

Peer Review

Review of: "Optimizing Semiconductor Manufacturing for Small and Medium Enterprises: A System-Dynamics and Machine Learning Approach"

Erfan Shahab¹

1. Toronto Metropolitan University, Toronto, Canada

Dear Authors,

Your study presents a well-structured and innovative approach to improving semiconductor manufacturing for SMEs by integrating system-dynamics modeling, linear programming, and predictive analytics. The proposed framework provides valuable insights for both academia and industry.

There are, however, several areas that require further improvement to enhance the impact and applicability of your findings. The study would benefit from a comparative analysis with alternative optimization and machine learning techniques to provide a clearer assessment of the advantages and limitations of the proposed approach. Evaluating the scalability of your framework beyond SMEs would also help clarify its broader applicability in the semiconductor industry.

Some of the predictive analytics models achieve perfect accuracy, suggesting potential overfitting. Applying cross-validation techniques or introducing methods to prevent overfitting would improve the robustness of your models.

In terms of presentation, some mathematical notations and equations require clearer formatting for improved readability. Enhancing the clarity of figures, including appropriate axis labels and legends, would also improve the overall readability of your results. The literature review is well-developed but could benefit from additional references to recent advancements in AI-driven optimization for manufacturing, such as reinforcement learning or hybrid AI-optimization models.

Overall, this paper presents a strong and promising contribution to the field. Addressing the above suggestions will enhance its clarity, credibility, and impact. I look forward to seeing the revised version.

Best regards,

Declarations

Potential competing interests: No potential competing interests to declare.