The True Impact Function: A Citation Velocity Metric for Journal Evaluation

Edward J. Ciaccio
Ignatius Journal Services LLC

Abstract

The True Impact Function (TIF) is introduced as a dynamic citation-velocity metric designed to evaluate scholarly journals based on normalized citation accumulation over time. Unlike traditional impact metrics, TIF incorporates both article volume and temporal factors, providing a more responsive and interpretable measure of scholarly influence.

Introduction

Conventional journal metrics such as the Journal Impact Factor emphasize aggregate citation counts over fixed intervals. However, these measures do not directly capture citation velocity or account for variations in publication volume and timing. The True Impact Function addresses these limitations.

Methods

The True Impact Function is defined as:

TIF = C / (A × T)

- **C** = cumulative citations
- **A** = number of articles
- **T** = mean elapsed time since publication

Citation data are obtained from publicly accessible bibliometric sources, including Google Scholar. Article counts and publication timing are normalized to ensure comparability across journals.

Results (Conceptual)

The TIF framework enables comparison of journals based on citation velocity rather than static citation counts. Journals with rapid citation accumulation relative to publication volume achieve higher TIF values.

Discussion

The TIF metric complements existing bibliometric indicators by introducing a time-normalized dimension of impact. It is particularly suited to rapidly evolving research fields where citation dynamics change quickly.

Conclusion

The True Impact Function provides a transparent and reproducible method for evaluating scholarly influence. When used alongside integrity-based measures such as the Journal Integrity Score (JIS), it supports a more comprehensive assessment of journals.

Keywords

citation metrics, journal evaluation, bibliometrics, scholarly impact, publication analysis