# Lean Manufacturing for Process Improvement: A Bibliometric Review

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## Abstract

Currently, there are many methodologies for the improvement of production processes documented in different reports. Within the engineering area, some of the most published are Six Sigma, DMAIC, Lean Six Sigma and Lean Manufacturing, and in recent years they have sought to improve response variables such as productivity, lead time, delivery time, OEE, set up time, dead time, among others. The most used lean manufacturing tools within this approach in recent years are 5s, VSM, SMED, standard work, Heijunka, among others. Although there are many bibliometric analyses of the subject, this is a topic that has a large increase in publications, so it is important to update the bibliometric analysis. This article reports a bibliometric analysis of lean manufacturing for process improvement and an analysis of 62 documents found in the Scopus and ScienceDirect databases using the PRISMA methodology chosen for showing the response variable and the tools used in its methodology. The results indicate that Peru, Portugal, India and the United States are the countries with the most publications on this approach, with the Peruvian University of Applied Sciences standing out as the institute with the most publications. The most productive authors on this topic are Ferreira, L.P., Silva, F.J.G. and Sá, J.C. Finally, the journals that publish the most on this topic are International Journal of Advanced Manufacturing Technology, International Journal Of Lean Six Sigma and International Journal of Six Sigma and Competitive Advantage.

## Keywords

Lean Manufacturing, Process Improvement, Bibliometric Analysis, Manufacturing, Process Engineering, Manufacturing Industries, Value Stream Mapping.

## Biographies

**Jorge Luis García Alcaraz** is a full-time researcher at the Industrial Engineering and Manufacturing Department at the Autonomous University of Ciudad Juarez in Mexico. He received an MSc in Industrial Engineering from the Colima Technological Institute (Mexico), a Ph.D. in Industrial Engineering Sciences from Ciudad Juárez Technological Institute (Mexico), a Ph.D. in Innovation in Product Engineering and Industrial Process from University of La Rioja (Spain), a Ph.D. in Sciences and Industrial Technologies from the Public University of Navarre (Spain) and a Postdoc in Manufacturing Process from University of La Rioja (Spain). His main research areas are related to the multicriteria decision-making process and techniques applied to lean manufacturing, production process, and supply chain modeling. He is a founding member of the Mexican Society of Operation Research and an active member of the Mexican Academy of Industrial Engineering.

**Francisco Javier Estrada Orantes** is a full-time researcher in the Department of Industrial Engineering at the Universidad Autonoma de Ciudad Juarez. He received a PhD from the University of Texas, El Paso. Francisco works as Quality and Manufacturing Director at Keytronic Juarez. He has more than 30 years of experience in Six Sigma, Lean Six Sigma, and Lean Manufacturing areas applied to the improvement of KPI's in the manufacturing industry.

**Fabiola Hermosillo Villalobos** receives the master's degree in industrial engineering from the Universidad Autonoma de Ciudad Juarez, Mexico in 2017. She is a full-time doctoral student in the Advanced Engineering Sciences Doctoral Program at Universidad Autonoma de Ciudad Juarez. Fabiola works as a Manufacturing Engineer in Keytronic, with over five years of experience. Her research areas include lean manufacturing and simulations.

**Omar Celis Gracia** received the BS and master's degrees in industrial engineering from the Autonomous University of Ciudad Juarez, Mexico, in 2014 and 2016, respectively. He is a full-time doctoral student in the Advanced Engineering Sciences Doctoral program in the Autonomous University of Ciudad Juarez. His main research areas are related to improve key performance indicators in the maquiladora industry using Lean Six Sigma approaches.