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Impact and Consequences of Excluding Post-Retraction Citations from Journal Impact Factor Calculations

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Abstract

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The retraction of flawed or questionable studies is crucial for maintaining the integrity and reliability of scientific literature. However, many retracted papers continue to be cited, often without explicit acknowledgement of their retracted status. Continued citations of retracted publications can disseminate unreliable results and distort citation-based indicators, such as the Journal Impact Factor. To address these concerns, Clarivate announced in May 2025 that citations to and from retracted papers made after the official retraction date will be excluded from Journal Impact Factor calculations. This commentary addresses the issue of post-retraction citations, Clarivate's rationale for the change, and its expected benefits and potential impacts. It argues that although the policy enhances research integrity, it may also discourage journals from pursuing and disclosing retractions due to the possible negative impact on their metrics.

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Introduction

The Journal Impact Factor (JIF) is one of the most widely used bibliometric indicators in the scientific community. It measures how often, on average, a journal's articles from the past two years are cited in a specific year (1). A higher JIF is typically

interpreted as an indication of greater scholarly reach or impact. However, despite its widespread use, the metric has been criticized for several methodological limitations. One major concern is that it includes citations to and from retracted articles, that is,



publications that have been formally withdrawn due to errors, research misconduct, or ethical violations (2). Counting these citations artificially inflates JIFs, distorts journal rankings, and undermines the reliability of scholarly metrics.

The Problem of Continued Citation of Retracted Publications

By preventing the dissemination of inaccurate, misleading, or flawed information, retractions play a critical role in maintaining the credibility, reliability, and integrity of scientific literature (3). Organizations like the Committee on Publication Ethics (COPE) have established guidelines recommending that retraction notices be publicly accessible, clearly explain the reason for retraction, and be prominently linked to the original publication (4). However, retracted publications are frequently used and cited without attention to their retraction status. This issue is particularly concerning given the significant increase in the proportion of retracted publications, from about 0.04% in the early 2010s to 0.2% by 2024 (5).

Numerous studies across different fields have investigated post-retraction citation patterns. For example, Sharma et al. found that 82% of retracted articles in the biomedical sciences continued to be cited after their retraction (6). Similar patterns have been observed in computer science (82%), dentistry (62%), stem cell research (77%), and anesthesiology (46%) (7-10). Most studies suggest that retraction reduces citation rates but rarely eliminates them (11, 12). In contrast, some research has reported that citation rates may even increase after retraction (13, 14). It is particularly concerning that post-retraction citations rarely acknowledge the retraction status of the cited work. Past studies have indicated that only 4% to 6% of such citations explicitly acknowledge the article's retracted status (9, 15). The tone and context of post-retraction citations remain another significant concern, as studies have shown that most of these citations are positive or neutral, rather than negative or critical (16, 17).

Clarivate's Policy Change

Citations to all published articles, regardless of

their post-publication status, have historically been included in JIF calculations. In May 2025, Clarivate implemented a significant methodological change. According to the new policy, retracted articles still count in the denominator, but any citations to or from these articles recorded after the retraction date are excluded from the numerator. The updated methodology is outlined as follows:

- **Numerator:** The total number of citations in the current year to articles published in the previous two years, excluding citations to and from retracted articles made after their retraction date.
- **Denominator:** The total number of citable items published in the previous two years, including retracted articles.

For illustrative purposes, consider a journal that published 100 citable items during 2022-2023, of which two were retracted. Suppose this journal initially received 250 citations in 2024, including 10 citations to or from retracted articles that occurred after their retraction date. Under the previous methodology, the JIF would be 2.50 ($250 \div 100$). Under the new policy, the numerator is adjusted to 240, resulting in a revised JIF of 2.40 ($240 \div 100$).

This policy revision aims to prevent the artificial inflation of JIF scores caused by invalid citations, ensure that the JIF more accurately reflects citations to trustworthy research outputs, and respond to the increasing demands of the academic community for greater accountability, transparency, and integrity in research assessment practices (18). However, preliminary data released by Clarivate indicate that the overall impact on JIF values is minimal. Of all journals listed in the 2024 edition of the Journal Citation Report (JCR), approximately 2,000 (10%) are expected to have some citations removed, while only 1% are expected to see a change in their JIF. Among those affected, only a small proportion is likely to shift between journal quartiles (19).

The scholarly publishing system is expected to benefit in several ways from this policy change:

- **Improved metric integrity:** By excluding citations to and from retracted articles after the retraction date, the revised methodology ensures that JIFs reflect only the impact of legitimate and reliable

research. This change helps reduce the influence of articles that no longer meet the standards of reliability and accuracy.

- Reduced incentives for citation manipulation: The policy helps prevent gaming JIFs by eliminating artificial inflation caused by invalid citations.

- Strengthened editorial standards: The policy is likely to encourage journals to enhance screening procedures, peer-review integrity, and post-publication monitoring to more effectively detect problematic work before publication.

- Increased trust in scholarly metrics: By reducing the bibliometric impact of retracted papers, the policy decreases the likelihood of unreliable findings being further disseminated and cited, thereby improving confidence in citation-based indicators.

- Greater author awareness: The new policy may increase researchers' attention to citation retraction notices, increase their awareness of citation metadata, and help them avoid referencing problematic literature. It can also promote more responsible citation practices by encouraging authors to verify the validity of the sources they cite.

- Enhanced bibliometric infrastructures: The policy may motivate publishers and indexing services to improve their systems for identifying retracted articles.

While this policy represents a significant step toward aligning bibliometric practices with the principles of research integrity, its implementation is not without challenges. Several concerns may reduce its effectiveness or cause unintended outcomes:

- Lack of differentiation in retraction causes: The policy does not distinguish between retractions due to honest errors and those caused by research misconduct. Applying a uniform citation exclusion in all cases may discourage transparency and the correction of honest mistakes.

- Disincentives to retract: Journals may avoid issuing retractions due to the potential negative impact on their JIF. Because retracted articles remain in the denominator while their citations are excluded from the numerator, journals may be penalized for making corrective actions.

- Communication and transparency challenges: JIF scores may decrease after policy implementation, which could cause misunderstandings among stakeholders if clarifications about methodological changes are not communicated effectively.

- Disproportionate effects on smaller or niche journals: Journals with lower publication volumes or fewer citations, particularly those in emerging or specialized fields, may be disproportionately affected by the removal of even a small number of citations.

- Persistence of historical distortions: JIF values still reflect artificially inflated citation counts from retracted articles if those citations occurred before the retraction date, as the policy does not retroactively exclude pre-retraction citations.

Broader Impact on the Scholarly Communication System

Beyond its immediate effects on JIF calculations, Clarivate's policy is likely to influence the broader academic community and the scholarly publishing system. It may shape how researchers approach citation practices by emphasizing the importance of verifying the integrity and retraction status of the works they reference. This could also encourage journals to strengthen their editorial policies, increase investment in comprehensive post-publication monitoring, and adopt more transparent retraction procedures. Additionally, the policy may encourage bibliometric service providers and indexing platforms to enhance the visibility, traceability, and flagging of retracted articles. However, other major indexing systems, including Scopus, Dimensions, and Google Scholar, have not yet announced similar measures. This discrepancy may lead to inconsistencies across

platforms and cause confusion among researchers. To maintain consistency, it is crucial that other major bibliometric and impact assessment providers adopt similar citation exclusion policies.

Conclusion

Clarivate's recent policy marks a significant step towards better aligning the JIF with the principles of research integrity and scholarly accountability. The policy aims to enhance the accuracy and credibility of this indicator by ensuring that it more accurately reflects the impact of legitimate, reliable, and valid research outputs, thereby reducing the distortive effects of post-retraction citations. It also addresses concerns within the academic community, including those outlined in the San Francisco Declaration on Research Assessment (DORA) and the recommendations of the Committee on Publication Ethics (COPE), which highlight the need for greater accountability, transparency, and responsible use of bibliometric indicators in research evaluation. The implementation of this policy is expected to bring several benefits, as well as potential challenges. While it may encourage more thorough pre-publication screening to lower retraction rates, it could also discourage journals from issuing retractions due to concerns about the potential negative impact on their JIF. It is also important to note that, although the revised methodology addresses one major source of distortion in JIFs, it does not completely resolve the broader methodological limitations of this indicator. To ensure the policy's intended goals are achieved, it is important for Clarivate and other stakeholders in the scholarly publishing ecosystem to engage in ongoing monitoring and transparent evaluation of the policy's implementation. Such efforts will help assess its effectiveness, identify unintended

consequences, and guide necessary improvements. Additionally, future research should investigate the reactions of various stakeholders, including publishers, journal editors, peer reviewers, and authors, as well as the broader effects of the policy on research practices, citation patterns, and editorial decision-making.

Declaration

Acknowledgment

None

Conflict of Interest

The author declared no conflict of interest related to this manuscript.

Ethical Statement

The author confirms that the submitted manuscript is original, has not been published previously, and is not under consideration for publication elsewhere in any language. The author wrote the first draft of the manuscript. ChatGPT was then used to assist with editing and improving the clarity of the language. After using this tool, the author carefully reviewed and edited the content as needed and took full responsibility for the integrity and accuracy of the final manuscript. Generative AI tools were not used to generate content, conduct literature searches, or develop discussions.

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Authors' Contribution

Amin Erfanmanesh conducted all parts of this study and is responsible for the integrity and accuracy of all issues in this commentary.

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