

# Preface

Mexico is a developing country and member of the North American Free Trade Agreement (NAFTA) together with United States of America (USA) and Canada. This commercial agreement has favored the establishment of a large number of companies from other countries in the northern border of the Mexican land due to tariff preferences. These companies are usually known as maquiladoras, since they import all raw materials and export the finished product.

The arrival of this type of manufacturing companies has led to the implementation of lean manufacturing techniques, especially just in time (JIT), in order to increase efficiency in their production processes and minimize waste. JIT emerged in Japan, a country with social and cultural characteristics different from those present in Mexico. However, the significance of this technique lies precisely on its impact over the processes of import of raw materials, production, and export of finished products.

Based on cases reported by Kumar (2010); Panchal et al. (2012, 2013) in India, this book researched the elements needed for the implementation of just in time, its benefits, and those factors that cause its slow implementation, and addressed this information for the Mexican environment. To achieve this, a questionnaire was designed and applied to 144 companies located in the northern region of the country. Then, a univariate descriptive analysis was performed in order to propose models to relate these three categories researched.

On the one hand, some models proposed associate every JIT element with the benefit it can bring. These models could allow managers and other personnel responsible for the decision making in companies to identify and focus on critical factors that could guarantee benefits pursued. On the other hand, other models relate the same JIT elements with the causes of its slow implementation in order to identify those factors that prevent a successful operation of the approach.

However, this book is not only targeted at supervisors and managers, it is also dedicated to graduate and undergraduate students in the fields of engineering and business management, since it is hoped that its empirical content will be useful to them.

The book includes thirteen chapters divided into five parts. The first part addresses general information of JIT that describes its timeline, discusses its origins, and details its implementation in Western companies. The second part describes the JIT elements identified, its benefits, and the causes of its slow implementation. This part refers to an extensive literature reviewed, which readers are welcome to consult.

On the other hand, the third part of the book defines the methodology used to generate and propose the casual models previously mentioned. It discusses the design of the questionnaire as well as the processes to debug and analyze data. It is worth mentioning that data analysis is based on factor analysis and structural equation modeling techniques (SEM).

In addition, the fourth part includes the descriptive analyses of the sample, which discusses the manufacturing sectors surveyed and the position of respondents of the survey as well as their seniority. Finally, the fifth part describes the models generated from data gathered where JIT elements of companies surveyed are associated with the benefits that these organizations have obtained.

We sincerely hope this work is useful to readers.

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