# Review of: "Optimized Material Removal and Tool Wear Rates in Milling API 5ST TS-90 Alloy: AI-Driven Optimization and Modelling with ANN, ANFIS, and RSM"

Salih Rushdi[1]

1 University of Al-Qadisiyah

Potential competing interests: No potential competing interests to declare.

1. Experimental Design and Reproducibility: The study mentions conducting twenty experimental runs, which is a good start. However, it would be beneficial to include more details on the experimental setup, such as how randomization was ensured and if any control measures were taken to minimize variability. This would enhance the reproducibility of the results.
2. Comparison Metrics: While the study mentions that ANFIS and RSM were slightly better than ANN in predicting MRR and TWR, it would be helpful to include specific metrics or statistical tests to support this claim. Providing p-values or confidence intervals would give more credibility to the comparisons.
3. Model Validation: The study states that the optimum milling parameters were validated through an experiment. It would be useful to include additional information on the validation process, such as the number of runs and how the data was analyzed to confirm the validity of the predicted values.
4. Discussion of Model Assumptions and Limitations: It's important to discuss any assumptions made in the modeling process and acknowledge the limitations of the study. For instance, were there any assumptions about the stability of the milling machine or the uniformity of the material?
5. Practical Implementation Considerations: While the optimized parameters are provided, it would be beneficial to discuss any practical considerations or challenges that might arise when implementing these parameters in an actual manufacturing setting. Are there any constraints, such as machine capabilities or safety concerns, that need to be addressed?
6. Generalizability: The study focuses on milling API 5ST TS-90 alloys. It would be interesting to discuss the potential applicability of the findings to other alloys or materials. Are there any insights gained that could be transferred to similar manufacturing processes?
7. Future Research Directions: It could be helpful to suggest potential avenues for future research. Are there any specific aspects of the milling process that were not covered in this study but could be explored in future work?
8. Literature Review: While the literature review gives a good background on material removal rates and tool wear rates in milling, it could be more focused on previous studies related specifically to API 5ST TS-90 alloy. This would provide a clearer context for the current research.
9. Some sentences are quite long and complex, which can make them challenging to follow. Breaking them down or restructuring them for clarity would improve readability.