# Special Issue on Performance Measurement and Optimization for Sustainable Production Processes Improvement


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*Editorial*

# Special Issue on Performance Measurement and Optimization for Sustainable Production Processes Improvement

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## 1. Introduction

Sustainable production process improvement is very important for all enterprises as its implementation can help them to achieve development plans, scheduling, and reduce costs and pollution. An increasing number of papers have discussed optimization and performance measurement for improvement and benchmarking. However, few studies have examined optimization and performance analysis in terms of sustainable process improvement. For these reasons, I had invited high quality papers on optimization and performance analysis for sustainable production process improvement for consideration for publication in the *Processes* journal.

The aim of this Special Issue was to publish state-of-art articles spanning all areas of analytical, theoretical and empirical articles related to sustainable production process improvement. The Special Issue had accepted 24 papers addressing a wide spectrum of topics following but not restricted to:

(1) Benchmarking analysis for sustainable product process improvement
(2) Optimization model for sustainable product process improvement
(3) Productivity or efficiency estimation for sustainable product process improvement
(4) Scheduling optimization for sustainable product process improvement
(5) Strategies for sustainable product process improvement
(6) Innovation for sustainable product process improvement

## 2. Performance Evaluation Issues

Alatefi et al. [1] measured the performance using multivariate non-normal process capability. They used two different models (Box-Cox and Johnson transformations) and compared them via generated data and case study from the previous literature. Kwak [2] analyzed inventory turnover as a performance evaluation of 421 companies in the manufacturing industry. In this paper, the author used Altman's Z score approach to compare top and bottom companies' performance.

Shin et al. [3] tried to find the right innovation type in chemical industry using data envelopment analysis. They used 64 Korean chemical firms from a 2016 Korean innovation survey. Aamir et al. [4] used water treatment waste as a soil stabilizer to measure performance of sustainable soil stabilization process. And Sevinç and Eren [5] used 82 firms in Konya Chamber of industry as automotive supplier industry. They used a data envelopment analysis, analytic hierarchy process and technique for order preference by similarity to ideal solution method to analyze the dataset. Aslam et al. [6] evaluated the industrial process performance using control chart for monitoring the process capability index.

## 3. Sustainable Issues

Qurashi et al. [7] focused on sustainable design to find the sustainable engineering solution. Moreover, Yin et al. [8] argued the quality and speed improvement of green new product development.

Wang et al. [9] used a fuzzy multicriteria decision-making model to evaluate sustainable supplier's performance of garment industry in Vietnam. They also analyzed, with a triple bottom line model, the analytic hierarchy process and technique for order preference by similarity to ideal solution method in their paper.

## 4. Optimization Issues

Realyvásquez-Vargas et al. [10] analyzed a case study about production process standardization implementation for better optimization and increasing efficiency. Kim [11] tried to find the optimal solution of production planning to reduce production cost in furniture production process using Korean furniture industry dataset.

Eghbali Babadi et al. [12] analyzed the operational variables effect on the urea coating process efficiency in a rotary pan. And Rozbroj et al. [13] investigated cylindrical pellet size optimization using discrete element method model. Tan et al. [14] proposed multi-energy interdependent system using robust scheduling optimization model. Zhao et al. [15] tried to obtain the optimal order sequence and the shortest operation time using Gurobi linear programming solver.

## 5. Operational Issues

Kim and Narasimhan [16] focused on the supply network design process of original equipment manufacturers in auto and consumer electronics industries. Wang et al. [17] proposed a multi-criterial decision-making model for supplier selection in the oil and gas industry. In addition, Frigura-Oliasa et al. [18] investigate the operational improvements and technical parameters of the metal oxide varistors manufacturing process.

Wittner et al. [19,20] focused on the air-core-liquid-ring atomization and Chan and Kuo [21] investigated the wheat germ drying performance. Holgado [22] used system engineering approach to performance-based maintenance services design. Yu et al. [23] tried to improve the occupational safety and health level in coal chemical enterprises. Kang et al. [24] used latent Dirichlet allocation to anlyze biochemical research trends.

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