Scientometrics (2026) 131:4987–5011
https://doi.org/10.1007/s11192-026-05698-8

Six flagship scientometric journals from a bibliometric perspective

Gergely Ferenc Lendvai[1] · **Péter Sasvári**[2]

Received: 16 April 2025 / Accepted: 11 June 2026 / Published online: 4 July 2026

Abstract

The present study offers a comprehensive bibliometric assessment of six flagship scientometric journals, namely, Scientometrics, Journal of Informetrics, Quantitative Science Studies, Journal of Information Science, Research Evaluation, and Publications, covering the 2014–2023 period. The examined journals were selected for their leading role in the distribution of scientometrics research as well as their thematic centrality, citation performance, and publisher diversity within the field. Our study aims to compare productivity and citation impact patterns, evaluate citation-based prestige metrics such as the Scimago Journal Rank (SJR) and Field-Weighted Citation Impact (FWCI), and quantify country-level concentration of publication output and citation impact across the geography of contribution. Data were extracted using Scopus and SciVal, yielding metadata on 6,471 publications. We employed bibliometric methods to analyze the journals' performance including statistical analyses of publication metrics, citation analysis as well as the examination of internationalization practices of these journals. Analyses revealed notable disparities in output volume and citation distribution, with evidence of the Matthew effect and citation inequality across journals. Scientometrics is the most productive journal in the set, the Journal of Informetrics and Quantitative Science Studies lead the elite citation indicators, and lower-ranked outlets, such as MDPI's Publications, draw their visibility largely from a small number of high-impact publications. Country-level analysis shows that contribution to these journals is strongly concentrated. Across 110 contributing countries, the top ten account for roughly three-fifths of publications and two-thirds of citations (publication Gini = 0.766; citation Gini = 0.792). Per-journal analysis reveals that the gap between citation and publication concentration varies by more than an order of magnitude across journals, from + 0.005 (JIS) to + 0.148 (QSS), indicating that journals differ markedly in how they convert publication access into citation reward.

Keywords Scientometrics · Bibliometrics · Journal impact · Scientometric journals · Research collaboration

Gergely Ferenc Lendvai
lendvai.gergely.ferenc@uni-nke.hu

Péter Sasvári
sasvari.peter@uni-miskolc.hu

[1] Ludovika University of Public Service, Budapest, Hungary

[2] University of Miskolc & Ludovika University of Public Service, Miskolc, Hungary

Introduction

Over the past century, and far more rapidly across the past few decades, the landscape of academic research has undergone a profound transformation defined by the rising importance of research measurement. It is unarguable that the capacity to quantify scholarly activity sits extremely close to the centre of how universities, funding agencies, governments, and publishers assess performance, allocate resources, and define excellence. The same capacity has also proved indispensable for surfacing scholarly inequalities and the systemic problems of global disparity, visibility, and the uneven representation of different groups in science (Abramo, 2018; Bornmann, 2012; De Rijcke et al., 2015; Hicks, 2011; Hicks et al., 2015; Leydesdorff et al., 1994; Mingers & Leydesdorff, 2015). The field that both studies and supplies this measurement apparatus is scientometrics, and while no uniform definition exists, it can be characterized, following Braun et al. (1987), as the quantitative analysis of the generation, dissemination, and use of scientific information undertaken to better understand research processes. In the decades since the Braun and colleagues' definition, scientometrics has matured into a recognized and respected sub-discipline with its own methodological "canon," dedicated journals which have become embedded in the routine administration of science and into nearly every formal procedure of scientific evaluation worldwide.

Most scientometric scholarship has turned this apparatus outward. By outward, we mean that most scientometric outputs (by the course of nature, given the field's meta-scientific nature) concerned other disciplines and other fields of study. Far less work, however, has trained the same tools on the scientometric literature itself ("inwards")—the journals in which scientometric research is published, cited, and evaluated. Prior comparative work on core scientometric journals (Vinkler, 2019) already shows that the field's citation infrastructure is anchored by a small set of journals—the literature review that follows situates the present study against that precedent. Building on this precedent while narrowing the analytic frame, we propose the concept of "flagship" scientometric journals (FSJ) to designate the small set of core journals that most directly organize the discipline. The six journals selected for analysis—described in detail below—each represent a distinct major publisher and have held a Q1 quartile rank in the Scimago Journal Rank across the majority of their years of Scopus indexation, and each is centrally concerned with scientometrics, informetrics, or research evaluation, so that the resulting set captures journals whose editorial focus lies squarely within the field rather than at its broader disciplinary perimeter. Several otherwise prestigious outlets fall outside the scope of the study on this basis, either because their disciplinary reach extends well beyond scientometrics or because the publisher in question already contributes a more directly scientometric journals to our sample; these include Research Policy (cf. Vinkler, 2019), the Journal of the Association for Information Science and Technology (JASIST) (see: Lyu et al., 2023), Learned Publishing, and Publishing Research Quarterly. We must underline that we do not, in any way, shape, or form imply that the aforementioned journals are not "flagship" journals as they published excellent, often field-defining papers in scientometrics, nor are we proposing that the six journals in our study are the "sole" flagship scientometric journals. Our notion of FSJ is extremely narrow partly because we do not wish to make generalizable statements on what "should" count as a flagship journal either. We acknowledge, therefore, that given this operationalization, careful interpretation is required on the end of the Reader.

The six journals included in our analysis are the following. Similarity scores represent the status of SJR similarity scores at the time of the data extraction:

1. **Scientometrics** (Springer, Akadémiai Kiadó, SJR 2023: 1.079, benchmark journal). Founded in 1978 by one of the key figures in the field, Tibor Braun, *Scientometrics* is the oldest and one of the most prolific journals dedicated exclusively to the scientometric study of science. It covers a wide range of topics, including citation analysis, research evaluation, science policy, and network science. *Scientometrics* is known for its methodological rigor and its role in shaping foundational theories and practices in the field and it remains the central publication platform for both theoretical and empirical contributions to scientometric scholarship.
2. **Journal of informetrics (JOI)** (Elsevier, SJR 2023: 1.355, SJR similarity: 88%). Established in 2007, the *Journal of Informetrics* quickly gained prominence for its high-impact publications and methodological sophistication. Similarly to *Scientometrics*, it mainly focuses on informetric (see: Egghe & Rousseau, 1990; Das, 2013), scientometric, bibliometric, and altmetric studies, however, research has shown key thematic and topical differences between the two (Chang & Nabavi, 2024). The journal has a selective editorial policy, with many of its articles being among the most cited in the field (Mahalakshmi et al., 2017). Despite its relatively short history, it is widely regarded as one of the elite journals in scientometric research.
3. **Journal of information science (JIS)** (SAGE, SJR 2023: 0.583, SJR similarity: 49%). The *Journal of Information Science* has a broader disciplinary scope, encompassing topics such as information retrieval, knowledge organization, and digital information behavior alongside bibliometrics and scientometrics. Though it is not solely dedicated to scientometric topics, it regularly publishes influential studies on research metrics, scholarly communication, and information flow, and also contributes significantly to the bridging of information science and quantitative research evaluation.
4. **Quantitative science studies (QSS)** (MIT, SJR 2023: 1.85, SJR similarity: 89%). *Quantitative Science Studies* is an open-access journal following the editorial board's resignation from *Journal of Informetrics* (QSS, 2019). It is published by MIT Press on behalf of the well-renowned International Society for Scientometrics and Informetrics (ISSI). The journal emphasizes openness, methodological transparency and novelty, large-scale scientometric endeavors, and critical perspectives on quantitative research evaluation. QSS has rapidly established itself as a reputable journal in the field.
5. **Research evaluation (RE)** (Oxford University Press, SJR 2023: 1.008, SJR similarity: 37%). *Research Evaluation* focuses on the evaluation of research and innovation systems, with a strong emphasis on policy-relevant and applied scientometric work. The journal often publishes studies related to national research assessments, institutional benchmarking, and science funding mechanisms but also publishes research policy analyses and more theoretical contributions. It also serves as a key interface between academic research and policymaking in science and higher education.
6. **Publications** (MDPI, SJR 2023: 0.793, SJR similarity: 61%). Though the inclusion of *Publications* may seem like an "odd one out" given the controversial reputation of the publisher (see: Oviedo-García, 2021), we opted to include it as MDPI is rapidly becoming one of the most popular academic publishing houses (Csomós & Farkas, 2022). *Publications* is best described as MDPI's core journal for bibliometric and scientometric research, and its relatively fast review process and inclusive publication model—the well-known and sometimes criticised standards of all MDPI journals (see: Oviedo-

García, 2021)—have made it accessible to a wide range of authors. Given the journal's and the publisher's increasing relevance and citation presence, we deemed its inclusion as an FSJ both representative and analytically useful.

In the present paper, we propose three research questions (RQ) regarding the six selected FSJs:

RQ1 What are the productivity and citation impact patterns of the six flagship scientometric journals between 2014 and 2023?

RQ2 How do citation-based metrics—specifically more elite indicators such as the SJR value and FWCI—differ across FSJs, and what do these differences reveal about their scientific influence?

RQ3 How concentrated is publication output and citation impact across countries in the six flagship scientometric journals, and what does this concentration imply for the geography of influence in the field?

The three questions form stages of a single inquiry into how scholarly visibility is distributed within the field of scientometrics itself. RQ1 maps where publication output concentrates across the six FSJs. RQ2 asks whether citation impact concentrates in the same journals or diverges from volume, reading prestige against productivity. RQ3 extends the same lens outward, tracing how unevenly publications and citations distribute across the countries that contribute to these journals. The paper's contribution is twofold. First, it provides a decade-level profile of the six journals that most directly shape scientometric scholarship, integrating productivity, citation-based prestige, and country-level concentration into a single comparative frame. Second, it turns the analytical apparatus of scientometrics on the discipline's own publishing infrastructure.

Literature review

As implied in the introduction, research on scientometric journals as objects of study themselves—rather than as sources of evidence about other fields—has developed rather unevenly. Early work established the bibliometric identity of the field by mapping its outputs, foundational authors, institutions, and citation networks (De Solla Price, 1963, 1965; Garfield, 2006; Glänzel & Schubert, 2003). A second wave examined productivity and impact within the core outlets: Schubert and Braun (1996) and Vinkler (2009, 2015, 2019) traced where prominent scientometricians publish, how citation profiles evolve across decades, and which journals function as de facto disciplinary flagships. Derek John de Solla Price Medal winner (in 2009), Péter Vinkler's analysis is the most direct precedent for the present study since it established that elite scholars in scientometrics concentrate their publications in a small number of journals and that those that carry disproportionate influence on the field's citation infrastructure. Earlier papers have also analyzed key journals', for instance, *Scientometrics*'s, coword structures and patterns (Courtial, 1994).

A parallel thread examines the broader evaluative logic that scientometric journals both study and participate in. The Leiden Manifesto (Hicks et al., 2015) and the DORA declaration have catalyzed reflection on how quantitative indicators should be used, while De Rijcke et al. (2015) and Mingers and Leydesdorff (2015) review the epistemic and organizational consequences of indicator-driven evaluation. Waltman (2016) provides a widely cited review of citation impact measures that frames the current methodological debate. Contributions in this division are important as they directly or indirectly locate key scientometric journals within a wider ecosystem of research-evaluation infrastructure, where editorial decisions about scope, review, and indicator transparency shape not only what counts as scientometric knowledge but also the norms that the field exports to other disciplines (De Rijcke et al., 2015).

A third strand concerns the geography and collaboration structure of scientometric authorship. Empirical studies have consistently shown that publication output and citation impact in the field cluster in a small set of countries and institutions, and that internationally co-authored papers enjoy a citation advantage over single-country work (Ordóñez-Matamoros et al., 2020; Kohus et al., 2022; Okamura, 2023; He et al., 2021). However, most prior work addresses the geography of scientometrics only obliquely, as a byproduct of broader bibliometric analyses rather than as a primary object. Comparative, multi-metric analyses that explicitly treat several flagship journals side-by-side across productivity, prestige, and country-level concentration remain uncommon. The present study addresses this gap by combining volume, normalized prestige (SJR, FWCI), and country-level concentration (Gini, HHI) within a single ten-year window across six flagship journals, building directly on Vinkler (2019) while broadening the analytic frame.

Materials and methods

The selection of six journals was guided by both conceptual and empirical considerations. Thematically, each journal explicitly focuses on topics central to scientometric inquiry, such as bibliometric analysis, research evaluation, citation analysis, academic collaboration, publication practices, and the role of scientometrics in policy. Though the boundaries between scientometrics, information science, and science and technology studies can be fluid (Liu & He, 2023), these six journals consistently publish research that directly engages with the core questions and methodologies of the scientometric community. Empirically, the selection draws on a combination of Scopus indexing, subject classification, and citation-based indicators to identify journals widely recognized and cited within the scientometric literature. The journals selected are all indexed in Scopus and held a Q1 quartile rank in at least 50% of the years of their Scopus indexation per Scimago Journal Ranking during the examined period. Scientometrics serves as the benchmark journal based on Vinkler (2019), with ScimagoJR's similarity finder used to confirm the selection of the remaining five.

For extraction and analysis, we relied on SciVal, which supports dynamic, article-level bibliometric queries against the Scopus corpus and is widely used for field-normalized bibliometric work (Dresbeck, 2015; Cucari et al., 2022). Five of the six journals contribute full coverage for the 2014–2023-decade, Quantitative Science Studies, first indexed in Scopus in 2020, contributes 2020–2023 and is treated throughout as a four-year window embedded in the wider decade rather than as a ten-year series. The end year was set at

Table 1 Publication counts and annual output by FSJ, 2014–2023

Journal name	Publication count	Total years	Covered years	Average yearly production
Scientometrics	3755	10	2014–2023	375.5
Journal of informetrics	912	10	2014–2023	91.2
Journal of information science	739	10	2014–2023	73.9
Publications	412	10	2014–2023	41.2
Research evaluation	375	10	2014–2023	37.5
Quantitative science studies	278	4	2020–2023	69.5

Table 2 Descriptive statistics of paper-level field-weighted citation impact (FWCI) by FSJ

Journal name	mean	std	min	25%	50%	75%	max
Journal of information science	1.35	1.67	0.0	0.38	0.83	1.71	12.61
Journal of informetrics	1.89	3.06	0.0	0.61	1.21	2.23	49.07
Publications	1.34	5.47	0.0	0.2	0.48	1.09	95.82
Quantitative science studies	3.6	8.17	0.0	0.76	1.54	3.28	82.84
Research evaluation	1.76	2.34	0.0	0.4	1.1	2.0	18.63
Scientometrics	1.91	3.72	0.0	0.58	1.16	2.19	101.37

2023 because it was the last full year available in ScimagoJR at the time of data collection, which took place on 19 February 2025.

In the search query, we used the specific Scopus source IDs to identify the journals. Our search string was the following query: “SOURCE-ID (24222 OR 21100836334 OR 21101062805 OR 12813 OR 5100155103 OR 22894) AND PUBYEAR > 2013 AND PUBYEAR < 2024”. We loaded the results in SciVal for a more detailed and more comprehensive set of metadata. In total, we identified 6471 papers available and eligible for analysis. All document types (5838 research articles and the remaining 633 are other Scopus document types (342 letters, 102 errata, 82 reviews, 75 editorials, 14 notes, 11 conference papers, 6 retracted records, and 1 short survey)) were retained because our aim was to characterise each journal’s full indexed output without document restrictions (i.e., to present the journals "as a whole" with every document contributing to the corpus of their operation); moreover, because the Field-Weighted Citation Impact is normalised by document type and year, the inclusion of non-article types does not bias the field-weighted comparisons. The distribution of papers is summarized in Table 1.

For the investigation of impact (RQ1 and RQ2), we used citation analysis using the metadata from SciVal, the SCImago Journal Rank (SJR) value, and the Field-Weighted Citation Impact (FWCI) metrics. The SJR value corresponds to the scientific influence of a journal by accounting for both the number of citations it receives and the prestige of the citing journals (Falagas et al., 2008; Olmeda-Gómez & De Moya-Anegón, 2015). In general, a higher SJR indicates a greater overall impact and prestige within its academic field (Falagas et al., 2008). The second metric used, the FWCI, measures how well a publication performs in terms of citations compared to

Table 3 Linear regression of annual mean FWCI on publication year, by FSJ (2014–2023)

Journal	N (years)	Slope (per year)	R^2	p-value	Sig
Scientometrics	10	−0.105	0.817	0.0003	***
Journal of informetrics	10	−0.151	0.665	0.0041	**
Quantitative science studies	4	−1.083	0.975	0.0126	*
Research evaluation	10	−0.132	0.424	0.0413	*
Publications	10	+0.099	0.171	0.2350	ns
Journal of information science	10	−0.028	0.126	0.3148	ns

the global average in its field, year, and document type (Zanotto & Carvalho, 2021). Generally speaking, an FWCI of 1.00 means the work is cited exactly as expected, while values above 1.00 indicate higher-than-average citation impact and below 1.00 suggest lower impact (Purkayastha et al., 2019; Zanotto & Carvalho, 2021). More formally, the FWCI of a publication p is computed as, $FWCI(p) = c(p)/\langle c\rangle_x$, where $c(p)$ is the total number of citations received by p and $\langle c\rangle_x$ is the expected citation count for publications matched on subject area (defined by the All Science Journal Classification, ASJC, of the source journal), publication year, and document type. An FWCI of 1.00 corresponds to citation activity at the world-wide benchmark for comparable items; an FWCI of 2.00 indicates twice that benchmark, and an FWCI of 0.50 indicates half. Per-publication FWCI values are obtained directly from SciVal. The journal-level mean FWCI reported later in Table 2 is the arithmetic mean of these paper-level values across each journal's publications in the 2014–2023 window, reported alongside the descriptive statistical results. Table 3 under the subsection corresponding to RQ2 applies the same arithmetic-mean aggregation year by year and regresses the resulting annual means on publication year. The unweighted aggregation is distinct from the set-level FWCI returned by SciVal, which equals $\sum c(p) \big/ \sum \langle c\rangle_x(p)$ over the set and is therefore implicitly weighted by each paper's expected citation count; the unweighted mean is used so that every document contributes equally to the journal-level summary statistic and so that the central tendency reads consistently against the dispersion measures that accompany it.

For RQ3, we examined the country composition of the corpus at the disaggregated country level and quantified the concentration of publication output and citation impact. From the SciVal export for each journal we extracted the fields *Country/Region* (a pipe-separated list of all country affiliations associated with a publication's authors), *Authors*, *Number of Authors*, *Institutions*, *Number of Institutions*, *Number of Countries/Regions*, *Citations*, *Field-Weighted Citation Impact* (FWCI), and *Year*. Country affiliations were credited on a full-counting basis: each distinct country appearing on a publication's affiliation string received one publication credit and one citation credit equal to the paper's total citation count. We opted to do this as full counting preserved the visibility of every contributing country in multi-country collaborations and is the prevailing convention in country-level bibliometric mapping. Moreover, since author shares were mostly non-present, we chose not to fractionalize counts subjectively.

To characterize the geography of influence in the field, we computed three complementary concentration measures over the country-level aggregates. First, top-N country shares report the cumulative share of publications—and, separately, of citations—accounted for by the N most-productive countries. Second, we computed the

Lorenz curve and the corresponding Gini coefficient for both publications and citations across all contributing countries. The Lorenz curve is used as a graphical tool that plots the cumulative share of output against the cumulative share of countries, ranked from smallest to largest contributor; the further the curve bows from the diagonal line of perfect equality, the more concentrated the distribution, a Gini coefficient, a value of 0 represents perfect equality, where every country contributes equally, and a value of 1 represents maximal inequality, where a single country accounts for all output. Third, we report the Herfindahl–Hirschman Index (HHI) (a summary measure of concentration computed as the sum of squared shares; higher values indicate that output is dominated by fewer countries) as a single-number summary of country-level concentration. Because Quantitative Science Studies is indexed in Scopus only from 2020, its per-journal concentration statistics reflect the shorter 2020–2023 window rather than the full decade; this should be borne in mind when comparing its values with those of the five journals that cover the complete 2014–2023 period.

For data visualization we used Python's matplotlib (Hunter, 2007). All visualizations are the edits of the authors. In line with standard statistical notings, we used the following thresholds for p-values: $p < 0.05$ *, statistically significant, $p < 0.01$ **, very statistically significant and $p < 0.001$ ***, extremely statistically significant.

Results

RQ1. Productivity and citation impact

The annual publication output across the six FSJs ranged from 537 (2019, lowest) to 784 (2023, highest), with a moderate upward trend over the decade ($R^2 = 0.60$, $p = 0.008$). The 2019–2020 step change (+40.4%) is partly a scope effect as *QSS* contributed 92 of the + 217 additional papers (~42%) as it was first indexed in Scopus in 2020. Setting *QSS* aside, 2020 still marked the highest pre-2023 year in the series. The 2019 dip itself was

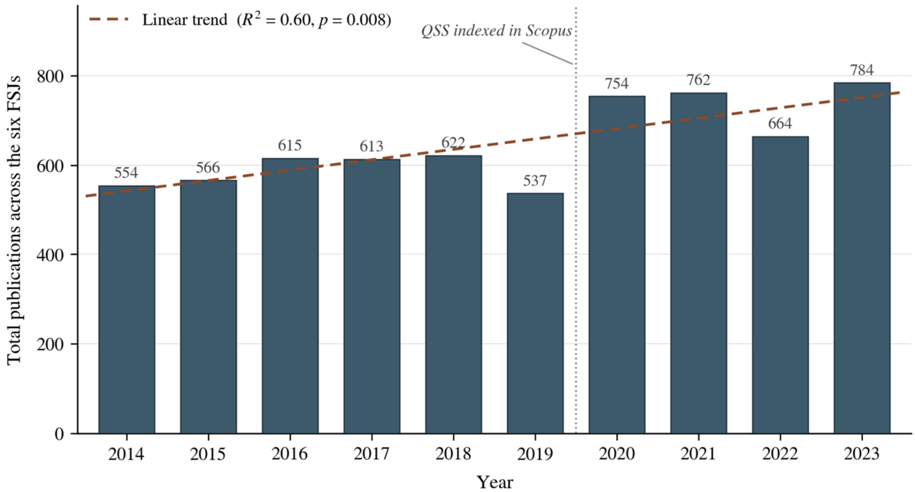

Fig. 1 Yearly output analysis of FSJs between 2014 and 2023

concentrated in *Scientometrics* (−23%), with smaller decreases in *JOI* (−12%) and *RE* (−6%), while *JIS* was flat and *Publications* grew. Even though we cannot surely point to a single documented cause, the wider journal-ecosystem reshuffle linked to the *QSS* founding (QSS, 2019) assumedly plays a role in the heightened number of papers in 2020. A second, shallower dip in 2022 (664) precedes the 2023 peak which may reflect the year-to-year noise expected in series of this size (mean = 647.1, SD = 90.6, median = 618.5; CV ≈ 14%) (Fig. 1).

We then conducted a one-way ANOVA on the annual publication counts across the six journals (Dag et al., 2018). Output volume is not uniform across the FSJ set as journal means differ significantly (F(5, 54) = 155.04, $p < 0.001$). Descriptively, *Scientometrics* leads every year by a wide margin (mean = 375.5, SD = 47.0, median = 372.5) and publishes roughly four times as many publications annually as the next most productive journal. Among the remaining five, *JOI* is clearly the second-largest (mean = 91.2, SD = 9.0), followed by *JIS* (mean = 73.9, SD = 52.6-inflated by a jump from 64 documents in 2022 to 223 in 2023), *QSS* (mean = 69.5 over its four active years, 2020–2023), *Publications* (41.2), and *Research Evaluation* (37.5).

Turning to per-journal temporal trends, only *Publications* exhibits a statistically significant upward trajectory (slope = + 4.95 documents/year, $R^2 = 0.653$, $p = 0.0047$ **), despite having one of the two smallest mean outputs in the set. The remaining five journals yield no significant linear trend. *Scientometrics*, despite its dominance in volume, is essentially flat (slope = −0.4/year, $R^2 \approx 0.001$, $p = 0.95$), while *JOI* ($p = 0.44$), *JIS* ($p = 0.15$), and *Research Evaluation* ($p = 0.18$) are likewise non-significant. *QSS*, observable only from 2020 onward, shows a descriptively negative slope since its inaugural peak year, but with N = 4 the linear trend test is not informative. Notably, the pronounced *JIS* 2022–2023 shift does not translate into a significant ten-year trend; we revisit its likely drivers below. To examine these patterns in finer detail, per-journal annual outputs with linear fits are shown in Fig. 2.

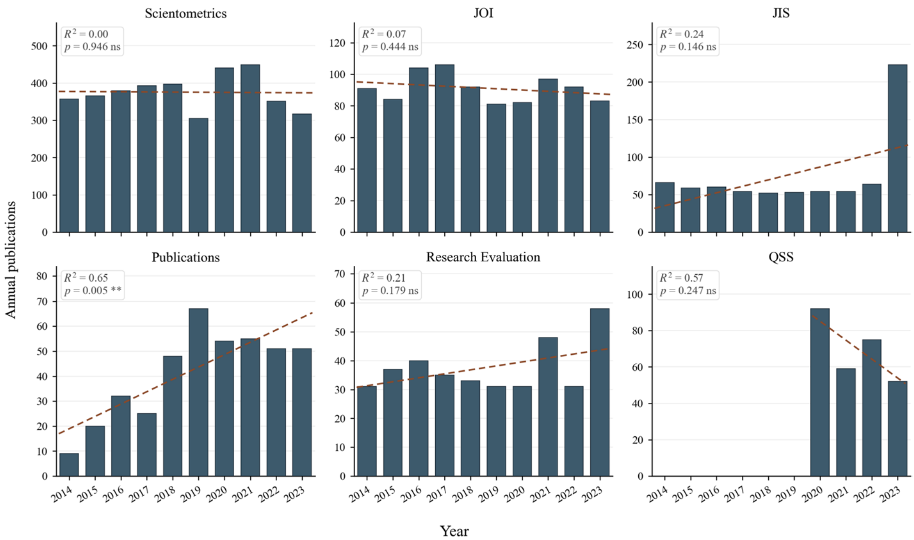

Fig. 2 Per-journal annual publication output with fitted linear trends, 2014–2023

We next conducted a citation analysis to assess the visibility of each journal (Garfield, 1972). Consistent with earlier assessments of its centrality in the field (Schoepflin & Glänzel, 2001; Vinkler, 2009, 2019), *Scientometrics* records the largest citation footprint in absolute terms, with an average of 23.61 citations per article (doc.) (SD = 71.37, median = 12) and a maximum of 2,695 citations. On mean citations per paper, however, *JOI* leads the set (mean = 36.06, SD = 239.68, median = 14), driven overwhelmingly by a single highly-cited outlier: Aria and Cuccurullo's (2017) foundational paper on the bibliometrix R-tool, which had accumulated 6,980 Scopus citations at the time of analysis. *Publications*, while newer and still growing, records the lowest mean citation output of the six (mean = 12.48, SD = 53.28, median = 5). Its highest-cited article is Pranckutė's (2021) review of Web of Science and Scopus as bibliographic infrastructure (1,044 citations). *QSS*, despite being the "youngest" journal in the examination, has already established a meaningful citation footprint (mean = 20.69, SD = 69.46, median = 7, maximum = 827 (most cited: Baas et al., 2020, "Scopus as a curated, high-quality bibliometric data source")). *Research Evaluation* (mean = 20.81, median = 9) and the *Journal of Information Science* (mean = 17.20, median = 8) show steady, moderate levels of scholarly recognition. To examine whether publication volume and citation impact co-vary across the six journals, we computed the per-journal correlation between total output and median citation count. The relationship is descriptively positive (Pearson $r = 0.54$; Spearman $\rho = 0.66$) but is not statistically detectable at this group size (Pearson $p = 0.27$; Spearman $p = 0.16$; $N = 6$), and we therefore interpret it as heuristic rather than inferential. To visualise the joint structure of volume and impact, we applied K-Means clustering (Jain, 2009) after standardising both metrics via z-score normalisation:

$$z(x) = \frac{(x - \mu)}{\sigma}$$

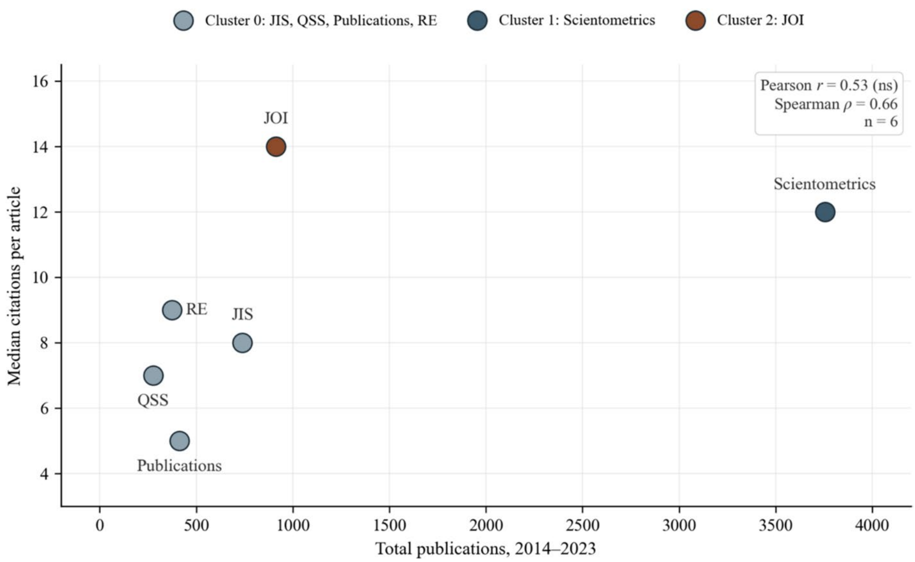

Fig. 3 K-Means clustering of the six FSJs on publication volume and median citations ($k = 3$)

where x is the original value, μ the column mean, and σ the column standard deviation. K-Means minimises the within-cluster sum of squared distances:

$$J = \sum_{i=1}^{k} \sum_{x} \in C_i \| x - \mu_i \|^2$$

where C_i is the i-th cluster and μ_i its centroid. With $k = 3$, the algorithm separates the FSJ set into three structurally distinct groups. *Scientometrics* forms a single-member cluster distinguished by an output volume roughly four times that of any other journal. *JOI* forms another single-member cluster distinguished by the highest median citation per article (doc.); and the remaining four journals (*JIS*, *QSS*, *Publications*, and *Research Evaluation*) cluster together at the lower end of both dimensions. The result, although with the caveat that we only looked at six journals, reinforces the “asymmetry” observed in the preceding analyses—*Scientometrics* dominates volume, *JOI* dominates impact, and the remaining four occupy a comparable bracket of moderate output and more moderate visibility (Fig. 3).

RQ2. Prestige metrics and citation inequality

Turning from volume to prestige indicators, the SJR hierarchy of the six journals shifts visibly across the decade. Between 2014 and 2023, the highest SJR among the examined journals was held first by the *JOI* and, from 2022 onward, by *QSS*. *JOI* began the decade at 1.586 in 2014, peaked at 2.079 in 2019, and fell to 1.355 by 2023, leading the field in every year from 2014 through 2021. *Scientometrics* remained comparatively stable, beginning at 1.080 in 2014, dipping to a decade-low 0.929 in 2021, and recovering to 1.079 in 2023; the fitted linear trend is slightly negative but not statistically detectable (slope = –0.012 yr^{-1}, $R^2 = 0.219$, $p = 0.173$). The *JIS* showed more pronounced fluctuation, starting at 0.823 in 2014, dropping to a minimum of 0.403 in 2016, and ending lower at 0.583 in 2023. *Research Evaluation* rose steadily from 0.726 in 2014 to a peak of 1.792 in 2019, then receded to 1.008 in 2023. *Publications* entered the dataset in 2018 with a modest 0.334 and was the only journal of the six to exhibit a statistically significant upward SJR trajectory, reaching 0.793 by 2023 ($R^2 = 0.824$, $p = 0.0124$). *QSS* appeared even later, with its first data point in 2022 at 1.612 and rising to 1.850 in 2023; in both years its SJR was higher than that of any other examined journal (*QSS* 1.612 vs. *JOI* 1.269 in 2022; *QSS* 1.850 vs. *JOI* 1.355 in 2023), which makes *QSS* currently the “strongest” (per strictly desciptive metrics) scientometric journal on SJR alone, although this inference rests on only two observations—which is a decisive caveat and needs extremely cautious interpretation. In sum, the upper tier is now occupied by *QSS* (2022–2023) and, earlier, by *JOI* (2014–2021), *Scientometrics* provides a consistent mid-range presence, and *JIS* together with *Publications* occupy the lower end of the SJR spectrum, although *Publications* has shown the clearest recent improvement (Fig. 4).

We, then, examined the Field-Weighted Citation Impact (FWCI) scores across the six FSJs. *QSS* stands out with the highest mean FWCI of 3.60. However, this high mean is accompanied by the largest standard deviation (8.17), the highest interquartile range (2.52), and the third highest maximum FWCI of 82.84 which leads us to understand that there are significant outliers that skew the average. Similarly, *Scientometrics* and *JOI* display strong mean FWCI values (1.91 and 1.89, respectively) thus their status as influential journals in the field are empirically reinforced in our results as well (cf. Vinkler, 2019). Nevertheless, both journals also exhibit high variability (std = 3.72 and 3.06),

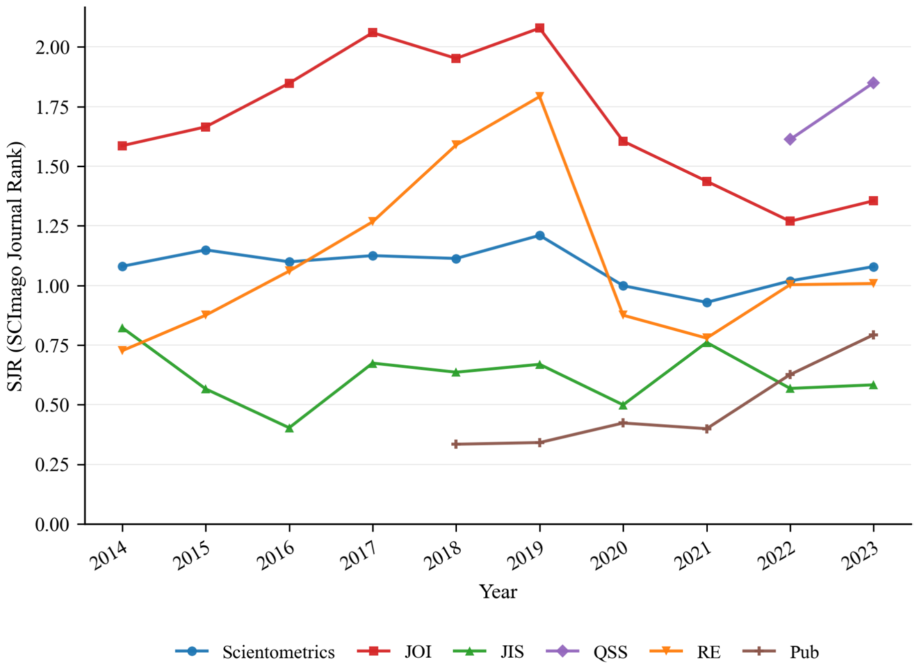

Fig. 4 Annual SJR values of the six FSJs, 2014–2023

with extreme outliers reaching FWCI values over 49.07 and even 101.37 in *Scientometrics*, i.e., a small number of highly impactful papers significantly raise the average (cf. Merton, 1968). In contrast, *Publications* and *JIS* exhibit lower mean FWCI values (1.34 and 1.35), with broader disparities between median and maximum values, highlighting a skewed citation pattern where few highly cited papers (max = 95.82 and 12.61, respectively) inflate otherwise modest citation profiles (medians = 0.48 and 0.83). *Research Evaluation* occupies the "middle ground" of the six examined FSJs with a relatively high mean FWCI of 1.76 and a narrower interquartile range (IQR = 1.6), indicating more consistent citation performance with less skew (Table 2).

We then conducted a linear regression of each journal's annual mean FWCI on publication year (one observation per year, 2014–2023). The direction of each fitted trend is as important as the fit quality, so we report the slope alongside R^2 and p.

QSS shows the strongest temporal relationship ($R^2 = 0.975$, $p = 0.0126$), but the slope is steeply negative (− 1.08 FWCI units per year, 2020–2023). *Scientometrics* exhibits the most confidently fitted trend of the six journals ($R^2 = 0.817$, $p = 0.0003$), and this trend is likewise downward (slope = − 0.105 per year). *JOI* follows the same pattern ($R^2 = 0.665$, $p = 0.0041$; slope = − 0.151 per year). *Research Evaluation* presents a moderate but still statistically significant declining trend ($R^2 = 0.424$, $p = 0.0413$; slope = − 0.132 per year). In the remaining two journals the trend is not statistically distinguishable from zero. the *JIS* shows a marginal decline ($R^2 = 0.126$, $p = 0.3148$), and *Publications* is the only journal with a descriptively positive slope ($R^2 = 0.171$, $p = 0.2350$), though it does not reach conventional significance.

Once again, it is important to accentuate that these results should be read with a caveat. FWCI is field- and year-normalised, but citations for recently published papers have not yet fully accrued, so residual recency bias can generate negative slopes even in the absence of any real decline in quality or influence. The appropriate interpretation of Table 3 is therefore that annual mean FWCI values are highly structured across time (high R^2 for four of the six journals), with the strongest structure appearing in *Scientometrics*, *JOI*, and the short *QSS* series, while *Publications* and the *Journal of Information Science* do not exhibit a statistically detectable year-to-year trend (Table 3).

Before turning to internationalization, we were interested in examining citation inequalities across the six FSJs. We observed a highly right-skewed distribution where most papers receive few citations, and a small number accumulate disproportionately high counts confirming Merton's (1968) Matthew effect on a micro-scale (calculated skewness = 45.83). The distribution with an exceptionally heavy tail and extreme outliers was further confirmed by the kurtosis value of 2749.40. The Gini coefficient (Dorfman, 1979) regarding all journals is 0.65, which denotes a high level of inequality in the citation landscape, well above the 0.4 threshold typically considered indicative of major disparity. Employing microanalysis on the six respective journals, it can be stated that all journals exhibit substantial skewness and kurtosis, confirming long-tailed citation distributions, but the extent varies notably (Table 4).

RQ3. Country-level concentration

International collaboration represents 28.4% of the total publications, but it accounts for the largest share of citations (49,552), the highest citations per publication (26.95), and the highest field-weighted citation impact (FWCI = 2.33). Therefore, internationally co-authored papers are not only more visible but also cited considerably more than expected for comparable publications in the field. The FWCI of internationally co-authored papers (2.33) exceeds that of every other authorship category by 33% or more—the single largest differential observed across any grouping in the corpus—which positions cross-border collaboration as an amplifier of visibility rather than a peripheral contributor to it. The two domestic collaboration categories diverge more than is sometimes assumed: only institutional collaboration is in fact the largest single share of the corpus (30.0%; 1,944 papers) but yields the lowest citations per publication of any collaborative category (22.57) and an FWCI of 1.67, while only national collaboration represents a smaller share (24.0%; 1,555 papers) yet performs slightly better on citations per publication (24.05) with an FWCI of 1.65. The two are thus close on FWCI but distinguishable on raw citation density, with national collaboration delivering modestly higher per-paper citation counts. Single authorship constitutes the smallest share (17.5%; 1,133 papers). Although this category records

Table 4 Citation inequalities across the six FSJs

Journal name	Skewness	Kurtosis	Gini coefficient
Scientometrics	22.58	687.0	0.616
Research evaluation	5.28	39.99	0.643
Quantitative science studies	8.68	84.73	0.736
Journal of information science	5.39	42.06	0.631
Publications	17.77	339.84	0.696
Journal of informetrics	26.94	772.07	0.697

Table 5 Collaboration patterns based on SciVal categories

Category	Share	Publication count	Total citations	Citations per publication	Average field-weighted citation impact
International collaboration	28.42%	1 839	49 552	26.95	2.33
Only national collaboration	24.03%	1 555	37 396	24.05	1.65
Only institutional collaboration	30.04%	1 944	43 870	22.57	1.67
Single authorship (no collaboration)	17.51%	1 133	22 148	19.55	1.75

the lowest total citations (22,148) and the lowest citations per publication (19.55), its mean FWCI of 1.75 exceeds that of both national (1.65) and institutional (1.67) collaboration, thus, once the field and year of publication are accounted for, solo authors in these journals produce an above-expectation set of papers on average.

The results show that while any form of co-authorship is associated with elevated visibility, the scale and diversity of collaboration—and in particular whether it crosses national borders—may be one of the key drives of the largest gains in field-normalised influence (see Cicero & Malgarini, 2020; Kohus et al., 2022). (Table 5).

In terms of representation, we examined the top 15 countries based on scholarly outputs. While China leads in scholarly output (1,292), its FWCI of 1.66 shows that its research, though prolific, is not cited as widely as one might expect given its scale. As a matter of fact, China's FWCI is the third lowest in the top 15 before India (1.56) and Taiwan (1.33). In contrast, smaller European core countries such as the Netherlands, the UK, and Germany

Table 6 Top 15 contributing countries in the FSJ corpus, ranked by scholarly output

Rank	Country/region	Scholarly output	Field-weighted citation impact	Citation count
	China	1292	1.66	26175
	United States	922	1.89	21967
	Spain	584	1.97	15561
	Germany	541	2.3	12501
	United Kingdom	540	2.77	17307
	Italy	369	2.1	15809
	Netherlands	342	3.91	16925
	Belgium	237	2.59	4894
	South Korea	232	1.8	4935
	Canada	222	2.72	8710
	Australia	214	2.02	5796
	Brazil	205	1.82	4674
	India	199	1.56	3463
	Taiwan	178	1.33	3505
	France	160	1.97	2469

produce fewer papers but achieve significantly higher FWCIs (3.91, 2.77, and 2.3, respectively). The Netherlands, in particular, stands out with a relatively modest output (342) yet a strikingly high citation count (16,925), thus it can be interpreted that Dutch research is far more embedded in the dominant circuits of academic, and in our case, scientometric influence. The United States maintains high influence (FWCI = 1.89) despite lower output than China (922). Meanwhile, large producers such as India, Brazil, and Taiwan remain on the margins, with lower citation counts and FWCIs (1.56, 1.82, 1.33), despite significant efforts in knowledge production (Table 6).

The top 15 countries by publication count also unveils a well-noted phenomenon, the dominance of the leading research systems (most notably China, the United States, and the European core of the Netherlands, United Kingdom, and Germany), while mid-volume contributors from regions such as Central and Eastern Europe remain underrepresented despite historical and prominent figures in the field such as Braun, Schubert, or Vinkler (all of them of Hungarian origin).

To quantify the country-level concentration of the field, we computed the Lorenz curve and the Gini coefficient for both the publication count and the total citation count across the 110 contributing countries.

At the corpus level, the Gini coefficient of the publication distribution is 0.766 and the Gini coefficient of the citation distribution is 0.792 (Table 7). A strongly concentrated geography of both contribution and impact was confirmed given that both values are substantially closer to the maximal-inequality endpoint (1.000) than to the equality endpoint (0.000). The Herfindahl–Hirschman Index returns a complementary picture. HHI was 527.7 for publications and 534.2 for citations on the 0–10,000 scale. The citation distribution is consistently more concentrated than the publication distribution, i.e., the citation Gini exceeds the publication Gini by 0.023, the citation HHI is marginally higher, and the top-10 country share rises from 58.72% of publications to 63.74% of citations (Table 7).

While the corpus-wide results establish the overall pattern, we expected that they may conceal substantial variation across journals. Thus, in Table 8, we report the per-journal Gini coefficients and HHI for both publications and citations, together with the gap between the two. The goal of the cross-journal comparative analysis was mainly to reveal, or much rather, test, whether the six journals occupy different positions on two dimensions: (1) how geographically concentrated their authorship is, and (2) how strongly that concentration intensifies when measured by citations rather than publications.

Scientometrics draws on the widest contributor base (95 countries) and registers the highest publication Gini (0.741), a classic "long-tail" pattern where there are a great

Table 7 Country-level concentration of output and citation impact (corpus-wide)

Statistic	Publications	Citations
Number of contributing countries	110	110
Top-1 country share	14.37%	11.69%
Top-3 country share	31.11%	28.19%
Top-5 country share	43.13%	41.28%
Top-10 country share	58.72%	63.74%
Top-20 country share	76.89%	79.89%
Gini coefficient	0.766	0.792
Herfindahl–Hirschman Index (0–10000)	527.7	534.2
Normalized HHI (0–1)	0.044	0.045

Table 8 Per-journal concentration of output and citation impact, 2014–2023

Journal	N (countries)	Gini (pubs)	Gini (cit)	HHI (pubs)	HHI (cit)	Top 10 share (pubs)	Top 10 share (cit)	Top 5 share (pubs)	Top 5 share (cit)	Gini gap	HHI gap	Top 10 gap
Scientometrics	95	0.7409	0.7613	0.0557	0.0534	0.5836	0.6184	0.429	0.4194	0.0204	−0.0024	0.0347
JOI	59	0.7025	0.782	0.0787	0.0985	0.7185	0.8254	0.52	0.634	0.0795	0.0197	0.107
JIS	73	0.6888	0.6933	0.0614	0.0491	0.6401	0.6067	0.449	0.4088	0.0045	−0.0123	−0.0334
QSS	43	0.6389	0.7865	0.0784	0.1296	0.7241	0.8678	0.5542	0.7552	0.1476	0.0511	0.1437
Publications	67	0.5976	0.6542	0.0531	0.0565	0.5858	0.6054	0.4478	0.469	0.0566	0.0034	0.0196
RE	55	0.6408	0.7059	0.0556	0.0721	0.6576	0.7121	0.4444	0.5109	0.0652	0.0165	0.0545

number of contributing countries but most of them contribute very few papers. *Scientometrics*'s citation Gini (0.761) is only marginally higher, which results in a narrow Gini gap (the difference between the citation Gini and the publication Gini; a positive value means that citations are more geographically concentrated than publications) of just + 0.020. In plain terms, countries that manage to publish in *Scientometrics* receive a citation return roughly proportional to their publication share, i.e., the journal rewards breadth of participation rather than concentrating citations among a narrow set of contributors. At the opposite end, *QSS* combines a comparatively accessible publication distribution (Gini = 0.639, the lowest among the elite-tier journals) with sharply concentrated citations (Gini = 0.787), yielding the largest Gini gap in the set (+ 0.148). The top-10 countries account for 72.4% of QSS publications but 86.8% of its citations. To illustrate this with an example, the Netherlands alone contributes approximately 9% of *QSS* publications yet captures 21.9% of its citations. *JOI* displays a similar, though less extreme, pattern. *JOI*'s Gini gap of + 0.080 and a top-10 citation share of 82.5% mean that a select group of countries get "citation rewards" well in excess of their publication presence. An interesting observation is that documents with at least one (1) Italian affiliation in *JOI* average 100.9 citations per paper (under the whole-counting method described above, each co-authoring country receives the paper's full citation count)—a figure driven by a small number of highly cited methodological contributions—compared with 22.7 for publications with at least one Chinese affiliation, the journal's largest contributor by volume. *JIS*, by contrast, shows the smallest Gini gap of any journal (+ 0.005), with publication and citation Lorenz curves that run nearly parallel until a brief crossover point at approximately the 81 st percentile of the country distribution, meaning that among the top-contributing countries the publication curve is actually more concentrated than the citation curve.

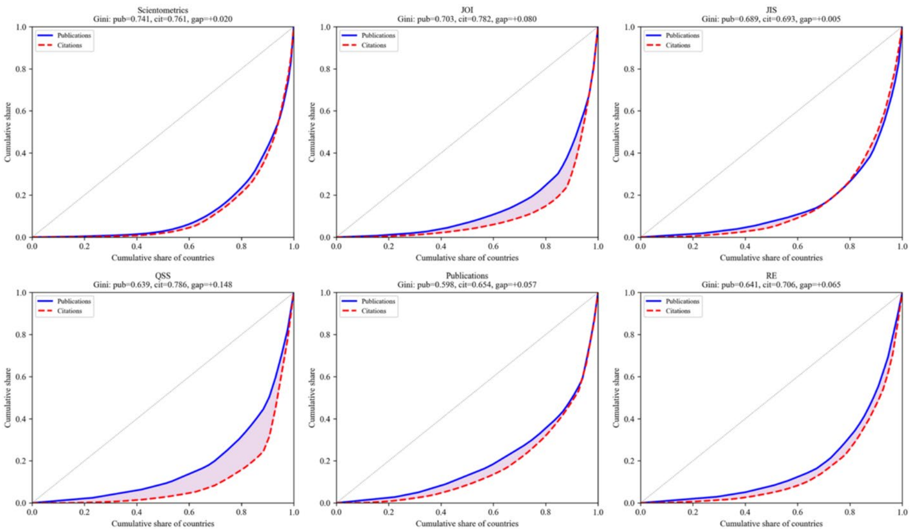

Fig. 5 Publication and citation Lorenz curves by journal. The shaded area represents the divergence between publication and citation inequality. A larger shaded area indicates that citations are more concentrated than publications relative to the distribution of contributing countries

Publications and *Research Evaluation* occupy an intermediate position. Both have publication Gini coefficients below 0.65, reflecting their comparatively even contributor bases. Their Gini gaps (+ 0.057 and + 0.065, respectively) indicate moderate citation concentration above the publication baseline, consistent with the role of a small number of well-cited papers from core European research systems.

Figure 5 plots the publication and citation Lorenz curves for each journal separately. The shaded area between the two curves visualises the extent to which citation inequality exceeds publication inequality. The visual contrast may not seem overly extensive but some key results stand out. For *Scientometrics* and *JIS* the two curves run almost in parallel, whereas for QSS the citation curve bows substantially further from the equality line than the publication curve, producing a large shaded region. JOI displays a pattern intermediate between these two extremes, with the divergence concentrated in the upper portion of the distribution where the top-contributing countries pull away on citations. The curve diagnostics per-journal are outlined under Table 9.

Discussion

The present study aimed to provide a comparative, multi-metric overview of six flagship scientometric journals by exploring their productivity, impact, and inclusivity patterns over a ten-year period spanning 2014–2023. We aimed to offer both descriptive and critical insights into the structural dynamics of “elite” scientometric publishing, with the aim to shed light on where influence accumulates, how it is distributed, and who gets to participate in shaping the field.

A tale of volume and visibility

A decade of output across the six flagship scientometric journals yields an interesting, almost paradoxical issue.

Scientometrics produced the largest share of publications in every year from 2014 through 2023, continuing its long-standing role as the numerical backbone of the field (Vinkler, 2019). It might also not be an overstatement that those seeking to learn more about scientometrics are likely choosing *Scientometrics* for first inquiry given the prominence of the journal. Yet, per our analysis, volume is does not always translate into per-paper visibility. *JOI*, despite publishing roughly one-fifth as many publications, achieved the highest average citations per paper, and *QSS* rapidly joined *JOI* at the top of the impact distribution. The decoupling of output and impact is not unique to scientometrics (Abramo et al., 2024; Wang & Barabási, 2021), but its appearance within the very journals that measure impact across other fields is instructive. What *Scientometrics* offers instead is scale, continuity, and methodological breadth, i.e., attributes that sustain the field as a research community even when the per-article spotlight falls elsewhere—at least in the examined period. For evaluators of individual scientometricians, the variation across the FSJ set in volume and per-paper visibility should make it harder to defend any single journal as a “proxy” for research quality. A career built around contributions to *Scientometrics* may signal sustained engagement with the field’s full methodological breadth and with its archival memory, precisely the work on which the discipline relies for its long-term coherence, while a career anchored in *JOI* or *QSS* may signal alignment with the more thematically concentrated programmes that those journals have cultivated. We invite future research to examine contributions on a more micro-scale level to see how these journals "share" contributors, i.e., how likely it might be that an author publishes in *Scientometrics* and then in *JOI* or else and vice versa, how likely are contribution conversions from FSJ *X* to FSJ *Y*. Moreover, to better understand the different content-related matters of FSJs, we also propose that future agenda shall look into semantic analyses of FSJs to see how these journals differ and compare in terms of focus, scope and published materials.

Stratified prestige and the openness of the "elite"

We found that shifting from raw counts to normalized prestige indicators tightens the hierarchy of FSJs (for more about indicators and their uses see: Vinkler, 2010). SJR and FWCI both place the *JOI* and *QSS* at the top tier, *Scientometrics* in a stable mid-tier, and *Publications* and the *JIS* on the lower end despite occasional outlier peaks. The citation Gini coefficient across the journal set quantifies what the rank order implies, namely, that citations cluster, as in a small number of papers—and a small number of journals—absorb a disproportionate share of scholarly attention; the Matthew effect as Merton (1968) described it, reproduced inside the field that made such patterns measurable (Albarrán & Ruiz-Castillo, 2010; Ruiz-Castillo, 2011; Wang & Barabási, 2021). The implication, however, is not that the concentration is illegitimate—of course, papers accrue citations for many substantive reasons including, most importantly, quality—but the concentration does challenge the field's tendency to treat citation skew as a "feature" of other disciplines. In more interpretative terms, the citation data are consistent with a stratified impact structure in which the most prestigious journals may benefit from the self-reinforcing visibility that high citation rates generate, although the present design cannot isolate feedback effects from differences in the quality or novelty of submissions each journal attracts.

What is even more important is that the prestige hierarchy that emerges from the corpus is not stationary. Let us take *QSS*'s rapid arrival at the top tier within four years of Scopus indexation. Such rise shows that the FSJ set is contestable and inclusive, and that an open-access, peer-reviewed journal with a focused mandate can have a significant reshaping effect in the field's impact distribution on a relatively short timescale. Naturally, we shall also take into account that *QSS*'s rise is only partially due to the contributions and much homage shall be paid to the editors who made this rise possible based on years and decades of publishing experience. The pattern is at least consistent with the view that the FSJ prestige hierarchy is contestable rather than closed, a new entrant with a focused mandate and an open-access model reached the top of the SJR ranking within four years of indexation, though the extent to which this trajectory generalises beyond the specific circumstances of *QSS*'s founding remains an open question.

Geographic concentration and its cross-journal variation

The geographic dimension of the corpus reinforces the pattern of concentration that the impact analysis has already established. The breadth of country participation is wide, but both publication output and citation impact are heavily skewed toward a small group of well-resourced research systems. To add a bit more “meat to the bone”, the six journals differ in how they convert publication access into citation reward.

Several mechanisms could underlie the observed variation in geographic concentration. Even in the case of only six—though exceedingly global and well-renowned—journals, differences in global research capacity and funding differences (see more broadly: Wagner & Whetsell, 2024), journal-level selection processes, editorial-board composition(s) (see: Goyanes & Demeter, 2020; Goyanes et al., 2022), APC schedules, language norms, and the self-reinforcing citation circuits that prestige generates. The present study’s design, which relies on country-level publication and citation aggregates, cannot adjudicate among these explanations or determine their relative weight. We therefore interpret the cross-journal variation descriptively as it documents that the relationship between publication access and citation reward is not uniform across the FSJ set, without attributing the variation to any single causal factor. Future research that combines the bibliometric evidence presented here with editorial-process data (review invitation networks, rejection rates by country, corresponding-author demographics) would be needed to determine how much of the observed concentration reflects supply-side capacity differences and how much reflects journal-level selection.

Integrating the three dimensions

Looking at three legs of our analysis, our findings reveal a pattern that no single analysis detects on its own. RQ1 shows that publication output concentrates in a small number of journals even at such a small scale—*Scientometrics* alone accounts for more than half the corpus. RQ2 shows that citation-based prestige does not track volume and that the most prolific journal is not the most cited per paper, and a handful of articles in lower-volume journals absorb a disproportionate share of the field’s scholarly attention. RQ3 extends the same logic to the geography of the field and uncovers a further layer outlining that journals differ not only in how much they publish and how often they are cited, but in how evenly they distribute citation rewards across contributing countries. The finding that QSS and JOI combine accessible publication distributions with highly concentrated citation distributions, while Scientometrics and JIS distribute citations more proportionally, would not be visible from either a journal-level or a country-level analysis alone.

As a conclusion, we propose that scientometrics, as a field, is shaped by what it measures in others and also by how its own journals structure the relationship between access and reward. The six journals are not uniform "substitutes", in our view. They are flagship journals, indeed, but essentially they differ in scope, editorial model, impact profile, and geographic footprint . Thus, we read this study not as a verdict on any individual journal but as a descriptive baseline that the scientometric community—well placed to interrogate its own bibliometric signatures with the same rigour it brings to other fields—can perhaps build upon.

Limitations

Several limitations of the present study warrant explicit acknowledgement. First, the selection of six journals, though carefully justified based on thematic centrality, publisher diversity, and impact, inevitably excludes other influential outlets that contribute to the broader field of scientometrics, such as interdisciplinary journals or regionally significant journals not indexed in Scopus or ranked in Q1. Consequently, the scope may underrepresent impactful contributions, not solely from other instrumental outlets like *JASIST* or *Learned Publishing* but also from non-English-language outlets and regionally specialized journals not indexed in Scopus. Second, our reliance on Scopus and SciVal as primary data sources introduces inherent biases embedded in commercial bibliometric databases (Mongeon & Paul-Hus, 2015). Although classic problems with Scopus (for example, coverage asymmetries that favor Western, English-language, and STEM-heavy journals, which skews aggregate visibility toward well-resourced research systems (Tennant, 2020)) were not present given that we worked with six English-language journals accurately indexed in the database and the use of FWCI also attempted to mitigate field and publication year biases, they do not fully compensate for potential structural exclusions or the complex social dynamics of scholarly influence. Third, the use of country affiliation captures each paper's author-level country tags as reported in SciVal but cannot distinguish the contribution weight of primary versus co-authors, may obscure intra-national inequalities, and does not reflect the hybrid positions of diasporic or migrant scholars who navigate multiple institutional contexts (see for the latter: Pustelnikovaite, 2020). Institutional-level and corresponding-author analyses would refine the concentration picture but were outside the scope of this study. Fourth, the study does not account for discipline-specific issues within the broader scientometric community. Some journals, such as JIS or Research Evaluation, publish work at the intersection of policy studies, information science, and sociology of science; fields that may not operate under the same citation norms or collaborative patterns as core scientometrics. As such, comparing them strictly on output and impact metrics may inadvertently flatten meaningful distinctions in scope and audience. Fifth, and most importantly for the geographic analysis, the country-level design documents patterns of concentration but cannot distinguish the mechanisms that produce them. As mentioned briefly above, the observed distributions could arise from unequal global research capacity (countries with larger, better-funded research systems simply produce and cite more), from journal-level selection processes (editorial and review practices that differentially favour certain national traditions), or from an interaction of both. The Gini gap reported for each journal is a descriptive statistic that measures how much citation concentration exceeds publication concentration. However, it does not, per se, identify whether the gap reflects quality differences, network effects, language barriers, or editorial gatekeeping. Disentangling these explanations would require data on editorial processes—submission flows, desk-rejection rates by country, reviewer assignment patterns—that fall outside the scope of the present study. Readers should therefore interpret the cross-journal variation in concentration as an empirical observation that invites further investigation, not as evidence for or against any particular causal account.

Appendix

See Table 9

Table 9 Curve diagnostics related to our findings presented in Fig. 5

Journal	N countries	Countries with 0 citations	Bottom 50% pub share	Area between curves	Mean Lorenz gap (cit-pub)
Scientometrics	95	1	0.0275	0.0122	−0.0102
JOI	59	0	0.0662	0.0398	−0.0397
JIS	73	0	0.0722	0.0168	−0.0022
QSS	43	3	0.0862	0.0738	−0.0736
Publications	67	2	0.1269	0.0284	−0.0283
RE	55	0	0.0783	0.0326	−0.0325

Acknowledgements We would like to thank the reviewers of this study for their valuable inputs and suggestions.

Funding Open access funding provided by Ludovika University of Public Service. Project TKP2021-NKTA-51 has been implemented with the support provided by the Ministry of Culture and Innovation of Hungary from the National Research, Development and Innovation Fund, financed under the TKP2021-NKTA funding scheme.

Declarations

Competing Interests The authors declare no conflict of interest.

References

Abramo, G. (2018). Revisiting the scientometric conceptualization of impact and its measurement. *Journal of Informetrics, 12*(3), 590–597. https://doi.org/10.1016/j.joi.2018.05.001

Abramo, G., D'Angelo, C., & Di Costa, F. (2024). The moderating role of personal characteristics of authors in the publications' quality for quantity trade-off. *Journal of Informetrics, 18*(1), Article 101495. https://doi.org/10.1016/j.joi.2024.101495

Albarrán, P., & Ruiz-Castillo, J. (2010). References made and citations received by scientific articles. *Journal of the American Society for Information Science and Technology, 62*(1), 40–49. https://doi.org/10.1002/asi.21448

Aria, M., & Cuccurullo, C. (2017). bibliometrix : An R-tool for comprehensive science mapping analysis. *Journal of Informetrics, 11*(4), 959–975. https://doi.org/10.1016/j.joi.2017.08.007

Baas, J., Schotten, M., Plume, A., Côté, G., & Karimi, R. (2020). Scopus as a curated, high-quality bibliometric data source for academic research in quantitative science studies. *Quantitative Science Studies, 1*(1), 377–386. https://doi.org/10.1162/qss_a_00019

Bornmann, L. (2012). What is societal impact of research and how can it be assessed? A literature survey. *Journal of the American Society for Information Science and Technology, 64*(2), 217–233. https://doi.org/10.1002/asi.22803

Braun, T., Bujdosó, E., & Schubert, A. (1987). *Lit of analt chemistry a scientometric evaluation*. Springer.

Chang, Y., & Nabavi, M. (2024). Comparison of disciplines, topics, and methods in studies in journal of informetrics and scientometrics from 2016 to 2020. *Scientometrics, 129*(3), 1415–1439. https://doi.org/10.1007/s11192-024-04947-y

Cicero, T., & Malgarini, M. (2020). 5.4 research collaboration and bibliometric performance. *De Gruyter eBooks*. https://doi.org/10.1515/9783110646610-032

Courtial, J. P. (1994). A coword analysis of scientometrics. *Scientometrics, 31*(3), 251–260. https://doi.org/10.1007/bf02016875

Csomós, G., & Farkas, J. Z. (2022). Understanding the increasing market share of the academic publisher "multidisciplinary digital publishing institute" in the publication output of central and eastern European countries: A case study of Hungary. *Scientometrics, 128*(1), 803–824. https://doi.org/10.1007/s11192-022-04586-1

Cucari, N., Tutore, I., Montera, R., & Profita, S. (2022). A bibliometric performance analysis of publication productivity in the corporate social responsibility field: Outcomes of SciVal analytics. *Corporate Social Responsibility and Environmental Management*, *30*(1), 1-16. https://doi.org/10.1002/csr.2346

Dag, O., Dolgun, A., & NaimeMeric, K. (2018). Onewaytests: An R package for one-way tests in independent groups designs. *R Journal, 10*(1), 175. https://doi.org/10.32614/rj-2018-022

Das, P. K. (2013). Journal of informetrics: A bibliometric profile. *DESIDOC Journal of Library & Information Technology, 33*(3), 243–252. https://doi.org/10.14429/djlit.33.3.4610

De Rijcke, S., Wouters, P. F., Rushforth, A. D., Franssen, T. P., & Hammarfelt, B. (2015). Evaluation practices and effects of indicator use—A literature review. *Research Evaluation, 25*(2), 161–169. https://doi.org/10.1093/reseval/rvv038

De Solla Price, D. J. (1963). Little science, big science. *Columbia University Press eBooks*. https://doi.org/10.7312/pric91844

De Solla Price, D. J. (1965). Networks of scientific papers. *Science, 149*(3683), 510–515. https://doi.org/10.1126/science.149.3683.510

Dorfman, R. (1979). A formula for the Gini coefficient. *The Review of Economics and Statistics, 61*(1), 146. https://doi.org/10.2307/1924845

Dresbeck, R. (2015). SciVal. *Journal of the Medical Library Association JMLA, 103*(3), 164–166. https://doi.org/10.3163/1536-5050.103.3.018

Egghe, L., & Rousseau, R. (1990). *Introduction to informetrics. Quantitative methods in library, documentation and information science*. Elsevier Science Publishers. Amsterdam.

Falagas, M. E., Kouranos, V. D., Arencibia-Jorge, R., & Karageorgopoulos, D. E. (2008). Comparison of SCImago journal rank indicator with journal impact factor. *The FASEB Journal, 22*(8), 2623–2628. https://doi.org/10.1096/fj.08-107938

Garfield, E. (1972). Citation analysis as a tool in journal evaluation. *Science, 178*(4060), 471–479. https://doi.org/10.1126/science.178.4060.471

Garfield, E. (2006). The history and meaning of the journal impact factor. *JAMA, 295*(1), Article 90. https://doi.org/10.1001/jama.295.1.90

Glänzel, W., & Schubert, A. (2003). A new classification scheme of science fields and subfields designed for scientometric evaluation purposes. *Scientometrics*, *56*(3), 357-367. https://doi.org/10.1023/a:1022378804087

Goyanes, M., & Demeter, M. (2020). How the geographic diversity of editorial boards affects what is published in JCR-ranked communication journals. *Journalism & Mass Communication Quarterly, 97*(4), 1123–1148. https://doi.org/10.1177/1077699020904169

Goyanes, M., De-Marcos, L., Demeter, M., Toth, T., & Jordá, B. (2022). Editorial board interlocking across the social sciences: Modelling the geographic, gender, and institutional representation within and between six academic fields. *PLoS One, 17*(9), Article e0273552. https://doi.org/10.1371/journal.pone.0273552

He, C., Wu, J., & Zhang, Q. (2021). Characterizing research leadership on geographically weighted collaboration network. *Scientometrics, 126*(5), 4005–4037. https://doi.org/10.1007/s11192-021-03943-w

Hicks, D. (2011). Performance-based university research funding systems. *Research Policy, 41*(2), 251–261. https://doi.org/10.1016/j.respol.2011.09.007

Hicks, D., Wouters, P., Waltman, L., De Rijcke, S., & Rafols, I. (2015). Bibliometrics: The Leiden Manifesto for research metrics. *Nature, 520*(7548), 429–431. https://doi.org/10.1038/520429a

Hunter, J. D. (2007). MatPlotLib: A 2D graphics environment. *Computing in Science & Engineering, 9*(3), 90–95. https://doi.org/10.1109/mcse.2007.55

Jain, A. K. (2009). Data clustering: 50 years beyond K-means. *Pattern Recognition Letters, 31*(8), 651–666. https://doi.org/10.1016/j.patrec.2009.09.011

Kohus, Z., Demeter, M., Szigeti, G. P., Kun, L., Lukács, E., & Czakó, K. (2022). The influence of international collaboration on the scientific impact in V4 countries. *Publications, 10*(4), 35. https://doi.org/10.3390/publications10040035

Leydesdorff, L., Cozzens, S., & Van Den Besselaar, P. (1994). Tracking areas of strategic importance using scientometric journal mappings. *Research Policy, 23*(2), 217–229. https://doi.org/10.1016/0048-7333(94)90054-x

Liu, Y., & He, H. (2023). Scientometrics of scientometrics based on web of science core collection data between 1992 and 2020. *Information, 14*(12), 637. https://doi.org/10.3390/info14120637

Lyu, P., Liu, X., & Yao, T. (2023). A bibliometric analysis of literature on bibliometrics in recent half-century. *Journal of Information Science, 52*(2), 324–344. https://doi.org/10.1177/01655515231191233

Mahalakshmi, G. S., Selvi, G. M., & Sendhilkumar, S. (2017). A bibliometric analysis of journal of informetrics—A decade study. *Second International Conference on Recent Trends and Challenges in Computational Models (ICRTCCM), 2017*, 222–227. https://doi.org/10.1109/icrtccm.2017.22

Merton, R. K. (1968). The Matthew effect in science. *Science, 159*(3810), 56–63. https://doi.org/10.1126/science.159.3810.56

Mingers, J., & Leydesdorff, L. (2015). A review of theory and practice in scientometrics. *European Journal of Operational Research, 246*(1), 1–19. https://doi.org/10.1016/j.ejor.2015.04.002

Mongeon, P., & Paul-Hus, A. (2015). The journal coverage of web of science and Scopus: A comparative analysis. *Scientometrics, 106*(1), 213–228. https://doi.org/10.1007/s11192-015-1765-5

Okamura, K. (2023). A half-century of global collaboration in science and the "shrinking world." *Quantitative Science Studies, 4*(4), 938–959. https://doi.org/10.1162/qss_a_00268

Olmeda-Gómez, C., & De Moya-Anegón, F. (2015). Publishing trends in library and information sciences across European countries and institutions. *The Journal of Academic Librarianship, 42*(1), 27–37. https://doi.org/10.1016/j.acalib.2015.10.005

Ordóñez‐Matamoros, G., Vernot‐López, M., Moreno‐Mattar, O., & Orozco, L. A. (2020). Exploring the effects of North–South and South–South research collaboration in emerging economies, the Colombian case. *Review of policy research*, *37*(2), 174-200. https://doi.org/10.1111/ropr.12378

Oviedo-García, M. Á. (2021). Journal citation reports and the definition of a predatory journal: The case of the multidisciplinary digital publishing institute (MDPI). *Research Evaluation, 30*(3), 405–419a. https://doi.org/10.1093/reseval/rvab020

Pranckutė, R. (2021). Web of science (WOS) and Scopus: The titans of bibliographic information in today's academic world. *Publications, 9*(1), Article 12. https://doi.org/10.3390/publications9010012

Purkayastha, A., Palmaro, E., Falk-Krzesinski, H. J., & Baas, J. (2019). Comparison of two article-level, field-independent citation metrics: Field-weighted citation impact (FWCI) and relative citation ratio (RCR). *Journal of Informetrics, 13*(2), 635–642. https://doi.org/10.1016/j.joi.2019.03.012

Pustelnikovaite, T. (2020). Locked out, locked in and stuck: Exploring migrant academics' experiences of moving to the UK. *Higher Education, 82*(4), 783–797. https://doi.org/10.1007/s10734-020-00640-0

QSS (2019). New open-access journal Quantitative Science Studies. Published by ISSI on 14 January 2019.https://www.issi-society.org/blog/posts/2019/january/the-international-society-for-scientometrics-and-informetrics ends-support-for-journal-of-informetrics-launches-new-open-access-journal-quantitative-science-studies/

Ruiz-Castillo, J. (2011). The evaluation of citation distributions. *SERIEs, 3*(1–2), 291–310. https://doi.org/10.1007/s13209-011-0074-3

Schoepflin, U., & Glanzel, W. (2001). Two decades of "scientometrics". An interdisciplinary field represented by its leading journal. *Scientometrics, 50*(2), 301–312. https://doi.org/10.1023/a:1010577824449

Schubert, A., & Braun, T. (1996). Cross-field normalization of scientometric indicators. *Scientometrics, 36*(3), 311–324. https://doi.org/10.1007/bf02129597

Tennant, J. (2020). Web of science and Scopus are not global databases of knowledge. *European Science Editing*. https://doi.org/10.3897/ese.2020.e51987

Vinkler, P. (2009). The π-index: A new indicator for assessing scientific impact. *Journal of Information Science, 35*(5), 602–612. https://doi.org/10.1177/0165551509103601

Vinkler, P. (2010). The evaluation of research by scientometric indicators. *Chandos Publishing eBooks*. https://doi.org/10.1533/9781780630250

Vinkler, P. (2015). Core indicators and professional recognition of scientometricians. *Journal of the Association for Information Science and Technology, 68*(1), 234–242. https://doi.org/10.1002/asi.23589

Vinkler, P. (2019). Core journals and elite subsets in scientometrics. *Scientometrics, 121*(1), 241–259. https://doi.org/10.1007/s11192-019-03199-5

Wagner, C. S., & Whetsell, T. A. (2024). Developing an index of national research capacity. *Quantitative Science Studies, 5*(4), 954–974. https://doi.org/10.1162/qss_a_00325

Waltman, L. (2016). A review of the literature on citation impact indicators. *Journal of informetrics*, *10*(2), 365-391. https://doi.org/10.1016/j.joi.2016.02.007

Wang, D., & Barabási, A. (2021). *The science of science*. Cambridge University Press.

Zanotto, E. D., & Carvalho, V. (2021). Article age- and field-normalized tools to evaluate scientific impact and momentum. *Scientometrics, 126*(4), 2865–2883. https://doi.org/10.1007/s11192-021-03877-3