# Article information:

Sustainability assessment during machining processes: Evidence from the econ-environmental modelling - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0959652624010606>

# Article summary:

1. The article proposes a novel sustainable performance model for evaluating machining processes based on economic and environmental sustainability, using text mining technology and grey correlation analysis.

2. The model identifies key factors influencing the development of machining processes towards economic and environmental sustainability, improving the objectivity of sustainable development assessment indexes.

3. A case study is conducted to validate the proposed model's feasibility, confirming its effectiveness in assessing sustainable development in the machining field and providing a valuable foundation for decision-making considering both economic and environmental sustainability in machining practices.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article titled "Sustainability assessment during machining processes: Evidence from the econ-environmental modelling" presents a novel sustainable performance model for evaluating machining processes based on economic and environmental sustainability. The study aims to address the pressing need for integrated assessment models in the manufacturing industry due to growing public concern about sustainable development.

One of the strengths of the article is its comprehensive review of existing assessment frameworks in sustainable manufacturing, highlighting key concepts such as Environmentally Conscious Manufacturing (ECM), Environmental Management Systems (EMS), Product Life-cycle Assessment (PLCA), Life-Cycle Sustainability Assessment (LCSA), and Decision Support System (DSS). This provides a solid foundation for understanding the current landscape of sustainability assessment in manufacturing.

However, there are several potential biases and limitations in the article that need to be addressed. Firstly, the article focuses primarily on economic and environmental sustainability, neglecting social aspects of sustainability which are equally important. Social impacts such as worker safety, labor rights, and community well-being should also be considered in a holistic sustainability assessment model.

Additionally, while the proposed sustainable performance model is innovative and promising, there is limited evidence provided to support its effectiveness. The case study conducted to validate the model is based on existing data from a typical machining process, which may not fully capture the complexity and variability of real-world scenarios. More empirical evidence from diverse case studies would strengthen the credibility of the proposed model.

Furthermore, there is a lack of discussion on potential risks associated with implementing sustainable practices in machining processes. For example, transitioning to greener technologies or materials may have upfront costs or require significant investments in infrastructure. It is important to consider these trade-offs and potential challenges when advocating for sustainable development in manufacturing.

Overall, while the article presents an interesting approach to sustainability assessment in machining processes, it could benefit from addressing biases related to limited evidence supporting the proposed model's effectiveness, overlooking social aspects of sustainability, and not discussing potential risks associated with sustainable practices. By addressing these limitations, future research can further advance our understanding of sustainable development in manufacturing.

# Topics for further research:

* Social sustainability in manufacturing assessment frameworks
* Case studies on implementing sustainable practices in machining processes
* Economic implications of transitioning to greener technologies in manufacturing
* Worker safety and labor rights in sustainable manufacturing
* Challenges of integrating environmental management systems in machining processes
* Community well-being considerations in sustainable development in manufacturing

# Report location:

<https://www.fullpicture.app/item/fd6d23e8e467b6b22164cd65835a3c09>