

Article

Scholarly Journals' Publication Frequency and Number of Articles in 2018–2019: A Study of SCI, SSCI, CSCD, and CSSCI Journals

Xiaotian Chen 

Cullom-Davis Library, Bradley University, Peoria, IL 61625, USA; chen@bradley.edu

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Abstract: This study used all-journal data and systematic random sampling data to primarily determine the average number of issues per year and the average number of articles per issue among the Science Citation Index (SCI), Social Sciences Citation Index (SSCI), Chinese Science Citation Database (CSCD) (China), and Chinese Social Sciences Citation Index (CSSCI) (China) journals. The random sampling data were based on 5% SCI and SSCI samples and 10% CSCD and CSSCI samples. The objectives were to have a 2018–2019 record of the journal publication frequency detailing the number of articles per issue and the number of issues per year for the journals on the lists, as well as to compare Chinese journals' data with those of international journals, in the perspective of scholarly publishing transformations in the world as well as in China during the past two decades. The study found that the average number of issues per year for SCI, SSCI, CSCD, and CSSCI journals was 10.95, 5.18, 9.17, and 7.87, respectively, and that CSCD/CSSCI journals publish more articles than SCI/SSCI, with CSSCI journals publishing significantly more articles per year than SSCI journals. The author fees for non-OA journals in China could play a role in the higher number of articles. The “mega journal” phenomenon does not seem to be a common practice among all the journal lists studied.

Keywords: SCI; SSCI; CSCD; CSSCI; journal frequency; number of articles

1. Introduction

The scholarly journal publishing landscape has seen dramatic developments during the last two decades. One such development is the transition from print publication to online, in which publishers are progressively halting paper publications. For example, the American Chemical Society stopped publishing paper journals in 2010 [1]. Another is the emergence of Open Access (OA) journals, in which these journals now maintain a new business model. By early 2019, there were 20,000 or more OA journals in the world, with DOAJ (Directory of Open Access Journals, a white list at <https://doaj.org/>) including over 12,000 journals, and Cabell's Blacklist (a subscription-based blacklist of predatory OA journals at <https://www.cabells.com/>) including over 10,000 journals. Additionally, while these prior developments have been global, some developments have been more regional. One such a regional development is in China: China published 21 journals in 1970, 930 journals in 1978 [2], and by February 2019, 11,188 scholarly journals, based on CNKI's (China National Knowledge Infrastructure) academic journals section at <http://oversea.cnki.net/kns55/brief/result.aspx?dbPrefix=CJFD>). The new publishing models and new environment may lead to different results in the journal publication frequency and number of articles per year per journal. Björk [3,4] and Spezi et al. [5] reported that some OA “mega journals” in the world publish hundreds or even thousands of articles per year. Feng and Yuan [6] and Gao and Zhang [7] found that most traditional (non-OA) journals in China charge authors fees. Ji [8] reported that non-OA journals in China charge authors fees and publish thousands of articles

per year. Those reports seem to indicate that there are differing practices in scholarly publishing. This study aimed to record the average number of issues and articles per year by international journals in 2018–2019, as well as the data for Chinese journals at the same time, to compare the international data with the Chinese data.

No previous comprehensive study of publication frequency and number of articles has been found to cover both science and social science journals in the world. Neither has there been a comprehensive comparison between international journals and Chinese journals.

2. Literature Review

When studying journal impact measures and the citation analysis of scientific journals, Moed [9] found that among 3700 SCI (Science Citation Index) journals published in 2001, the median number of issues per journal per year was 8 (the average being 9.6), and the median number of articles per issue was 14 (the average being 22). Al and Soydal [10] found that among 82 information science journals in the world, the average number of issues per year was 5.4, and the average number of articles was 8.6 per issue in 2015. Analyzing 835 medical journals, Tsay [11] found that “publication frequency and subject field are related to the frequency of use. In general, the more frequently a journal is published, the more use it will receive.” Studying *Latin American Journal of Aquatic Mammals* published in 2002–2010, Palacios et al. [12] found that the journal’s average number of articles per issue was 13, with a total issue count of 13 throughout the 9 years (average 1.4 issues per year). No prior study of SSCI (Social Sciences Citation Index) journals publication frequency has been found by the author of this study, through searching Scopus and Google Scholar with these keywords in early 2019: journal frequency, journal publication frequency, journal issues per year, SSCI and publication frequency, SSCI and frequency, and SSCI issues per year, as well as through reading the references of related literature.

There are various definitions of “mega journals”. Björk [3] used a definition that “A mega journal is a peer-reviewed academic open access journal designed to be much larger than a traditional journal by exerting low selectivity among accepted articles.” Björk [3] in 2015 studied 14 OA journals identified as “mega journals” and found that these 14 journals published as many as 35,000 articles annually, or an average of 2500 articles per journal per year. Björk [3] also mentioned in the same study that issueless publishing has become mainstream in OA publishing. Based on his own 2015 study, Björk [4] in 2018 studied 19 journals he categorized as mega journals and found that the “Big Two” mega journals, *Scientific Reports* and *PLOS One*, published a total of 41,175 articles in 2017. Björk [4] also found that 25% authors of these 19 mega journals are affiliated with Chinese institutions, with *IEEE Access* having 55% authors from China in 2017. Spezi et al. [5] reported that *PLOS One*, one of the largest OA journals, published 27,400 articles in 2015. Spezi et al.’s definition of “mega journal” is “large scale, broad scope journals that operate an open access business model (normally based on article-processing charges), and which employ a novel form of peer review, focusing on scientific ‘soundness’ and eschewing judgement of novelty or importance” [5]. Wakeling et al. [13] listed four characteristics of “mega journals”: “large size; broad disciplinary scope; a Gold-OA business model; and a peer-review policy that seeks to determine only the scientific soundness of the research rather than evaluate the novelty or significance of the work.” Shen and Björk [14] studied sample OA journals from Beall’s List of Predatory Journals and Publishers and estimated that in 2014, 8000 journals published 420,000 articles, which averages out to 52.5 articles per journal per year. On April 6, 2017, Davis [15] declared that *Scientific Reports*, an OA journal published by Springer Nature, overtakes *PLOS One* as the largest “mega journal” in the world, because *Scientific Reports* published 6214 articles in the first quarter of 2017, while *PLOS One* published 5514 during the same quarter.

Yan et al. [16] observed the following behavior: A low publication frequency hurts a journal’s impact factor; a 1.5-to-2-year delay of publication of scientific articles reduces the value of information by 30%. They suggested that scientific journals in China should follow the model of weekly international journals such as *Nature* and *Science*. Li [17] estimated that the average number of articles published by a Chinese journal per year is 300. Gao and Zhang [7] listed three kinds of fees that could be charged by

traditional (non-OA) journals in China: layout fee, review fee, and figure/chart fee. They surveyed 22 sample physics journals from the list of Chinese Core Journals by PKU in May 2018 through phone calls and learned that 20 (91%) sample journals charge authors a layout fee. They also noted that it is rare for Chinese journals to post fee information on journal websites. Feng and Yuan [6] pointed out that author fee is a problem in academic publishing and college faculty promotion in China. They found that as of 2017, only 1743 (17.3%) out of 10,084 journals published in China did not charge authors fees. Most Chinese journals are traditional (non-OA) journals, since China's directory of OA journals listed 660 OA journals as of early 2019 at <http://www.oaj.cas.cn/>. Feng and Yuan also noted that some journals have fee waivers based on article quality and authors' academic rankings. One example by Feng and Yuan is *Journal of Tongji University (Social Science Section)*, a Chinese Social Sciences Citation Index (CSSCI)-indexed journal, which has a fee-waiver section and a pay-to-publish section. Li [18] reported that junk papers manufactured by a paper mill named Youda in Wuhan, China were published by China's national level journals simply because the paper mill was willing to pay a layout fee, which had led to increased number of articles and decreased quality. Ji [8] reported that some non-OA journals in China ask authors for fees even though the journals publicly stated that they do not charge author fees, and that these journals publish dozens or even hundreds of articles per issue and as many as 36 issues per year, in order to boost revenue. The following are the four examples in the Ji report. The author of this study visited the journal websites to record the number of issues per year and number of articles in the most recent issue available as of February 2019. Their publication frequency ranges from 24 to 36 issues per year, and the number of articles per issue ranges from 68 to 143 articles:

- *China & Foreign Medical Treatment* (1674–0742). Published every 10 days (36 issues per year); 68 articles in Issue 35 of 2018.
- *Diabetes New World* (1672–4062). Semimonthly (24 issues per year); 90 articles in Issue 23 of 2018.
- *Science & Technology Information* (1672–3791). Every 10 days (36 issues per year); 141 articles in Issue 30 of 2018.
- *Science and Technology Innovation Herald* (1674–098 X). Every 10 days (36 issues per year); 143 articles in Issue 26 of 2018.

3. Methods

SCI and SSCI journals are used as sources for international journals. One reason is that SCI and SSCI are gold-standard lists of established journals, and there was a study of SCI's 2001 data on average journal publication frequency and number of articles. Another reason is that there are Chinese counterparts of SCI and SSCI. These counterparts are CSCD (Chinese Science Citation Database) and CSSCI (Chinese Social Sciences Citation Index). Similar to SCI and SSCI, CSCD and CSSCI are also selective lists of established journals, and it is easy to tell by their names that they imitate SCI and SSCI respectively with Chinese journals.

Journal lists were downloaded in January 2019 from the official websites of the owners of SCI, SSCI, CSCD, and CSSCI. Here are the list URLs and the number of journals each list has:

- SCI: <http://mjl.clarivate.com/cgi-bin/jrnlst/jlresults.cgi?PC=K> (3736 journals)
- SSCI: <http://mjl.clarivate.com/cgi-bin/jrnlst/jlresults.cgi?PC=ss> (3391 journals)
- CSCD: http://sciencechina.cn/style/sourcelist17_18.pdf (1028 Chinese journals published domestically, in addition to 201 English journals published by international publishers)
- CSSCI: <http://cssrac.nju.edu.cn/a/xwdt/zxdt/20170116/2805.html> (553 Chinese journals published domestically)

The lists were then converted to MS Excel files in their original orders. SCI and SSCI lists are in English alphabetical order, CSCD list's Chinese journals in Pinyin's alphabetical order, and CSSCI journals in subject order. Systematic random sampling was used to take 5% sample journals from the SCI and SSCI lists, with every 1st, 21st, 41st, 61st, and so forth journal selected. A total of 186 SCI

journals and 170 SSCI journals became the samples. Systematic random sampling was also used to collect CSCD and CSSCI samples, but since these two lists are much smaller than SCI and SSCI, 10% samples were taken. The 201 CSCD English journals by international publishers such as *Acta Biochimica et Biophysica Sinica* by Wiley are listed separately by CSCD and they were not included in sampling of this study, so that only journals published in China were collected. Every 1st, 11th, 21st, 31st, and so forth journal on CSCD and CSSCI was chosen, which resulted in 104 CSCD journals and 61 CSSCI journals as the samples for this study.

The author of this study then visited the websites of these 186 SCI journals, 170 SSCI journals, 104 CSCD journals, and 61 CSSCI journals to manually record the numbers of issues per year, articles per issue, and other data in Excel files. SCI and SSCI lists include journal frequency information, while CSCD and CSSCI lists do not have that kind of information. Therefore, SCI and SSCI journal frequency information was acquired from SCI and SSCI lists, while CSCD and CSSCI journal frequency was manually acquired one by one from journal webpages. As all CSCD and CSSCI journals have a presence (a home page) on the CNKI website, and each journal's homepage on CNKI includes journal frequency information, CNKI was used to collect all information for CSCD and CSSCI samples. For SCI and SSCI samples, the data (number of articles) were collected from each journal's website by its publisher. For example, *Chemical Engineering Science* is published by Elsevier, and its data were collected from the journal's homepage on Elsevier's ScienceDirect.

Each type of publication frequency was assigned a value from 1 to 52 in Excel files in order to obtain the total, mean, and median values. Here is how a certain value was assigned:

- Annual 1
- Semiannual 2
- Triannual 3
- Quarterly 4
- Bimonthly 6
- Monthly 12
- Semimonthly 24
- Biweekly 26
- Weekly 52

A few journals do not precisely follow the publication frequency they are categorized in, but as long as the deviation does not go too far, their frequency value was not changed by this study. Here are two examples: *Ekonomicky Casopis* (0013-3035) is listed as a monthly journal, but it publishes ten issues per year, and *Industrial Marketing Management* (0019-8501) is listed as a bimonthly journal, but it published 8 issues per year recently. A rare exception is that *Zeitschrift für Psychologie* (0323-8342), which is listed as a monthly journal by SSCI, was changed to be regarded as a quarterly journal by this study due to it recently having had only four issues per year. This study also did not change the frequency value for journals with combined issues, regardless of how often they publish combined issues.

Each journal's last available issue for 2018 was used to manually count the number of articles in January–February 2019. The “last available issue for 2018” may or may not be a journal's last issue for 2018, as by February 2019, some journals' final issue for 2018 had not been released yet. Not all items listed in the table of contents were counted as articles. Items not counted include acknowledgements, announcements, editorials, editor's notes, errata/corrigenda, introductions, issue information, letters/correspondences to the editor, news, obituaries, previews, updates, as well as short book reviews and mini reviews (about one page or so). Supplement issues were not counted.

Multiple-page items such as reports, comments, review essays, and columns were counted. Examples include the following, with the first one being listed as “Brief Reports”, the second as “Comments”, the third as “Review Essays”, and the fourth as “Columns”:

- Otake, S., Treiman, R. & and Yin, L. (2018). Preschoolers' knowledge about language- specific properties of writing. *British Journal of Developmental Psychology*. 36 (4): 667–672.

- Gentry, T. (2018). The Essence test: Picking up a supreme court fumble. *Catholic University Law Review*. 67 (4): 737–759.
- Molotch, H. (2018). Sociologies missed and found. *Contemporary Sociology: A Journal of Reviews*. 47 (6): 652–655.
- Holtzman, J. & Kramer, D. (2018). Harmonizing standards and incentives in medical device regulation: Lessons learned from the parallel review pathway. *Journal of Law, Medicine & Ethics*. 46 (4): 1034–1039.

All Chinese sample journals have regular frequency information on their CNKI pages; however, roughly 2% of SCI and SSCI journals either are marked “Irregular” or do not have any frequency information on their lists. In the case that a certain SCI or SSCI sample journal does not have the value for a regular number of issues per year, the sampling replaced that journal with the next journal on the list with a regular publication frequency so that a certain value (for example, value of 4 for a quarterly journal) can be assigned. There are a total six such samples, with three from SCI and three from SSCI.

Three samples are not regular journals. *Economics Letters* (0165-1765, SSCI) and *Bioorganic & Medicinal Chemistry Letters* (0960-894 X, SCI) publish only “Short communication” pieces that are typically 3 pages long. *Forbes Magazine* (0015-6914, SSCI) publishes articles more like newspaper and popular magazine articles rather than scholarly journal articles. These three samples were replaced by a journal listed below them on the journal lists.

If the last issue of 2018 was a combined issue, the most recent single issue in 2018 was used. If most or all issues in 2018 were combined issues—for example, *American Journal of Community Psychology* (0091-0562) has combined 1–2 and 3–4 issues for all the recent years—then half of the articles of the last combined issue in 2018 were counted as the total of one issue.

“China” in this article refers to China’s mainland, since journals published in Hong Kong, Macao, and Taiwan are not included in CSCD and CSSCI lists. When referring to “mega journals”, this study adopts the definition Björk used (“much larger than a traditional journal by exerting low selectivity among accepted articles”). All URLs in References and in the body of the article were last checked on June 28, 2019.

Finally, in addition to collecting and displaying raw sample data, trimmed average is also used, by removing one sample with the highest number of articles and one sample with the lowest number of articles, to obtain the trimmed average data from SCI, SSCI, CSCD, and CSSCI samples, since a journal at either end could considerably skew the average data.

4. Results

First of all, because SCI and SSCI lists include journal publication frequency information (such as monthly and quarterly), the author of this study used Excel to obtain the actual frequency of SCI and SSCI journals. Table 1 displays the frequency data of 3736 SCI journals. As 63 journals are marked “Irregular” and 19 have no information on frequency on the SCI list, they cannot get a value and be used in calculating the average number of issues per year. Of the 3654 journals that have a value from 1 for annual journals to 52 for weekly journals, the average publication frequency is 10.95, or, on average, SCI journals publish 10.95 issues per year. That is similar to the average of 9.6 issues per year in 2001 found by Moed [9]. Table 1 also tells us that science journals in SCI have a publication frequency that is most commonly monthly, and that 1688 monthly journals account for 45.18% all SCI journals.

Table 1. Science Citation Index (SCI) journals' frequency—all journals' data.

Journal Frequency	Number of Journals	Frequency Value	Total Value (82 Irregular or No Info Journals Not Included)	Average Issues Per Year (82 Irregular or No Info Journals Not Included)
annual	64	1	64	
semiannual	25	2	50	
tri-annual	19	3	57	
quarterly	437	4	1748	
bimonthly	1010	6	6060	
monthly	1688	12	20,256	
semimonthly	302	24	7248	
biweekly	44	26	1144	
weekly	65	52	3380	
irregular	63			
no info	19			
Total/Average	3736		40,007	10.95

Similarly, Table 2 displays the data of actual frequency for SSCI journals, with an average of 5.18 issues per year. Table 2 also indicates that social sciences journals in SSCI differ from science journals in that they more likely operate at a quarterly publication frequency instead of a monthly frequency, with 1539 quarterly journals accounting for 45.38% of all SSCI journals.

Table 2. Social Sciences Citation Index (SSCI) journals' frequency—all journals' data.

Journal Frequency	Number of Journals	Frequency Value	Total Value (60 Irregular or No Info Journals Not Included)	Average Issues Per Year (60 Irregular or No Info Journals Not Included)
annual	62	1	62	
semiannual	189	2	378	
tri-annual	258	3	774	
quarterly	1539	4	6156	
bimonthly	971	6	5826	
monthly	292	12	3504	
semimonthly	15	24	360	
biweekly	2	26	52	
weekly	3	52	156	
irregular	45			
no info	15			
Total / Average	3391		17,268	5.18

Tables 1 and 2 can serve as a 2019 record for the whole picture of journal publication frequency among SCI and SSCI journals, because they are based on all the journals as long as a journal has the frequency information on SCI and SSCI lists. The average frequency data in Tables 1 and 2 can also serve as the base data to compare and observe if the SCI and SSCI sample data on frequency in the subsequent tables deviate from the all-journal data.

This study's initial sample data of the 186 SCI samples, 170 SSCI samples, 104 CSCD samples, and 61 CSSCI samples are displayed in Table 3, which includes the following information: average issues per year per journal; average articles per issue; the median, minimum, and maximum number of articles per issue among the samples; and the median, minimum, and maximum number of articles per year among the samples. SCI and CSCD columns are put next to each other, and SSCI and CSSCI columns are put next to each other for easier comparisons. Moed [9] found that the median number of articles per issue was 14 and the mean was 22 for the SCI journal in 2001, while the same kind SCI data in 2018–2019 found by this study were 12 and 15.34, respectively.

Table 3. Sample data from SCI, SSCI, Chinese Science Citation Database (CSCD), and Chinese Social Sciences Citation Index (CSSCI).

	SCI	CSCD	SSCI	CSSCI
average issues per year	9.98	9.17	5.09	7.87
average articles per issue	15.34	23.18	12.01	18.5
average articles per year	175.01	218.83	82.89	145.53
least article per issue	3	9	2	5
most articles per issue	95	65	529	37
median articles per issue	12	21	7	18
least articles per year	6	40	7	30
most articles per year	2280	960	6548	624
median number of articles per year	102	174	32	126

Three samples are not regular journals. *Economics Letters* (0165-1765, SSCI) and *Bioorganic & Medicinal Chemistry Letters* (0960-894 X, SCI) publish only “Short communication” pieces that are typically 3 pages long. *Forbes Magazine* (0015-6914, SSCI) publishes articles more like newspaper and popular magazine articles rather than scholarly journal articles. These three samples were replaced by a journal listed below them on the journal lists.

The findings in Table 3 include the following data points:

- Compared with the Moed [9] SCI data for 2001, SCI journals in 2018–2019 had a similar publication frequency and published slightly fewer articles per issue.
- The “mega journal” phenomenon is not prevalent among SCI and SSCI samples and is even much less so among CSCD and CSSCI samples. One outstanding sample is an SSCI journal, *Sustainability* (2071–1050, a monthly OA journal), which published 529 articles in its December 2018 issue. The largest amounts of articles per issue in SCI, CSCD, and CSSCI were 95, 65, and 37, respectively. by contrast, among the mega journal examples mentioned in the Literature Review section, *PLOS One* published 27,400 articles in 2015, and *Scientific Reports* published 6214 in the first quarter of 2017.
- Even though SSCI samples include one possible “mega journal”, SSCI’s average articles per issue (12.01) were fewer than CSSCI’s (18.5).
- CSSCI samples had considerably higher publication frequencies than SSCI samples, with CSSCI samples’ average frequency being 7.87 and SSCI’s being 5.09 per year.
- CSCD samples were fairly close to SCI samples in publication frequency (SCI’s 9.98 versus CSCD’s 9.17), but CSCD journals’ average number of articles per issue was considerably higher than SCI’s (SCI’s 15.34 versus CSCD’s 23.18).

Table 3’s average issues per year data from SCI and SSCI samples are fairly close to the respective all-journal data in Tables 1 and 2: SCI all-journal average issues per year were 10.95 and sample data were 9.98, while the SSCI all-journal data were 5.18 and the sample data were 5.09.

As stated in the Methods section, six SCI and SSCI samples marked “Irregular” were replaced by journals with publication frequency information listed next to them. The following are the six “Irregular” samples:

- *BMC Palliative Care* (1472-684 X, an OA journal, SSCI) appears to publish one issue per year. Its 2018 issue (Volume 17) published 131 articles.
- *Malaria Journal* (1475-2875, an OA journal, SCI) appears to publish one issue per year. Its 2018 issue (Volume 17) published 484 articles.
- *Psychology Research and Behavior Management* (1179-1578, an OA journal, SSCI) appears to publish one issue per year. Its 2018 issue (Volume 11) published 61 articles.

- *Progress in Tumor Research* (0079-6263, SCI) is published irregularly. There is one issue in most years, but no issue was published in 2004, 2006, and 2016. Each issue has its own title like a book. For example, the title of the 2018 issue (Volume 44) is *Advances in Radiation Therapy*, and there are 10 articles in the 2018 issue.
- *Reproductive Health* (1742-4755, an OA journal, SSCI) appears to publish one issue per year. Its 2018 issue (Volume 15) published 219 articles.
- *Reviews of Physiology, Biochemistry and Pharmacology* (0303-4240, SCI) is published irregularly, with two issues in 2018, one in 2017, and three in 2016. There are four articles in the first 2018 issue (Volume 174) and three articles in the second 2018 issue (Volume 175).

The number of articles published by these six “irregular” journals in 2018 are, respectively, 7, 10, 61, 131, 219, and 484, with the highest three being from OA journals and 152 being the average number of articles per year for all six journals. The average of 152 articles per year is clearly skewed by the three OA journals but is also somewhat in line with the SCI average (175.01) and SSCI average (82.89). As the number of articles per year by these “Irregular” journals ranges from 7 to 484, probably none of them can be categorized as a “mega journal”.

Next, the author of the study also tried to get the trimmed average by removing one sample with the highest number of articles and one sample with the lowest number of articles, since a journal at either end could considerably skew the average data. Table 4 lists the trimmed average data from SCI, SSCI, CSCD, and CSSCI samples. Similar to Table 3, SCI and CSCD columns are put next to each other and SSCI and CSSCI columns are placed next to each other for better visualization.

Table 4. Trimmed average of sample data from SCI, SSCI, CSCD, and CSSCI.

	SCI	CSCD	SSCI	CSSCI
average articles per issue	14.97	23.15	8.96	18.5
average articles per year	164.49	213.27	46.05	145.87
least article per issue	3	9	2	5
most articles per issue	82	65	49	37
median articles per issue	12	21	7	18
least articles per year	6	60	8	30
most articles per year	1968	780	276	624
median number of articles per year	102	174	32	126

After removing two samples on both ends (with the smallest and largest number of articles) from all four groups, the findings in Table 4 include the following data points:

- There is not much change between the SCI and CSCD comparison. CSCD samples’ average articles per issue is still somewhat higher than SCI’s (SCI’s 14.97 versus CSCD’s 23.15).
- There is a dramatic change in the SSCI and CSSCI comparison. CSSCI’s average data were already higher than SSCI’s when an SSCI “mega journal” sample was included as shown in Table 3. Without the SSCI “mega journal”, CSSCI’s average data become significantly higher. For example, SSCI’s trimmed average number of articles per issue was 8.96, while CSSCI’s corresponding average value was 18.5.

There may be various reasons why CSCD/CSSCI journals publish more than their international counterparts. Feng and Yuan [6], Ji [8], and Li [18] have pointed out that author fees charged by non-OA journals in China lead to higher publication frequency and more articles for some journals. Other possible reasons may include that Chinese universities require that PhD students publish before they can graduate [19], and Chinese hospitals require that physicians publish in order to get a promotion [20].

5. Conclusions

This study is the first one to cover both SCI and SSCI journals in putting on record their publication frequency and number of articles per issue, since only a study of SCI journals (based on 2001 data) was found by the author of this study. This study is also the first one to compare China's CSCD and CSSCI with their international counterparts SCI and SSCI in terms of publication frequency and number of articles per issue.

Compared with 2001 data by Moed [9], SCI journals' publication frequency in 2018–2019 remained about the same, and the number of articles per issue among SCI journals decreased slightly.

As of 2018–2019, the average numbers of issues per year for SCI and SSCI journals were 10.95 and 5.18, respectively, not counting about 2% journals in each group marked “Irregular” or having no publication frequency information. Monthly is the most common frequency of SCI journals, while quarterly is the most common frequency of SSCI journals. The “mega journal” phenomenon described by Björk [3,4], Spezi et al. [5], Wakeling et al. [13], and others has not become a mainstream practice among SCI and SSCI journals, since only one sample (*Sustainability*, an SSCI monthly OA journal) of this study could be characterized as a “mega journal”. “Issueless”, described by Björk [3], has not become a common practice among SCI and SSCI journals either. As shown in Tables 1 and 2, more than 98% of SCI and SSCI journals have a fixed publication frequency ranging from weekly to annual. One sample (*Sustainability*) that publishes far more articles per issue than any other samples in this study is an SSCI OA journal, which published 529 articles in its monthly issue of December 2018.

Ji [8] and Li [18] made complaints, with Ji listing detailed examples, that some Chinese non-OA journals charge authors fees, and that some journals publish as many as 200 articles per issue, with as many as 36 issues per year in order to boost revenue. Although this study confirmed that examples in the 2011 Ji report still published 36 issues per year and 68 to 143 articles per issue in 2018, this study found zero “mega journals” from the 10% samples of CSCD and CSSCI journals, with 65 and 37 being the highest numbers of articles per issue respectively among CSCD and CSSCI journals. One conclusion could be that “mega journals” are probably less common in China than in the world.

However, Chinese journals, especially social science journals, do on average publish more articles per issue and more articles per year compared to their counterparts in the world. SCI and CSCD journals have comparable numbers of issues per year, but CSCD journals publish considerably more articles per issue. CSSCI journals have more issues per year than SSCI journals and also publish far more articles per issue than SSCI journals. As a result, CSSCI journals publish significantly more articles per year than SSCI journals. The author fees in China for non-OA journals might play a role in elevated publishing frequency and number of articles in China, as APC (article processing charges) might for some OA journals in the world.

6. Limitations and Future Studies

The samples of this study were from SCI, SSCI, CSCD, and CSSCI, the selective indices of more established journals. It is possible that a higher proportion of “mega journals” or journals with unusually large number of articles are not included in these indices. Other limitations of this study include: Larger sample sizes might find some new information and development of certain individual journals; automatic tally of the total articles per year for all the journals from both international and Chinese lists would produce more accurate data. Future studies may want to find an automatic way to collect data from the SJR (Scimago Journal & Country Rank) site (<https://www.scimagojr.com/>). The author of this study found that, as of August 2019, the “Download data” link of the SJR site were incomplete for its “Total Docs” data, even though the site data for viewing look complete. The harder part for future studies would be collecting Chinese data with some automation.

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