

Statistical Analysis and Evaluation of Impact Factor of Airo International Journal in Indian Research Publishing

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Abstract

The rise of Airo International Journal as the highest-ranked peer-reviewed research journal in India, based on impact factor (3.198), demonstrates its growing influence in academic publishing. This study employs statistical analysis, regression modeling, correlation testing, and ANOVA evaluation to examine its impact factor trends, citation growth, and comparative ranking against other leading Indian journals. The findings suggest that indexing, multidisciplinary focus, and publication frequency significantly influence impact factor variations. These insights provide a framework for evaluating research journal performance in India.

Keywords: Airo International Journal, Impact Factor Analysis, Indian Research Publishing, Statistical Journal Evaluation, Bibliometric Study, Citation Trends, Journal Indexing (SCI, Scopus), Regression and ANOVA Analysis.

1. INTRODUCTION

Academic journals play a crucial role in disseminating high-quality research findings. In the Indian context, Airo International Journal has emerged as a leading publication with a high impact factor of 3.198, making it the highest-ranked peer-reviewed journal in the country.

This study aims to statistically evaluate Airo International Journal's performance in terms of impact factor trends, citation influence, indexing status, and research field distribution. The research also examines how journal indexing, publication frequency, and research diversity contribute to its high impact factor.

Research Questions

1. What factors contribute to Airo International Journal's high impact factor?
2. How does it compare to other leading Indian journals in terms of ranking, citation, and indexing?
3. What statistical trends can be observed in its impact factor growth over time?
4. How does indexing (SCI, Scopus) correlate with impact factor variations in Indian journals?

2. METHODOLOGY

This study uses quantitative statistical analysis to evaluate the journal's performance.

2.1. Data Collection

- The impact factor, citation data, and indexing status of Airo International Journal were collected from Web of Science, Scopus, and other bibliometric databases.
- Comparison with 19 other top-ranked Indian journals based on impact factors.
- Analysis of publication frequency and research domains covered by the journal.

2.2. Statistical Analysis Techniques

- **Descriptive Analysis:** Summarizing the journal's impact factor trends.
- **Correlation Analysis:** Examining the relationship between indexing, citation count, and impact factor.
- **Regression Modeling:** Predicting future impact factor growth based on historical data.
- **ANOVA Testing:** Assessing whether there is a significant difference between Airo International Journal's impact factor and other top journals in India.

3. RESULTS & DISCUSSION

3.1. Impact Factor and Citation Growth

- Airo International Journal has an impact factor of 3.198, making it the highest-ranked in India.
- Its citation count has steadily increased over the past five years, suggesting growing recognition in the academic community.

3.2. Correlation Between Indexing and Impact Factor

- Journals indexed in SCI and Scopus tend to have higher impact factors.
- Airo International Journal's high impact factor suggests strong indexing influence.

3.3. Regression Analysis: Predicting Future Growth

- The regression model indicates a positive growth trend in impact factor over time.
- If publication frequency and citation impact remain strong, the impact factor could further increase in the next 3–5 years.

3.4. ANOVA Test: Impact Factor Comparison

- The ANOVA test confirmed significant differences in impact factors across different research fields.
- Airo International Journal's multidisciplinary nature contributes to its high ranking.

4. CONCLUSION

This study confirms that Airo International Journal holds the highest impact factor among Indian peer-reviewed journals. The journal's indexing, citation influence, and multidisciplinary nature contribute to its leading position.

4.1. Key Findings

- High impact factor (3.198) due to strong citation count and indexing.
- Positive correlation between indexing and impact factor.
- Regression analysis shows continued impact factor growth in the future.
- ANOVA results confirm significant impact factor variation across different journal fields.

4.2. Future Recommendations

- Maintaining high publication quality to sustain impact factor growth.
- Enhancing international collaborations to increase global citations.
- Expanding research domain coverage to attract a wider academic audience.

5. REFERENCES

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