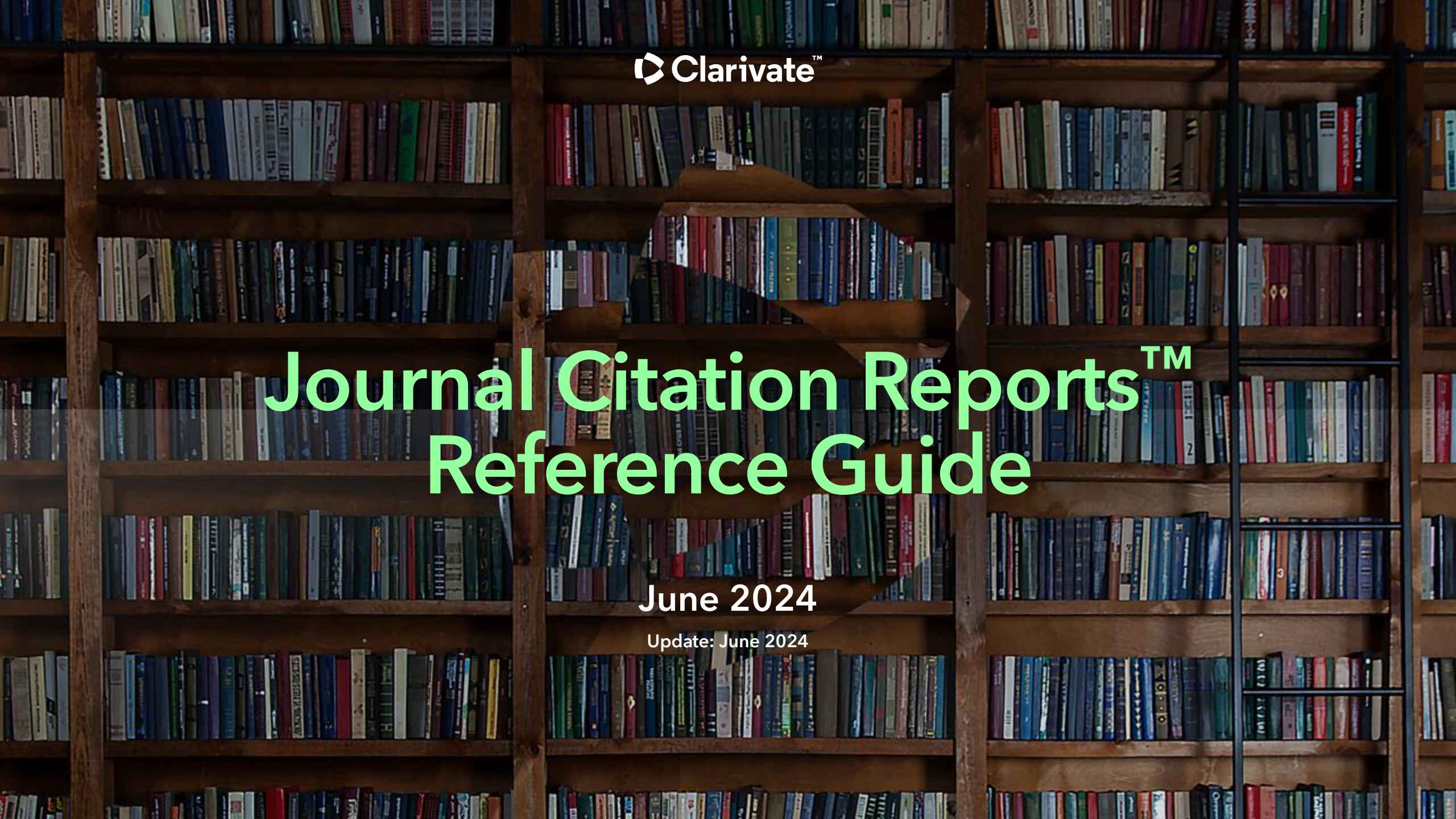

Clarivate™

Journal Citation Reports™ Reference Guide

June 2024

Update: June 2024

Contents

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What is the Journal Citation Report

How is Journal Citation Reports (JCR) used?

The JIF was originally developed by Drs. Eugene Garfield and Irving H. Sher as a metric to aid in selection of additional journals for the newly created Science Citation Index™.

Today librarians continue to use the JCR as a tool in **building and managing their journal collections**. Publishers use the JCR to **gauge journal performance and assess their competitors**. Researchers use the JCR to **identify appropriate journals for publication of their work** based on many characteristics.

How is the Journal Impact Factor calculated

How is the Journal Impact Factor (JIF) calculated?

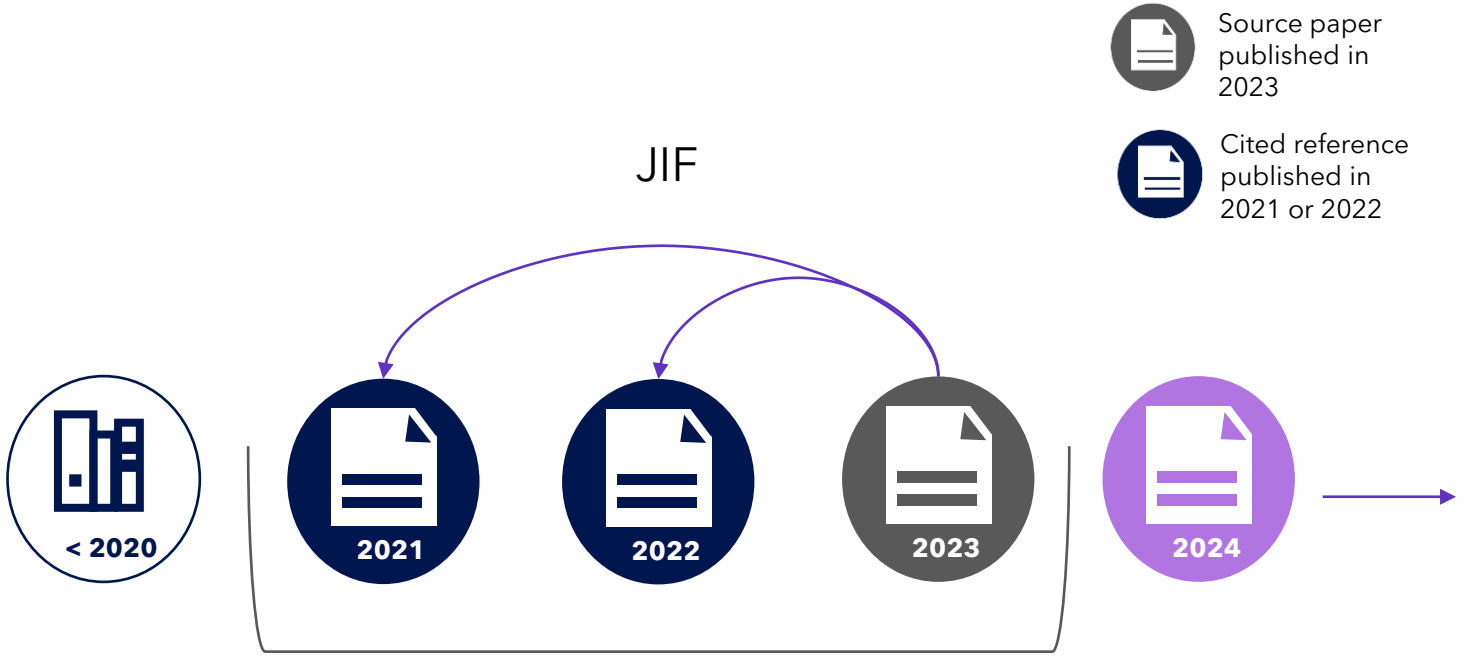
All JIF metrics, including rank and quartile, are available to all journals in the following editions for eligible* subject categories:

- Science Citation Index Expanded™
- Social Sciences Citation Index™
- Arts & Humanities Citation Index™
- Emerging Sources Citation Index™

* Arts and Humanities only categories will not be ranked by JIF.

The JIF is defined as citations to the journal in the JCR year to items published in the previous two years, divided by the total number of citable items, (i.e., Articles and Reviews) published in the journal in the previous two years.

The JCR year is the last complete year within that year's JCR data set. For example, the JCR year for the 2024 release is 2023.



Journal Impact Factor Numerator

Numerator

2023 citations from journals, proceedings, and books to all 2021 and 2022 journal items

2023 JIF =

Number of Articles and Reviews (citable items) published in the journal in 2021 and 2022

Denominator

The numerator of the JIF consists of any citation from material published in the JCR year to material the journal published in the prior two years, regardless of what type of item might be cited. Each cited reference to a scholarly publication is an acknowledgement of influence. JCR therefore aggregates all citations to a given journal in the numerator regardless of cited document type.

The citations that comprise the JIF numerator are drawn from all indexes in the Web of Science Core Collection™: Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index, Emerging Sources Citation Index, Conference Proceedings Citation Index, and Book Citation Index.

Further Reading:

Hubbard, S.C. and McVeigh, M.E. (2011), Casting a wide net: the Journal Impact Factor numerator. *Learned Publishing*, 24: 133-137. https://doi.org/10.1087/20110208

Journal Impact Factor Denominator and Citable Items

Numerator

2023 citations from journals, proceedings, and books to all 2021 and 2022 journal items

2023 JIF =

Number of Articles and Reviews (citable items) published in the journal in 2021 and 2022

Denominator

Citable items are all items indexed in the Web of Science as Articles and Reviews. Items with any other document type, including Editorial Material, Letter, and Meeting Abstract, are not included in the denominator.

Every journal organizes content under different section names and all Web of Science document types are assigned at the section level. Each journal is evaluated individually for the characteristics of the items that appear in each issue section, such as "Research" and "Opinions" sections. In our consideration in determining document types for a section, we review the following elements that are typical bibliographic characteristics of scholarly works:

- Abstract
- Descriptive article titles
- Named author with author addresses
- Article length
- Cited References
- Data content

No single feature defines a “citable” item – but consideration of all of these, across many examples of the items in each section results in a strongly consistent association between items identified as “citable” (articles and reviews) and items whose citations create the Journal Impact Factor.

Further Reading:

McVeigh M.E., Mann S.J. (2009), The Journal Impact Factor Denominator: Defining Citable (Counted) Items. *JAMA*. 302(10):1107–1109. https://doi.org/10.1001/jama.2009.1301

Handling journal title variations in cited references

There is great variation in how authors format citations, including how cited works (also known as source titles or journal titles) appear in those citations.

Handling this issue is of **critical importance for the JCR** to properly attribute and aggregate citations for journal-level metrics. To manage these variants, JCR editors build a series of dictionary entries associating each preferred title with a set of variant forms for the cited work. These entries are derived using direct observation and analysis of cited reference data.

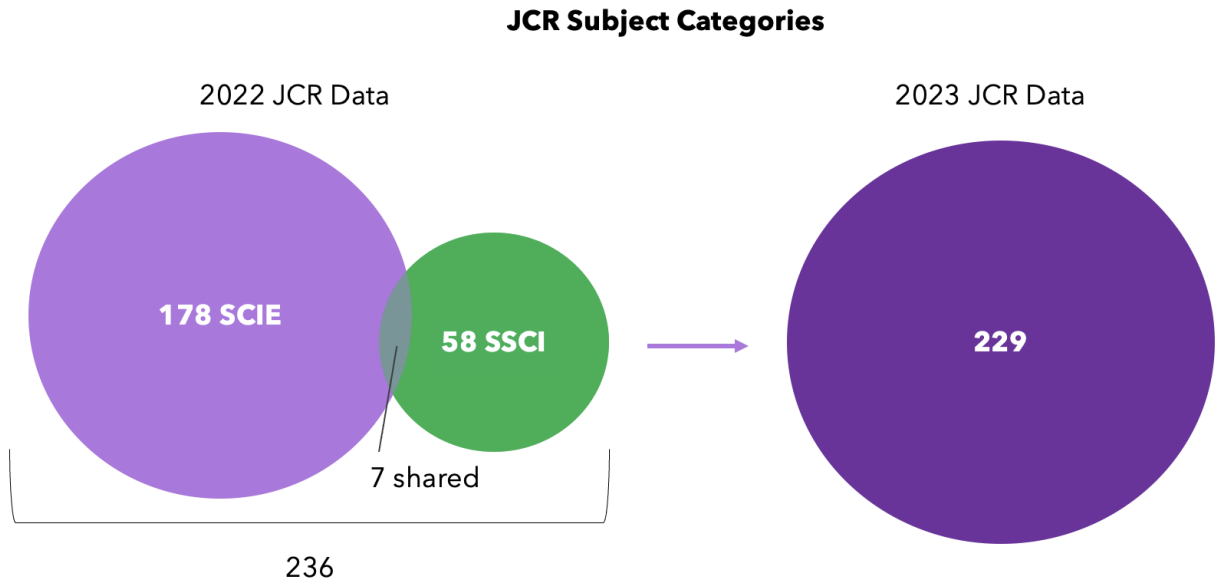
JCR editors have access to more than **2 billion cited references** in the Web of Science as well as specialized citation reports prepared for each JCR production cycle. Variants can include alternative abbreviated forms, alternate spellings, common misspellings or typographical errors, part numbers, numbered supplements, and others. Any observed variant that can be associated unambiguously with the covered journal is included in the dictionary.

Journal Impact Factor™ changes in this release

New in the 2024 release

The 2024 JCR release introduces unified rankings across subject categories. This means that each eligible subject category ranking* will include journals assigned to that category regardless of edition, including the Emerging Sources Citation Index (ESCI). The creation of unified category rankings provides a simpler and more complete category view for the evaluation of journal performance.

Please see **Mapping the Path to Future Changes in the Journal Citation Reports** to learn more about these changes.



* Arts and Humanities only categories will not be ranked by JIF.

How ties work for category rank and quartile

How ties work for rank and quartile

- Ties share the same rank position
- Quartiles are calculated using the rank position
- Ties are not split between quartiles
- Standard rounding rules apply
- Ties can include two or more journals

Rank - Journals in the same category with the same JIF are given the same rank position for that subject category ranking, skipping positions for the subsequent journal in the ranking.

Quartile - A journal's subject category quartile is determined by its rank position. The rank position is divided by the total number of journals in the category to calculate the "Z" value. The quartile is determined by where Z falls in the scale of 0.0-1.0 (see chart). Since journals with a shared JIF in the same category share the same rank position, they also share the same quartile.

Journal	JIF	Rank	Z (Rank/Total)	Quartile
Title A	1.8	1/10	0.100	Q1
Title B	1.6	2/10	0.200	Q1
Title C	1.5	3/10	0.300	Q2
Title D	1.5	3/10	0.300	Q2
Title E	1.3	5/10	0.500	Q2
Title F	1.1	6/10	0.600	Q3
Title G	1.0	7/10	0.700	Q3
Title H	0.9	8/10	0.800	Q4
Title I	0.6	9/10	0.900	Q4
Title J	0.5	10/10	1.000	Q4

Same rank = same Z value = same quartile

Q1 =	0.000 < **Z** ≤ 0.250	Highest
Q2 =	0.250 < **Z** ≤ 0.500	
Q3 =	0.500 < **Z** ≤ 0.750	
Q4 =	0.750 < **Z**	Lowest

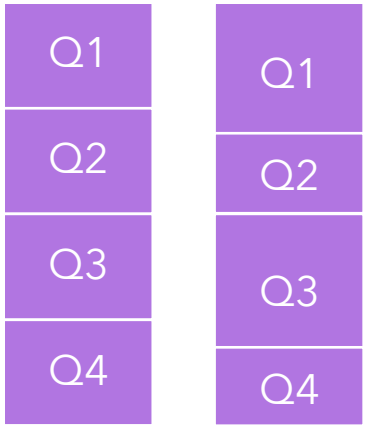
$$Z = \frac{\text{Rank Position}}{\text{Total Journals in Ranking}}$$

Decimal change and JIF ties

The move to display the JIF to one decimal place in the 2023 release (2022 data) creates more tied rankings. This affects JIF quartile distributions as quartiles are calculated according to the number of rank positions in category, not simply the number of journals in a category divided evenly by four.

JIF display to 3 decimal places
[2021 JCR data year and earlier]

- Fewer ties in rank
- **Number of rank positions equal to the number of journals**
- JIF quartiles are evenly sized by number of rank positions
- **JIF quartiles are evenly sized by number of journals**



JIF display to 1 decimal place
[2022 JCR data year and later]

- More ties in rank (i.e., multiple journals with the same JIF)
- **Number of rank positions is not equal to the number of journals**
- JIF quartiles are evenly sized by number of rank positions
- **JIF quartiles are not evenly sized by number of journals**

NOTE: Height of bar is representative of the number of journals in each JIF quartile

The quartile distribution has typically resulted in 25% of journals contained in each quartile – as ties have been infrequent. However, with an increase in the number of ties, the distribution will shift. Journals tied at the same rank cannot be split between two quartiles.

How is the Journal Citation Indicator calculated

The Journal Citation Indicator (JCI)

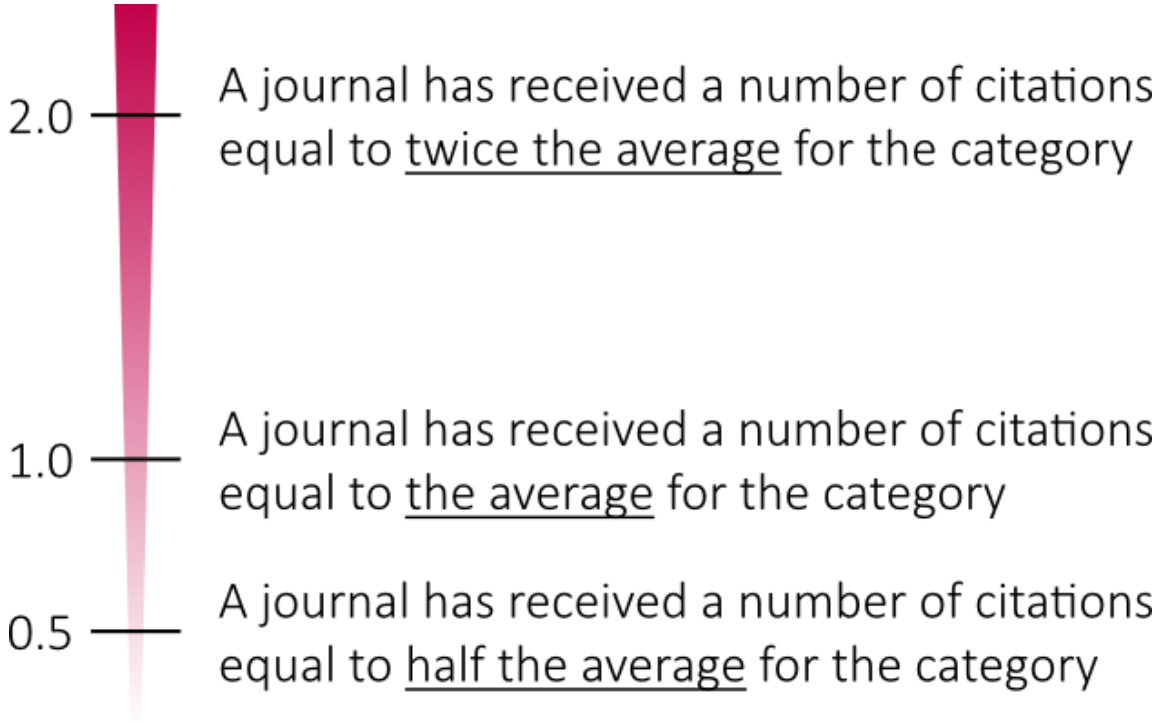
A normalized indicator for easier comparisons by:

- Field
- Article age
- Article type

More Information:

Introduction the Journal Citation Indicator CNCI

The value of the Journal Citation Indicator is the mean Category Normalized Citation Impact (CNCI) for all articles and reviews published in the most recent three years (e.g., between 2020 and 2022 for the 2023 indicator value).



How is the Journal Citation Indicator calculated

The Journal Citation indicator is available to all journals in the following editions:

- Science Citation Index Expanded
- Social Sciences Citation Index
- Arts & Humanities Citation Index
- Emerging Sources Citation Index

The Journal Citation Indicator, a field-normalized metric, represents the average category-normalized citation impact for papers published in the prior three-year period.

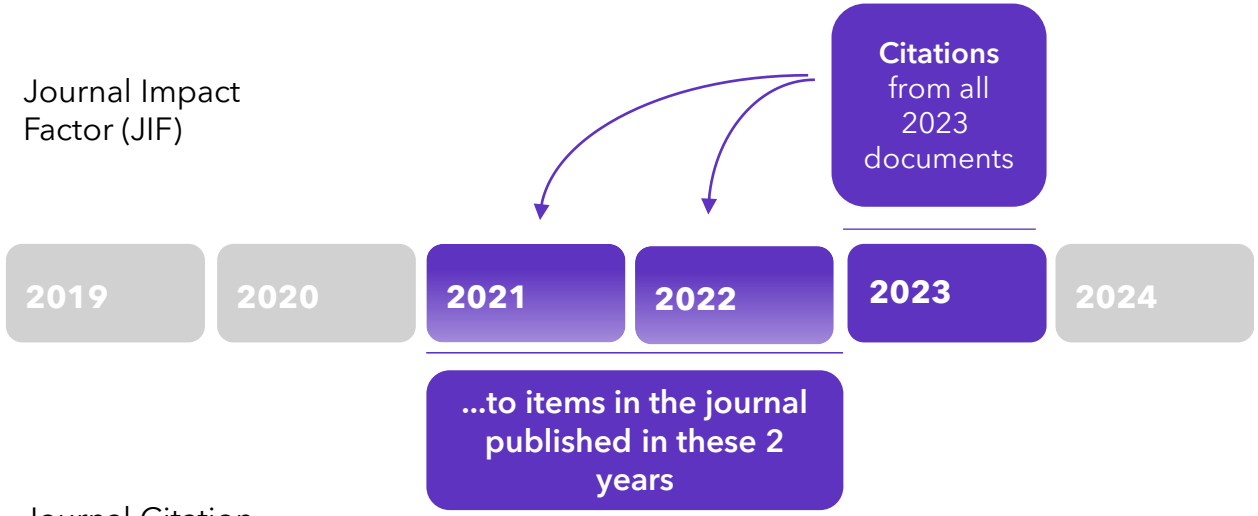
For example, the 2023 Journal Citation Indicator will be calculated for journals that published citable items (i.e., articles or reviews) in 2020, 2021 and 2022, counting all citations they received from any document indexed between 2020 and 2023.

Journal Citation Indicator (JCI)

JIF versus JCI

Complementary journal-level metrics

Journal Impact Factor (JIF)



Journal Citation Indicator (JCI)

Feature	Journal Impact Factor	Journal Citation Indicator
All Web of Science Core Collection journals	Y	Y
Field-normalized citation metric	N	Y
Fixed dataset	Y	Y
Counts citations from the entire Core Collection	Y	Y
Counts citations from the current year only	Y	N
Includes Early Access (EA) content from 2020 onward	Y	Y
Includes unlinked citations	Y	N
Fractional counting	N	N

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Timing of appearance in the Journal Citation Reports

Timing of appearance for the Journal Impact Factor

Journals only appear in the Journal Citation Reports (JCR) when there are three complete and known years of source data; this is always and uniformly the case. This is because the Journal Impact Factor™ (JIF) is defined as citations in the JCR year to items published in the previous two years, divided by the total number of scholarly items published in those previous two years.

New journals, i.e., those starting volume 1, issue 1 in the JCR data year, can be included in the JCR after their first year because their prior two years of source data are known—as zero. Journals that have undergone a title change are another instance of this exception. In both scenarios these journals would not receive a JIF but are still listed in the JCR with other metrics to their credit, like the Immediacy Index, that can be calculated on the source data we have for that journal.

Timing of appearance in the 2023 JCR release

Timing of a journal's first JIF in the JCR depends on the first year of complete content* in the Web of Science Core Collection. The standard start of coverage for all journals is the current year plus two prior years or the launch year. This applies to SCIE, SSCI, AHCI, and ESCI editions.

Scenarios	Accepted	Launch Year	Coverage Start
1	2023	2023	2023
2	2023	2022	2022
3	2023	< or = 2021	2021

* Journals with known gaps in denominator content are listed as forthcoming. Journals where content gaps are closed by August 1st are eligible to appear with JIF metrics in the JCR Reload.

Journal title changes, mergers, splits, and absorptions

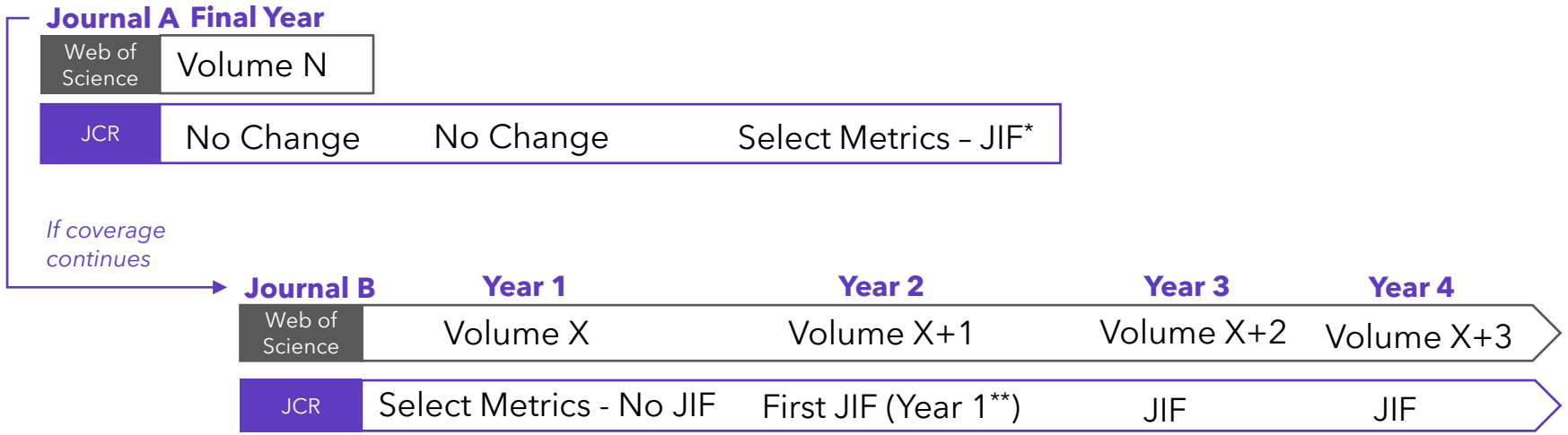
Journal Title Changes

Criteria*

1. Journal ceases publication and a new journal starts with clear relationship between the ceased and the new journal with new ISSN
2. Journal's Full Title changes, significantly altering journal title variants and citation unification

If any of the criteria occur to a covered journal, it will be considered a new journal. However, coverage will continue under its new title until sufficient material is available for a re-evaluation. If coverage continues upon re-evaluation, the journal will appear in the Web of Science and JCR as noted below.

Title Change in the Web of Science & JCR



* A minor journal title change that does not meet the criteria above can continue with the same journal record in the JCR

* Select Metrics –JIF typically higher
** Denominator has Year 1 data only and typically a lower JIF the first year

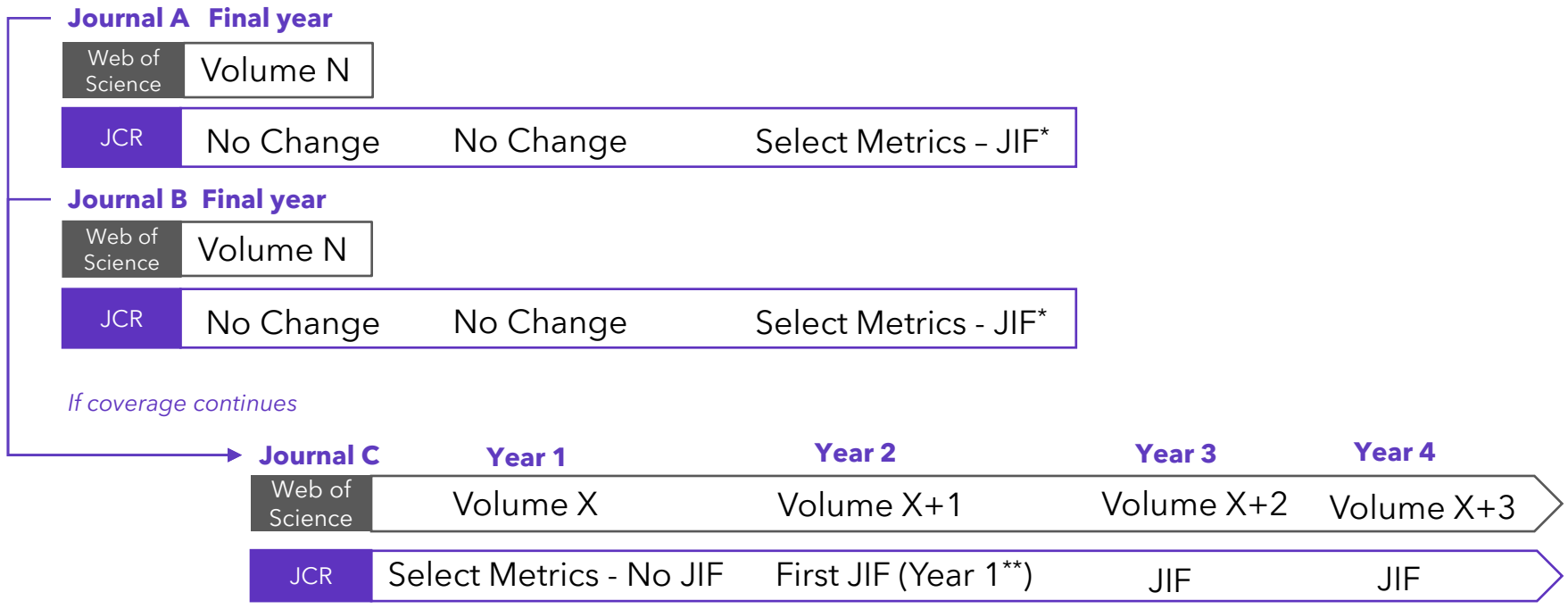
Journal Mergers

Criteria

1. Two or more journals cease publication, and…
2. …a new merged journal starts with clear relationship between the ceased.

If two or more journals cease publication with a new merged journal starting, the merged journal is considered a new journal. However, coverage will continue under its new title until sufficient material is available for a re-evaluation. If coverage continues upon re-evaluation, the journal will appear in the Web of Science and JCR as noted below.

Merged Journals in the Web of Science & JCR



* Select Metrics –JIF typically higher
** Denominator has Year 1 data only and typically a lower JIF the first year

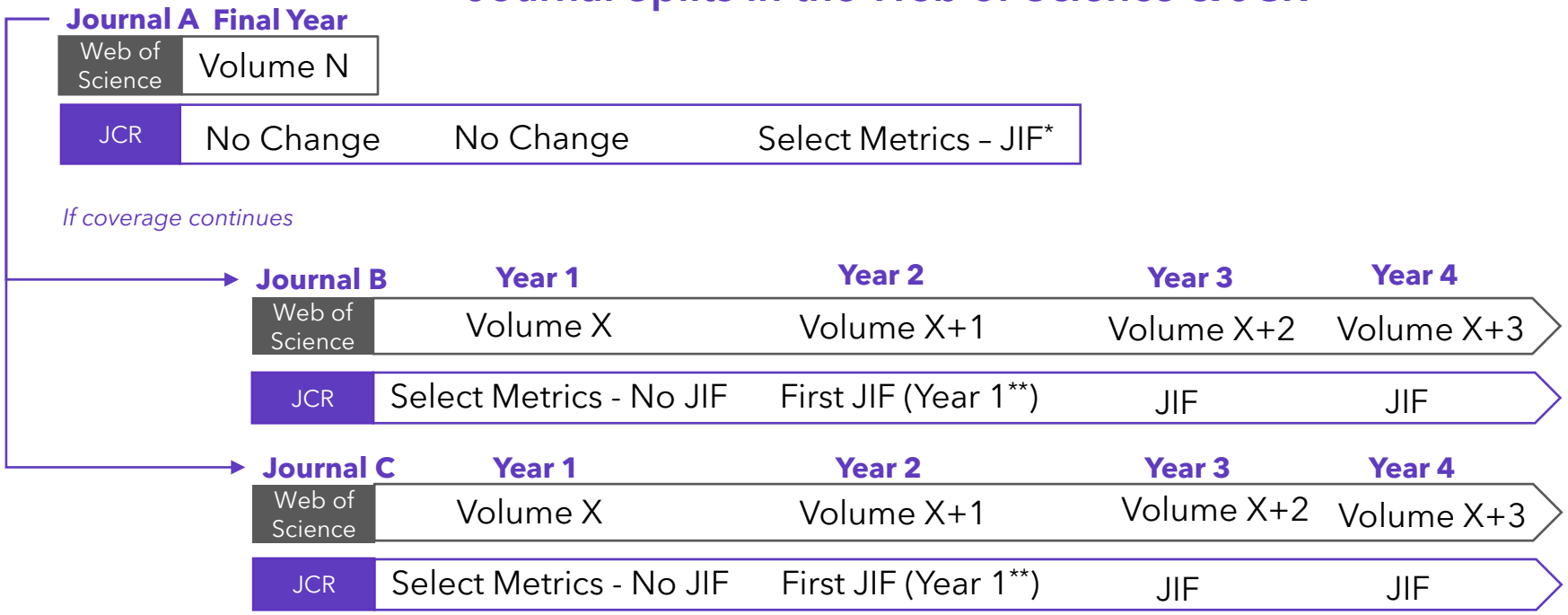
Journal Splits

Criteria

1. Existing journal ceases publication, and…
2. …two or more new journals are created where there's a clear relationship between the ceased and new journals, and…
3. …the new journals have new journal titles and new ISSNs.

A journal split occurs when a journal ceases publication and splits into two or more new journals. However, coverage will continue under its new title until sufficient material is available for a re-evaluation. If coverage continues upon re-evaluation, the journal will appear in the Web of Science and JCR as noted below.

Journal Splits in the Web of Science & JCR



* Select Metrics –JIF typically higher
** Denominator has Year 1 data only and typically a lower JIF the first year

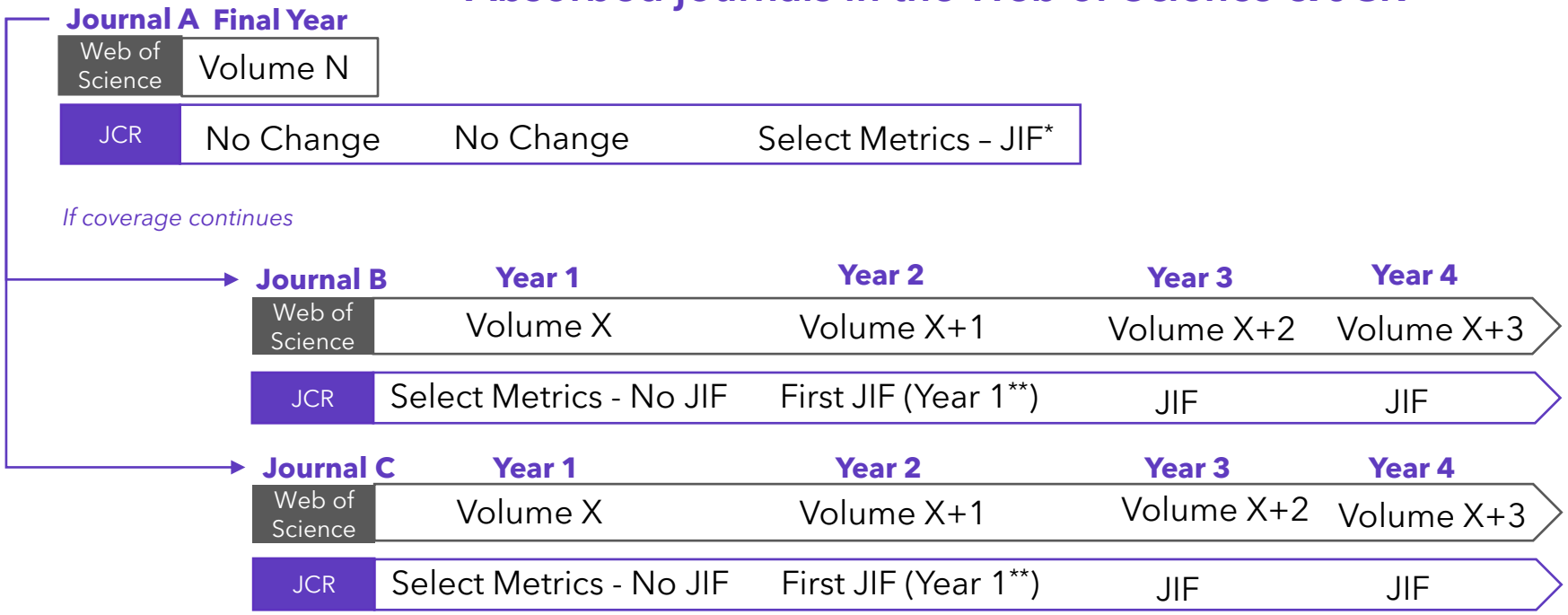
Journal Absorptions

Criteria

1. One ceases publication independently, and…
2. …is absorbed into an existing journal which may or may not be covered in the Web of Science.

A journal absorption is when one title completely subsumes the publication of a distinct separate title. The absorbed journal ceases to publish any new content under its own title. The absorbing title does not change but expands to incorporate the subordinated title. Continued coverage for the Web of Science and JCR depends on the status of the absorbing title.

Absorbed journals in the Web of Science & JCR



* Select Metrics –JIF typically higher
** Denominator has Year 1 data only and typically a lower JIF the first year

Journal Citation Reports versus the Web of Science

Journal Citation Reports vs the Web of Science

Live Collection vs Snapshot

A key difference between the Web of Science and the JCR is that the **Web of Science is continually updated**, while the **JCR data represent a snapshot from a specific time**, namely, the date when the data were extracted for analysis. This difference reflects the essential nature of each product.

- The Web of Science is an evolving record of the dynamic world of scholarly communication with new source content continually added, including citations.
- JCR, on the other hand, is a report on the citation impact of a defined set of journals at a given moment in time.

Therefore, attempts to use the Web of Science data to replicate JCR metrics will lead to results that can vary from those reported in JCR.

Journal Citation Reports vs the Web of Science

Local Change vs Network of Interconnected Data

If one piece of citation-related data changes in a Web of Science article, only that one article and those to which it connects directly are affected.

If one piece of data changes for the JCR, it changes the overall network's structure and morphology, sometimes drastically.

- For example, if the item count changes for one journal, not only does that change the Journal Impact Factor for that journal, but also the median and aggregate Journal Impact Factors for any/all categories in which the journal appears. It will also affect the rank in category for many or even all the journals in a category.

It is for these reasons that the JCR is reloaded only once per year, with all data updates occurring simultaneously.

Early Access Journal Citation Reports Policy

What is Early Access in the Web of Science…

Compatible Early Access material is journal material that is the Version of Record (VOR), made available early, before it is published in an issue. It has a DOI 1 and a distinct early access publication date 2. When it is later published in an issue, it then has volume, issue, pages, and final publication date data 3.

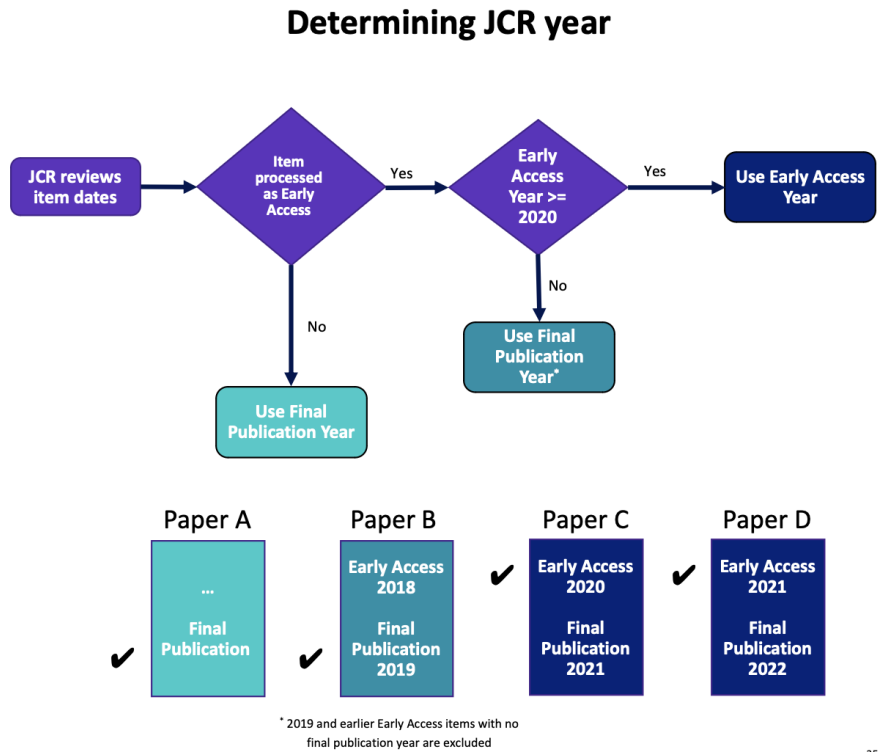
*Accepted manuscripts and corrected proofs are not VOR.

Early Access Policy

Policy effective as of the 2021 JCR release

Most indexed Early Access items have an early access date and a final publication date in the same calendar year. The Early Access JCR policy will not change how these items are counted.

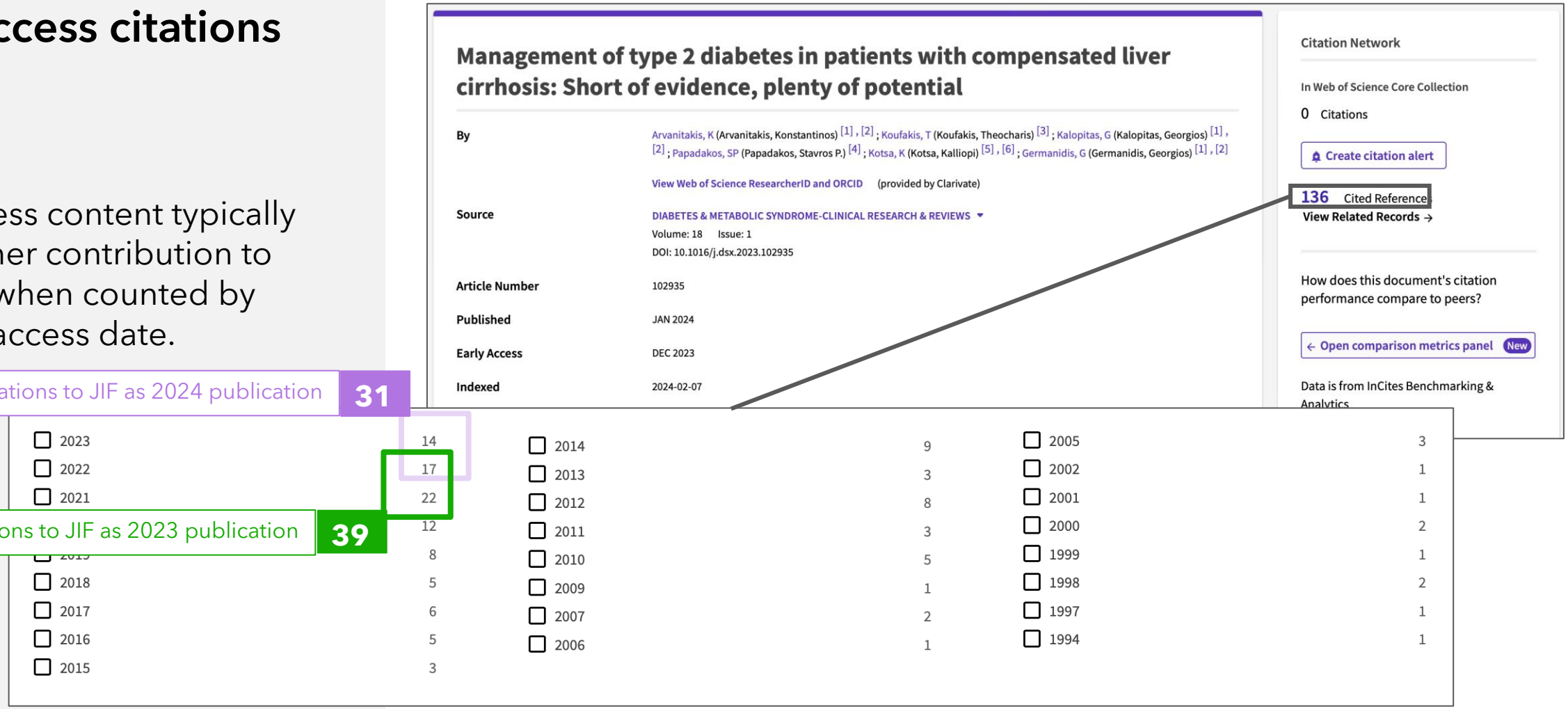
For indexed Early Access items where the early access date is in a different calendar year than the final publication date, we will use only the early access date. This will only affect items indexed with an early access date of 2020 or later.



Early Access citations

Early Access content typically has a higher contribution to JIF years when counted by the early access date.

Early Access 2023 example with 2024 final publication



Other Publication Models

What's the difference between Continuous Article Publication and Build Online for Early Access?

The Early Access indexing model for the Web of Science™ expects to receive a later version with a final publication date, volume, issue and page information from the publisher. In most cases, Continuous Article publications and Build Online publications are published once with the final publication bibliographic data and are incompatible for Early Access indexing. Below are details considered for the Web of Science indexing for these publication models.

- **Continuous Article Publication (CAP):** Content published through a continuous publication model is comparable to Early Access in that it is published as soon as it is the VOR. Unlike Early Access, it is not later updated with final metadata. Continuous publication material with respect to the Journal Impact Factor (JIF) denominator, including the timing of the cited reference contributions for JIF numerators, are not affected by the Early Access policy change.

- **Build Online:** This is a publication model whereby journal content is published in a volume and issue while the issue is building to completion. The current Web of Science indexing policy for this model is to index the issue only upon completion. Since Build Online issues typically complete within a calendar year, their published content with respect to the JIF denominator are not affected by the Early Access policy change. There may be exceptions where Build Online journals publish Early Access Content before assignment to an issue. Those are evaluated on a case-by-case basis.

Suppressions and Editorial Expressions of Concern

What is citation distortion?

We define citation distortion as citation patterns outside of a normal range, compared to journals in the same subject category.

There are three main types of journal-level citation distortion:

Journal Self-Citation

- A journal has an unusually high percentage of journal self-citations, as compared to non-self-citations, within the Journal Impact Factor (JIF) window
- The distortion in category rank is based on analysis of all journals in all categories of the Journal Citation Reports (JCR) ranked both with and without the inclusion of journal self-citations
- The distortion equals the percentage shift in rank with journal self-citations included versus excluded

Citation Stacking

- A donor journal cites a recipient journal at an unusually high rate that is concentrated in the JIF window
- Citation stacking involves two or more journals

Journal Self-Stacking (effective with the 2023 release)

- A journal publishes one or more items in which journal self-citation in the JIF window comprises the majority of the articles' references
- Typically, these items are presented as summaries of recent advances, but function as summaries of the journal's recent content

Our principles

Suppression of Journal Impact Factors

Distortion of citations is harmful to the scholarly record

- It creates an inaccurate reflection of the connections between articles and of their contribution to the scholarly network
- Journal self-citation, citation stacking, and self-stacking have the potential to distort the citation network, the Web of Science, and the JIF
- The JIF provides an important indicator of a journal's contribution to scholarly communication and must not be either inadvertently influenced or purposefully gamed

The fully transparent, article-level data in the JCR allows users to view the content that contributes to a journal's citation impact

Suppression of a journal's JIF does not prevent users from exploring other aspects of a journal's scholarly value

Adapting to respond to a changing environment

We updated our methodology and parameters for journal self-citation in 2020

New, problematic citation networks had surfaced over time

In prior years' analysis, we focused on extreme outliers. At that time, distortion of the citation network by journal self-citation was both rare and extreme

The changes make critical adjustments:

- **Content**: We now include ***out-going (citing)*** as well as ***in-coming (cited)*** activity as part of the analysis
- **Context:** We also now make comparisons within ***each journal's category/categories***, rather than JCR edition, to better account for discipline norms
- **Perspective:** We now look at the ***level of distortion*** of the citation network

We continue to review and refine our methodology, including a new suppression category for journal self-stacking taking effect with the 2023 release.

How do we identify journal self-citation distortion?

Suppression decisions are based on an analysis of 2023 citation data. Suppressed JIFs represent anomalies in citation behavior and exceed category-based norms.

We look at the contribution of journal self-citations to the following data:

- Total citations (TC)
- JIF
- Rank in category
- % of journal self-citations in in-bound (cited) activity, and % of journal self-citations in out-bound (citing) activity

JIFs are suppressed for one year, but journals remain indexed in the Web of Science Core Collection and visible in the JCR.

How do we identify citation stacking distortion?

Suppression decisions are based on analysis of 2023 citation data. Suppressed journals represent anomalies in citation behavior and exceed category-based norms.

- We look at the following data:
- Donor as % of Recipient's total citations
- Donor as % of Recipient's JIF numerator
- Concentration of citations exchanged into JIF numerator
- Identification of individual item(s) in Donor journal with non-scholarly and/or near-exclusive reference to Recipient journal(s)
- New journals, where citations are naturally concentrated to recent years, are not suppressed

JIFs are suppressed for one year, but both Donor and Recipient journals remain indexed in the Web of Science Core Collection and visible in the JCR

How do we identify self-stacking citation distortion?

Suppression decisions are based on analysis of 2023 citation data. Suppressed journals represent anomalies in citation behavior.

- We consider the following data:
- Total citations
- JIF
- Rank in category
- By-item count of citations to the JIF numerator

JIFs are suppressed for one year, but journals remain indexed in the Web of Science Core Collection and visible in the JCR.

What do we do when we identify citation distortion?

Journals that show evidence of citation distortion will not receive a JIF

- We notify publishers of suppressed journals prior to the annual JCR release
- We report the findings of our analysis without accusations of wrongdoing
- We give publishers the opportunity to appeal suppression decisions; appeals must be received by the defined deadline and must be data-driven – we do not consider unsupported assertions
- JIFs are suppressed for one year, but journals remain indexed in the Web of Science Core Collection and visible in the JCR. Suppression of the JIF is distinct from the editorial re-evaluation process and does not equate to an automatic de-listing from the Web of Science Core Collection. However, any journal that is suppressed will be subject to editorial re-evaluation using our quality criteria

Journal Citation Reports Editorial Expressions of Concern

JCR Editorial Expression of Concerns (EEoC) are a signal that we have identified patterns of publication and/or citation that are problematic, but for which we do not have a current suppression analysis in place.

We will continue to use EEoCs, when necessary, to alert users of the need to examine the data contributing to the JIF and JCR metrics.

Forthcoming titles

Forthcoming titles

Titles not available in the Journal Citation Reports data year due to missing content

The missing content deadline for Reload is August 1st.

- Forthcoming titles are Journal Citation Reports (JCR) journals where content has been identified as missing in the final data set where accurate metrics cannot be published in the initial release.
- When available, projected metrics are published in the JCR as a pending correction before the reload update occurs.
- Publishers are notified of titles on the forthcoming list in advance of the June release.
- Missing material not processed by the August 1st cut-off will not appear in the JCR Reload

Journal Citation Reports Data Reload

Journal Citation Reports Data Reload

A one-time data update for the current Journal Citation Reports data year

Corrections deadline for Reload is August 1st.

Eligible corrections for Reload are:

- **JIF Denominator**
  - Reclassifying document types for Journal Impact Factor (JIF) denominator items related to citable vs non-citable counts
  - Adding missing items to the denominator count
  - Removing duplicated items from the denominator count
  - Count adjustment due to publication year correction
- **JIF Numerator**
  - Unifying citations in the original JCR data set for a missing journal title variant, also known as a cited work variant

Corrections out of scope for Reload are as follows:

- **JIF Numerator**
  - Any citation not included in the original JCR data set
  - Citation where the cited work is incorrectly attributed to a different journal

Acceptable Use

Acceptable use

Broad re-publication or free distribution of Journal Citation Reports (JCR) data is not permitted. We do allow distribution of JCR data if it is kept within the subscribing institution. In that case, the JCR should be appropriately acknowledged as the source and the recipients should be made aware of the fact that posting the data to the Web will violate the institution's license agreement.

Use of the JCR data for marketing, public relations, news stories or publication as part of bibliographic or bibliometric research will require permission from Clarivate. We will request to review the information and data that would be included in the publication and will provide guidance on the citation of JCR as a source.

Permission requests can be submitted through this product support form.

Misuse of the Journal Impact Factor

Responsible use of metrics

The JCR was created as a way to use cited references "as characteristics of the journals they linked" (Garfield, 1975). The Journal Impact Factor™ (JIF) was designed to summarize performance, combining citations across all content to create a generalized, journal-level metric showing a specific type of scholarly use in a single year.

Article citation performance as a part of scholarly assessment is not reflected in the JIF. Metrics that address the output and influence of individual researchers can be analyzed through Web of Science or InCites™. Please see this relevant ISI Global Research Report related to this topic, Profiles, not metrics.

Journal coverage and journal reputation

Some websites or journals will falsely claim to be covered in the Web of Science or will reference having an “impact factor”. Misrepresentations of our products and our brands may be an attempt to mislead potential authors into believing that a journal has met our high standards for inclusion in our indexes. Please make use of our publicly available tools to review journals’ claims, like the Web of Science Master Journal List.

Further reading

Visit the Clarivate Academic & Government site to get the latest news about Clarivate, ISI, Web of Science, and JCR.

1. Quaderi, N (2024), Clarivate Academic & Government, 2024 Journal Citation Reports: Changes in Journal Impact Factor category rankings to enhance transparency and inclusivity
2. Edmunds, T (2024), Clarivate Academic & Government, Journal Citation Reports 2024 preview: Unified rankings for more inclusive journal assessment
3. Quaderi, N (2023), Clarivate Academic & Government**,** Supporting integrity of the scholarly record: Our commitment to curation and selectivity in the Web of Science
4. Edmunds, T (2023), Clarivate Academic & Government, A Primer on Ties in the JCR
5. Quaderi, N (2022), Clarivate Academic & Government, Announcing changes to the 2023 Journal Citation Reports
6. Quaderi, N (2022), Clarivate Academic & Government, Mapping the future changes in the Journal Citation Reports
7. Quaderi, N (2022), Clarivate Academic & Government, Journal Citation Reports 2022: COVID-19 research continues to drive increased citation impact
8. Szomszor, M (2021), Clarivate Academic & Government, Introducing the Journal Citation Indicator
9. Hubbard, S (2020), Clarivate Academic & Government, What is Early Access for the Web of Science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