

Part I

Basic Tools for Lean Manufacturing

The book's first section presents some cases related to the essential tools of Lean Manufacturing. These tools have different goals, such as simplifying processes and assisting the decision-making process, reducing ambiguity and time in daily operations, and creating the necessary conditions to smooth production, just to mention a few. Some of these essential tools demand a deep sense of compromise and the right enterprise culture to be sustainable in the long term.

Chapter 1. Standardization

Chapter 1, titled "Standardization," presented by Prof. Noe Alba-Baena, describes a brief review of the evolution of this concept. The chapter discusses the importance of developing and using operations management in production systems. It presents gaps and potential research routes in increasing the business' profitability by addressing this concept. Case scenarios occurring during COVID-19 show how this period tested the economic-system resilience and how standardization supports the strategies to offer products and services to the final customers.

Chapter 2. Standardized Work

Mares-Castro et al. carry out Chap. 2, titled "Standardized Work." The authors analyze the origins and evolution of the Lean Standardized Work tool, as well as its importance and success factors. They analyze a case of Ethylene Vinyl Acetate (EVA) manufacturing, aiming to reduce variation and ensure that operations are customized and controlled.

Chapter 3. Heijunka

Chapter 3, titled "Heijunka," is carried out by Jiménez-García et al. They propose a detailed case study in the application of the heijunka tool, which allows you to understand in a straightforward way how to level production. The Heijunka application was developed by a company dedicated to producing cat food. The concept was applied to a family of products.

Chapter 4. **5S tool**

Chapter 4, “5S tool,” explores the practical application of the 5S framework within a Peruvian manufacturing company. The authors provide an in-depth analysis of 5S’s effectiveness in boosting productivity and streamlining processes, offering insightful perspectives on its pivotal role in operational excellence.

Chapter 5. **Simple but impactful: the power of 5S**

Chapter 5, titled “Simple but impactful: The Power of 5s” is carried out by Solis-Quinteros et al. and presents the importance of the 5S methodology in the processes to maintain and seek continuous improvement in the conditions of organization, order, and cleanliness, as well as the optimization of working conditions, safety, work environment, personal motivation, and efficiency. Therefore, we present the characteristics of the 5S, some research on the 5S that has emerged during the last two decades, the benefits observed after the application, the process of implementation of the 5S, and a case study of the application.