

A Study on Implementation of Lean Methodologies for Enhancing Productivity in GG Fashions at Salem

Mr. Shenbagaraj P,^[1] Ms. Gayathri N^[2]

¹Student, School of Management Studies, Karpagam College of Engineering, Coimbatore, Tamil Nadu, India.

²Assistant Professor, School of Management Studies, Karpagam College of Engineering, Coimbatore, Tamil Nadu, India.

Abstract - This study deals with the implementation of lean methodologies in improving productivity in the textile industry, with special reference to GG Fashions. The purpose of the research is to examine the role of lean tools such as 5S, Kaizen, and value stream mapping in improving productivity. The textile industry faces problems such as low productivity, high operational costs, low quality, and poor operational efficiency. These problems call for the application of modern techniques of management. The research uses both primary and secondary data. The data has been collected through structured questionnaires and secondary data from the organization. The statistical tools used in the research are percentage analysis, chi-square test, correlation analysis, and ANOVA. The findings of the research reveal that the implementation of lean methodologies improves productivity, minimizes waste, improves quality, and promotes continuous improvement. The research concludes that lean methodologies play an important role in improving the operational efficiency of the textile industry.

Keywords: Lean Manufacturing, Productivity, Textile Industry, 5S, Kaizen, Waste Reduction, GG Fashions

1.INTRODUCTION In the present competitive business environment, organizations are looking for ways to enhance their productivity with reduced costs and improved quality. The textile industry is one of the labor-intensive industries that is dynamic in nature. It is facing many problems in terms of efficiency, waste generation, and demand variability.

Lean methodologies were first introduced in the manufacturing sector. Lean methodologies offer a scientific approach towards the elimination of waste in the system.

Lean methodologies in the apparel industry can be used in reducing defects, minimizing inventories, and enhancing the workflow.

With the rise of global competition in the textile industry, it is essential for textile companies to adopt lean methodologies in their business operations.

This study is based on the implementation of lean methodologies in GG Fashions.

1. Objectives of the Study

- 1.To analyze the implementation of lean methodologies in the textile industry
- 2.To evaluate the impact of lean practices on productivity and quality
- 3.To identify factors influencing successful lean implementation
- 4.To examine the role of lean tools in waste reduction
- 5.To assess challenges faced during lean adoption

2. LITERATURE REVIEW

Shah P and Patel V (2016) in their study on the application of lean principles in fashion manufacturing have shown the contribution of lean tools like waste reduction, standardization of processes, and continuous improvement in improving efficiency in the organization. According to the study, organizations where lean principles are applied show better efficiency in terms of the smooth flow of processes and cost reduction.

Gupta A and Kumar S (2017) in their study on lean supply chain practices in the fashion industry have shown the importance of applying lean strategies in the supply chain for improving efficiency in terms of lead time and inventory costs. According to the study, lean supply chain implementation improves responsiveness in organizations.

Jones L, Smith R and Taylor M (2018) in their study on the impact of lean practices on the fashion retail distribution system have shown the contribution of lean implementation in improving efficiency in terms of reducing delays in the distribution system. According to the study, lean implementation improves customer satisfaction.

Singh A and Dhiman P (2019) examined the application of lean methodology in garment manufacturing units. This study proves that tools like 5S, Kaizen, and JIT have a significant impact on improving productivity and reducing

wastage. This study concludes that lean is imperative to survive in the textile industry.

Lee H and Chang D (2019) have conducted research to analyze the global implementation of lean methodology in the fashion industry. This research has identified the problems and challenges that might occur while implementing lean, and the advantages of implementing lean methodology.

Rodriguez C, Perez M, and Lopez A (2020) investigated the importance of lean practice in reducing lead time in the fashion industry. The study revealed that when JIT and process streamlining are incorporated, it can significantly minimize production delays. The study concluded that lean practice can improve responsiveness to market demands. However, it was also revealed that external factors, such as supply chain disruptions, can limit the effectiveness of lean practice.

Mehta R and Sharma K (2020) investigated the implementation of Kanban systems in fashion manufacturing units. The study revealed that the implementation of Kanban systems can improve inventory levels and minimize stock levels. However, it was also revealed that even though Kanban systems can improve operational efficiency, it is essential to coordinate all production levels to make it effective.

Thakur P and Verma N (2021) investigated the challenges faced by small and medium-sized fashion enterprises in adopting lean methodology. The study revealed that small and medium-sized fashion enterprises face major challenges, such as financial constraints, lack of training, and organizational change, in adopting lean methodology.

Chowdhury M, and Islam S (2021) conducted a study to explore the cost implications of lean implementation in garment manufacturing. The study revealed that lean principles help to save costs through waste reduction, quality, and reduced rework. However, it was also highlighted as a potential constraint for some firms in terms of initial costs and training costs for lean implementation.

Patel K, and Singh R (2021) undertook an exploratory study to understand the application of 5S and TPM in fashion production units. The study revealed the importance of 5S and TPM in improving organizational efficiency. The study highlighted the importance of monitoring for sustaining these principles.

3. RESEARCH METHODOLOGY

The research methodology is a systematic approach towards the collection, analysis, and interpretation of data concerning the implementation of lean methodologies in the textile industry. A structured approach is adopted by the research towards analyzing the impact of lean methodologies on the productivity of GG Fashions.

This research has been conducted on the basis of both primary and secondary data to ensure the reliability and validity of the research.

Data Collection

Primary Data:

For the collection of primary data, the researcher used a structured questionnaire to collect the required data from the employees of GG Fashions.

Secondary Data:

For the collection of secondary data, the researcher collected data from various sources such as company records, academic journals, books, and the Internet.

Tools Used for Analysis

Percentage Analysis
Chi-Square Test
Correlation Analysis
ANOVA

4. DATA ANALYSIS AND FINDINGS

Percentage Analysis

This percentage analysis was carried out to understand the general opinion of the respondents about the lean practices.

From the results obtained in this study, it was clear that the majority of the employees were aware of the lean methodologies and their application in the organization. The majority of the respondents were in agreement that the application of lean practices such as 5S, Kaizen, and waste reduction techniques has improved the organization of the workplace. The employees were also able to manage the flow of work better and the reduced idle times due to the application of lean.

Chi-Square Test

The Chi-square test was used in determining the relationship between the implementation of lean practices and productivity improvement.

From the results obtained in the case study, it is clear that there is a significant relationship between the implementation of lean methodologies in the organization and productivity levels in GG Fashions.

Correlation Analysis

Correlation analysis was employed to determine the degree of association that exists between lean practices and productivity factors.

From the analysis, it is evident that there is a positive correlation between lean implementation and the enhancement of productivity. This implies that with the increase in the implementation of lean methodologies, there is an improvement in productivity.

ANOVA Analysis

ANOVA was carried out to ascertain if there were significant differences in the perception of the employees

concerning the lean practices on the basis of demographic factors such as age, experience, and department.

From the results obtained above, it can be concluded that there were no significant differences in the opinion of the respondents belonging to different groups. This shows that the lean practices were accepted across the organization.

5.SUGGESTIONS

Training sessions should be held in the organization to enhance the understanding of the employees regarding the implementation of lean tools like 5S and Kaizen.

Top management should be involved in the implementation of lean tools by providing adequate guidance and motivation to the employees.

Monitoring of performance parameters such as productivity, defect rates, and cycle times must be done to improve performance.

Eliminating the different types of waste in the organization, such as overproduction, waiting times, and defect rates, would be helpful in improving efficiency.

Implementation of the latest technology and lean tools would help in improving performance.

6.CONCLUSIONS

The study concludes that lean methodologies have a significant impact on the productivity of the textile industry. The implementation of lean tools in GG Fashions has led to increased efficiency, reduced waste, improved quality, and better utilization of resources.

Lean practices not only improve the performance of an organization but also enable the organization to compete effectively in the dynamic market. This can only be achieved through effective management support, employee involvement, and continuous improvement.

ACKNOWLEDGEMENT

The author expresses sincere gratitude to GG Fashions and the faculty of Karpagam College of Engineering for their support and guidance in completing this research.

REFERENCES

Shah, P. and Patel, V. (2016) 'Applying lean in fashion manufacturing', *Journal of Apparel Production*, 21(3), pp. 58–72.

Gupta, A. and Kumar, S. (2017) 'Lean supply chain in fashion: An empirical study', *Fashion Operations Journal*, 14(4), pp. 233–246.

Jones, L., Smith, R. and Taylor, M. (2018) 'Impact of lean on fashion retail distribution', *International Journal of Retail and Distribution Management*, 46(2), pp. 112–129.

Singh, A. and Dhiman, P. (2019) 'Lean techniques in garment manufacturing', *Textile Production Research*, 28(7),

pp. 165–180.

Lee, H. and Chang, D. (2019) 'Global lean implementation in fashion', *International Business and Fashion Journal*, 33(4), pp. 155–172.

Rodriguez, C., Perez, M. and Lopez, A. (2020) 'Lean practices for lead time reduction in fashion', *Journal of Apparel and Textile Supply Chain*, 29(2), pp. 67–85.

Mehta, R. and Sharma, K. (2020) 'Implementing Kanban in fashion manufacturing', *Global Textile Journal*, 39(9), pp. 110–124.

Thakur, P. and Verma, N. (2021) 'Challenges of lean implementation in fashion SMEs', *Small Enterprise Management Journal*, 33(5), pp. 298–311.

Chowdhury, M. and Islam, S. (2021) 'Cost impacts of lean in fashion manufacturing', *Textile Industry Review*, 34(6), pp. 192–207.

Patel, K. and Singh, R. (2021) '5S and TPM in fashion production', *Journal of Apparel Engineering*, 26(9), pp. 53–68