Date: 12/03/2024

Acceptance Letter

Dear
José Luis Rodríguez-Álvarez
Jorge Luis García Alcaraz
Cayetano Navarrete-Molina
Arturo Soto-Cabral

I am pleased to inform you that the chapter "*Root Cause Analysis (RCA)*" has been **ACCEPTED** for publication in the book "*Lean Manufacturing in Latin America - Concepts, Methodologies, and Applications.*" Please make a final review of your chapter regarding structure, format, and citation style.

We thank you for your effort and trust in this initiative to document the impact of Lean Manufacturing in Latin America. Please emphasize the technical approach in your chapter. We strongly recommend the use of original graphic content. Otherwise, it is necessary to obtain permission for non-original material (text, tables, or illustrations that you have incorporated in your manuscript from other sources or previous publications).

Sincerely,

Dr. Guillermo Cortés Robles
Instituto Tecnológico de Orizaba
Mail: guillermo.cr@orizaba.tecnm.mx
Phone: +52 272 725 7056
Orcid: https://orcid.org/0000-0001-8857-7143

Jorge Luis García Alcaraz
Guillermo Cortés Robles
Arturo Realyvásquez Vargas *Editors*

Lean Manufacturing in Latin America

Concepts, Methodologies and
Applications

Springer

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Editors
Jorge Luis García Alcaraz 📵
Department of Industrial Engineering
and Manufacturing
Universidad Autónoma de Ciudad Juárez
Ciudad Juárez, Chihuahua, Mexico

Arturo Realyvásquez Vargas 📵
Department of Industrial Engineering
Tecnológico Nacional de México/Institu
Tijuana, Baja California, Mexico

Guillermo Cortés Robles 📵
Tecnológico Nacional de México
Veracruz, Mexico

Chapter 19
Root Cause Analysis (RCA)

José L. Rodríguez-Álvarez, **Jorge Luis García Alcaraz**,
Cayetano Navarrete-Molina, **and Arturo Soto-Cabral**

Abstract This chapter delves into the RCA manufacturing tool, examining its development and significance and the benefits it offers when properly implemented. In addition, it explores the critical success factors for adoption and recommendations for implementation. Moreover, a bibliometric review was conducted to analyze the RCA-based problem-solving approach in the industry, identifying the authors, institutions, and countries that have contributed the most scientific papers and those that have been most cited. Lastly, an applied case study is presented, demonstrating the step-by-step implementation of an RCA based on the 8D's methodology to resolve a quality issue detected by a customer in a corrugated cardboard box. Using One-Way ANOVA, the cause of the problem was initially validated. The effect was then quantified, enabling the customer to identify the critical quality variable that needs to be maintained. It is important to note that RCAs do not necessarily require substantial investment to eliminate the root cause of a problem. Instead, the use of statistical tools and methodologies, whether classical or based on artificial intelligence and big data, can provide a cost-effective solution.

Keywords Root cause analysis · Problem-solving · 8D's · Corrugated process · Cardboard warp sheet

J. L. Rodríguez-Álvarez (✉)
Department of Management Engineering, TecNM/Región de Los Llanos, Guadalupe Victoria, 34700 Durango, Mexico
e-mail: luis.rodriguez@itsrll.edu.mx

J. L. García Alcaraz
Department of Industrial and Manufacturing Engineering, Autonomous University of Ciudad Juarez, 32310 Juarez, Mexico
e-mail: jorge.garcia@uacj.mx

C. Navarrete-Molina
Department of Chemical Area Environmental Technology, Technological University of Rodeo, 35760 Durango, Mexico

A. Soto-Cabral
Department of Industrial Engineering, TecNM/IT Durango, 34000 Durango, Mexico
e-mail: soto.cabral@itdurango.mx