



Implications of Publication Timing Discrepancies for Citations and Journal Metrics

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Introduction

The transition of scholarly publishing from exclusively print to a dual-format model, encompassing both online and print mediums, has introduced temporal complexities in assessing research impact. Although online publications facilitate the rapid dissemination of knowledge, the continued reliance on print-based metrics for calculating journal impact factors results in measurement distortions [1]. This temporal incongruity leads to quantifiable distortions in the assessment and comparison of scholarly impact across journals [2]. The online-to-print lag, defined as the interval between electronic availability and formal print publication, has progressively increased over the past decade, with some journals experiencing delays of over 12 months [1]. These temporal discrepancies fundamentally challenge the validity of traditional citation-based metrics and necessitate a systematic examination of their implications for stakeholders in medical publishing [3].

Impact on Journal Metrics

Online-to-print lags significantly inflate journal impact factors by extending the citation window beyond the intended two-year period. Articles published online in advance accumulate citations during the lag period; however, these citations are attributed to the later print publication date, artificially enhancing the impact factor calculations. An analysis of neuroscience journals revealed that delays between online and print publications increased steadily from 2003 to 2011, with approximately 50% of the studied journals exhibiting lags exceeding three months by 2011 [1]. The magnitude of impact factor inflation correlates directly with lag duration, and journals with longer delays demonstrate greater enhancements in artificial metrics.

The immediacy index, which measures citations received within the publication year, suffers from severe distortions from online-to-print lags [2]. Citations accumulated by online-accessible articles in the press approach equivalence to citations received during the formal publication year. This phenomenon creates systematic disadvantages for online-only and print-only journals compared to dual-format journals that maintain extended publication lags. This distortion extends beyond impact factors to affect related scientometric indicators, fundamentally questioning the validity of comparative journal rankings based on these metrics [2,3].

Publication Delay Variations

Significant heterogeneity exists in publication timelines across journals with varying impacts and indexing statuses. PubMed-indexed journals demonstrate slower acceptance and publication times than non-indexed journals, with submission-to-publication intervals ranging from 61 to 615 days [3]. Publication delays are inversely correlated with citation frequency in certain high-impact journals, suggesting that temporal efficiency may influence article visibility and subsequent citation accumulation [4].

Implications for Citation Metrics

The temporal dimension of publications profoundly affects the citation-based evaluation systems. Author-level metrics, including the h-index and citation counts, depend on article visibility timing, with earlier online availability potentially conferring a citation advantage [5]. The proliferation of altmetrics and social media-based indicators adds complexity, as online-first articles accumulate attention metrics before formal publication [4]. Strategic manipulation concerns arise when journals deliberately extend online-to-print lags to enhance their

impact metrics, raising questions about citation gaming and bibliometric integrity [1].

Stakeholder Considerations

Publication timing decisions have strategic implications for journal competitiveness in metric-driven evaluation systems [2]. Researchers must navigate journal selection, considering not only subject relevance and quality but also the temporal factors affecting downstream impact assessment [3]. Institutional administrators and funding agencies relying on bibliometric indicators must be aware of time-related distortions when evaluating research productivity [5]. Database providers, including Clarivate Analytics, have begun transitioning to electronic publication dates for impact factor calculations to address these discrepancies [1]. Alternative metrics that account for the first publication date, regardless of the format, would eliminate these analytical problems and provide more equitable journal comparisons [2].

Conclusion

Online-to-print publication lags introduce systematic biases into citation-based journal metrics, artificially inflating impact factors and disadvantaging journals with shorter intervals. The magnitude of these distortions correlates with lag duration and varies substantially across disciplines and publishers. Stakeholders must critically evaluate time-related confounders when interpreting bibliometric data. Transitioning to online publication dates for metric calculations represents a necessary reform to restore equity and validity in research evaluation systems.

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