Western Province of Sri Lanka

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Abstract

Apparel sector in Sri Lanka is one of the key industrial sectors, which contributes significant portion of the national GDP and makes a significant contribution to export earnings and the workforce. Although the sector is economically important, it has continuously experienced high level of wastage being produced. The types of wastes comprise overproduction, defects, excess inventory, unnecessary transportation, motion, over-processing, and waiting time; all known as the seven wastes of lean manufacturing. This study contributes to existing knowledge by providing empirical evidence on the effectiveness of lean methods in Sri Lankan context. It highlights the most effective practices for waste reduction. This study seeks to explore how four of these main practices of lean manufacturing such as Just In Time, Employee Involvement, Value Stream Mapping and Continuous Improvement impact on wastage reduction of the Apparel Industry at the Western Province. The quantitative research design was followed and primary data were collected from a sample of 384 respondents using both online and physical questionnaires from Apparel companies' in western province. Correlation and regression analysis revealed that all four lean manufacturing methods significantly contributed to Wastage Reduction. Value Stream Mapping had the strongest positive effect on wastage reduction, followed by Just In Time, Continuous Improvement and Employee Involvement. It also highlights the necessity of strategic implementation of lean methods to enhance sustainable expansion of organizations, minimization of resources wastage and overall competitiveness in the Sri Lankan Apparel industry.

Keywords: apparel industry, lean manufacturing method, wastage reduction