ISSN(O): 2320-5407 | ISSN(P): 3107-4928

ISSN NO. 2320-5407

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

Manuscript No.: **IJAR-57535**

Title: AI-Based Predictive Modeling of Sustainable Geopolymer Concrete Using Agricultural Waste Materials.

Recommendation:
Accept as it is .....
Accept after minor revision...✓.....
Accept after major revision .....
Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality	✓			
Clarity		✓		
Significance		✓		

Reviewer's ID: JPR- **098**

Detailed Reviewer's Report

Decision: Accept after Minor Revision

Summary:

The manuscript proposes an **AI-based predictive modeling framework for sustainable geopolymer concrete** using agricultural waste materials such as Sugarcane Bagasse Ash, Banana Peel Ash, and Fly Ash Type C, with SVR achieving the best predictive performance.

Strengths:

- Strong **interdisciplinary relevance** (AI + sustainable construction materials)
- Good comparison of multiple regression models (Ridge, Elastic Net, PLS, SVR)
- Clear discussion of material-wise feature impact
- Practical contribution toward reducing experimental cost and time
- SVR results show strong predictive performance (high R^2 values)

ISSN(O): 2320-5407 | ISSN(P): 3107-4928
International Journal of Advanced Research
Publisher's Name: Jana Publication and Research LLP
www.journalijar.com

REVIEWER'S REPORT

Major Issues:

- Dataset size and composition details are insufficiently explained
- No cross-validation or robustness analysis for ML models
- Limited comparison with advanced ML/deep learning approaches
- Some performance metrics appear unusually high without detailed validation discussion

Minor Issues:

- Repetition exists between abstract, discussion, and conclusion
- Formatting inconsistencies and spacing issues throughout the manuscript
- Figures/tables need improved presentation quality

Final Comment:

The paper presents a **useful AI-driven approach for sustainable concrete research** with promising predictive performance. However, improvements in methodological rigor, dataset transparency, and presentation quality are needed before publication.