

Descriptive Analysis of Lean Manufacturing Practices in Textile Industry

Muhammad Ali Khan

Assistant Professor
Department of Industrial Engineering and Management
Mehran University of Engineering and Technology
Jamshoro, Sindh, Pakistan.
muhammad.nagar@faculty.muet.edu.pk

Awaiz Khatri

Associate Professor
Department of Textile Engineering
Mehran University of Engineering and Technology
Jamshoro, Sindh, Pakistan.

Hussain Bux Marri

Meritorious Professor & Ex-Chairman
Department of Industrial Engineering and Management
Mehran University of Engineering and Technology
Jamshoro, Sindh, Pakistan.

Abstract

The purpose of this study is to conduct the descriptive analysis of lean manufacturing practices in textile industry. It is observed that unlike the automobile, lean manufacturing is new to textile industries. This is the established fact that only few studies are worth mentioning in the area of lean manufacturing with in the textile industry. This paper presents the comprehensive descriptive analysis of lean manufacturing practices in textile industry.

The following research is based on Forty seven (47) papers which were published in well reputed journals, books, databases and conference proceedings. In initial search One hundred and thirteen (113) papers were collected added in data pool. Later on, scrutiny was done according to the objectives of the research and Forty seven (47) papers were found most relevant to the research.

The lean practices are extracted after thorough study of the final pool of Forty seven (47) papers. This paper summarizes all mentioned lean practices into Sixty (60). Furthermore, the deep study is performed and comprehensive descriptive analysis is conducted on various bases. This study classified the Sixty (60) lean practices into four (04) categories on the basis of descriptive analysis findings. Each category is consisted of fifteen (15) lean practices. The top fifteen (15) lean practices are discussed in detail as well and their applications in textile industry are discussed with relevant case studies.

It is very important for textile industry practitioners & researchers to be well aware of the relevant lean manufacturing practices. In addition to this, textile industry practitioners & researchers must be well aware also about the limitations and lean road map before starting the lean implementation process. Hence, this paper could provide valuable insights to textile industry practitioners & researchers.

The findings from this case study are limited to focus areas of textile industry and cannot be generalized for others in textile and/or other industry/services sectors.

This paper is based on a comprehensive descriptive analysis of lean manufacturing practices in textile industry which gives an opportunity to Lean Manufacturing researchers and textile Industry practitioners to understand the relevant Sixty (60) Lean manufacturing practices in depth. In addition, highlighting the most popular fifteen (15) relevant Lean Manufacturing practices and their applications in current literature and developing an agenda for future research, will save time and effort for readers looking to research in the area of Lean Manufacturing Practices in textile Industry.

Keywords

Lean manufacturing, textiles, review, analysis, lean practices

Acknowledgements

We are very thankful to our colleagues and well wishers at the department of Industrial engineering & management and Mehran UET, Jamshoro, Sindh, Pakistan to motivate and guide us. We also acknowledge our textile industry friends to guide us in the local & global scenario of lean manufacturing in textile industry. We are also very thankful to the administrative and technical support from the administration & management of Mehran UET, Jamshoro, Sindh, Pakistan for their cooperation and support. We are especially thankful to Mehran UET Library & Online Information Centre to provide the free access to the valuable databases and relevant books, magazines, journals etc at their premises.

Biographies

Muhammad Ali Khan currently works as Assistant Professor in the Department of Industrial Engineering and Management, Mehran UET, Jamshoro, Sindh, Pakistan. He has sixteen years university teaching experience. He has supervised more than a dozen theses at undergraduate level. He is pursuing his PhD in the same department. He has completed his Bachelor of Engineering, Post Graduate Diploma and Master of Engineering in Industrial Engineering and Management. He has also completed his MBA in Industrial Management from IoBM, Karachi, Pakistan. He has authored various research papers for conferences and journals. He has participated in many professional seminars, workshops, symposia and trainings. He is registered with Pakistan Engineering Council and many other professional bodies. He does research in diversified fields of Industrial Engineering. The current projects are related to Lean manufacturing, Six Sigma, Project management, Operations management; MIS and Entrepreneurship. He has also earned various certifications in his areas of research.

Dr. Awais Khatri currently works as Professor in the Department of Textile Engineering, Mehran UET, Jamshoro, Sindh, Pakistan. He is PhD from RMIT University, Australia. He is an approved Supervisor, an expert inspection evaluator and member of NCRC by HEC Pakistan. He is a Professional Engineer (PEC), Program evaluator & master trainer for PEC accreditation as per OBE System. He is Chartered Textile Technologist & Associate of The Textile Institute UK and offered Fellowship at Licentiate of the Society of Dyers & Colourists, UK. He has one registered patent for sustainable fashion clothing, Impact Factor of 62.621 and GSCR of 462. He has supervised numerous B.E. and 12 M.E./M.Phil. theses and participated in various Courses, Trainings and Workshops. He has won many research awards & grants. He has various publications, Conference Proceedings/Abstract, Books, Textbooks/Monographs, International Book Chapters, and Practical Workbooks. He is the active member of many Professional bodies.

Dr. Hussin Bux Marri currently works as Professor in the Department of Mechanical Engineering Technology, Benazir Bhutto Shaheed University of Technology & Skill Development, Kairpur Mirs, Sindh, Pakistan. He has served as Professor and Chairman in the Department of Industrial Engineering & Management, Mehran UET, Jamshoro, Sindh, Pakistan. He is PhD & Post-Doc from Brunel University, UK. He has over 38 years of teaching experience. He is also awarded as “Best teacher” and “Meritorious Professor” from HEC Pakistan. He has served as Member in PEC, HEC and NCRC HEC, Pakistan. He has supervised many B.E, M.E and PhD theses. He has participated in various Courses, Trainings and Workshops. He has won many research awards & grants. He has various publications, Conference Proceedings/Abstract, Books, Textbooks/Monographs, International Book Chapters, and Practical Workbooks. He has high impact factor and high google scholar citation index. He is the active member of many professional bodies.