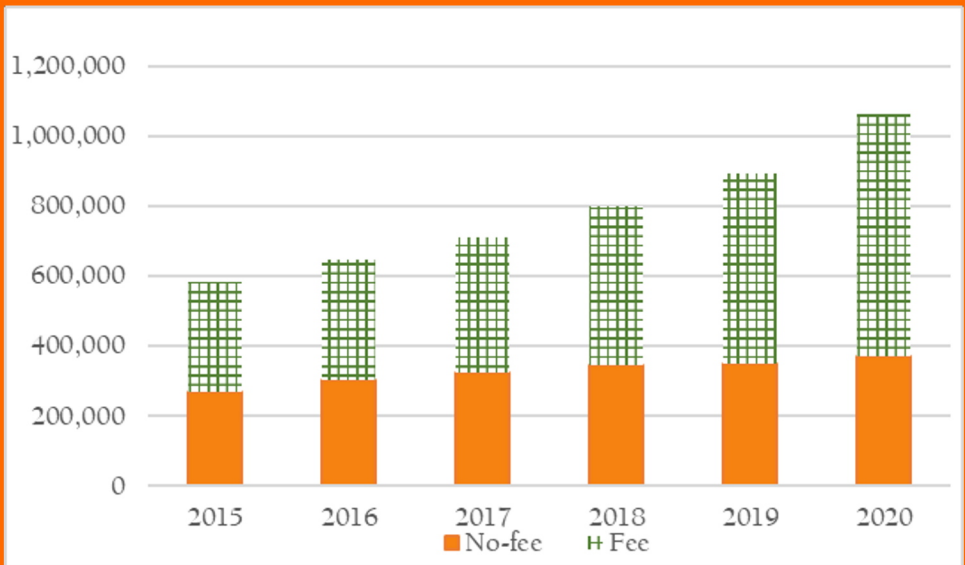


Gold Open Access 2015-2020

Articles in Journals (GOA6)



Walt Crawford

GOLD OPEN ACCESS
2015-2020
ARTICLES IN JOURNALS
(GOA6)

Walt Crawford

Cites & Insights Books
Livermore, California, 2021

Gold Open Access 2015-2020: Articles in Journals (GOA6)

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This book was prepared entirely in Word 2019, using the licensed typefaces Berkeley Book and Berkeley (bold) for text and Calibri for headings and subheadings. Excel 2019 was used for data gathering and to prepare tables and graphs. The template is a customized version of bk6pv.dotx (modified for different typefaces and slightly different heading practices), a template developed by the author, modified and improved with the cooperation Information Today, Inc. and freely available at waltcrawford.name/bk6pv.dotx. (The template named uses Palatino Linotype for body text and Verdana for headings.) For more about the template and using no-cost methods to produce professional-quality books, read *The Librarian's Guide to Micropublishing*.

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Preface

This book is the sixth full study of serious gold open access—open access articles in open access journals listed in the *Directory of Open Access Journals*. This and previous editions are available as free PDF ebooks or paperbacks priced to cover production costs.

Thanks to SPARC's continued support, I was able to update the database to include all journals in the *Directory of Open Access Journals* as of very early January 1, 2021 (UMT) and to add 2020 counts and earlier counts as needed (and refine subject assignments).

This book follows the pattern of the previous versions but includes some changes. These changes are discussed in Chapter 1. The most obvious ones are the elimination of Miscellaneous as a publisher category and belatedly moving thousands of journals from “o” to “t” because they are owned by traditional publishing firms or groups.

Gold Open Access by Country 2015-2020 will appear a few weeks after this book appears.

Acknowledgments

Thanks first and foremost to SPARC. Without SPARC's sponsorship, this project would not have happened—and good advice and feedback from Raym Crow and Val Hollister improved the project.

Thanks to Linda Driver for tolerating and encouraging my ongoing obsession with getting the facts right about real-world open access.

Acknowledgments from previous editions still apply.

The work is my responsibility, as are errors that may have crept in.

Links

The data used for this report is freely available, with a Creative Commons BY (attribution) license: you can do what you want with it as long

as you properly credit the source. So, too, the PDF version of this book and of supplemental books are issued with CC BY licenses.

Links are at <http://waltcrawford.name/goaj.html>.

1. The Big Picture

A million and a billion: two milestones for serious OA in 2020. This study attempts to answer questions about the state of serious gold OA publishing—its extent, the extent of fee-based and no-fee publishing, and some complexities of the picture. I define serious gold OA as journals in [*Directory of Open Access Journals* \(DOAJ\)](#).

The overall picture of serious gold OA in 2020:

- 1,061,256 articles in 2020, up from 894,054 in 2019; 801,656 in 2018; 712,026 in 2017; 645,731 in 2016 and 585,264 in 2015. (2015-2017 counts may be slightly low.) The 2020 increase is 18.7%. My estimate (based on ISSN matching) is that around 2,175 journals were added during the year and around 985 were deleted (or excluded—see Chapter 2).
- 15,128 fully-analyzed journals, of which 14,175 published articles in 2020 for an average of 75 articles per journal (up from 66 in last year's report).
- Although most gold OA journals (69% of those active in 2020) do not charge fees, most articles (65% in 2020) do involve fees.
- The average cost per article was no more than \$1,203 in 2020 and probably less, but that's up considerably (\$180) from 2019. Potential fees exceeded \$1.27 billion.

Gold OA isn't one homogeneous field. The rest of this book provides more detail and ways of looking at gold OA and how it's done. The book is generally patterned after previous editions for comparability, with changes to improve usefulness and clarity.

While some discussions and tables involve the full 15,128, others—where 2020 article counts are fundamental—address only 14,175, ignoring 953 journals with no 2020 articles when checked.

Key Definitions

Gold Open Access

Gold OA articles are open access articles appearing in open access journals. This study is limited to those journals serious enough to be in DOAJ. “Hybrid” journals and “delayed access” journals are excluded. This definition includes so called “diamond” and “platinum” journals.

Other Terms and Data Sources

Journal names, publisher names, starting year and country of publication all come directly from the *Directory of Open Access Journals* as of 12:30 a.m. (UMT) January 1, 2021.

Subjects were assigned based on DOAJ subject and keyword fields, and in some cases refined based on scanning article titles. Subject segments were assigned based on subjects.

Regions were assigned based on country of publication.

Publisher categories were assigned based on publisher names and available online information.

Fees include normally-mandatory submission, processing and publishing fees (including required society membership), as they would be applied for two U.S. authors in the most expensive author category, for a 10-page article in the most expensive article category, in U.S. dollars in 2020 (either the median exchange rate for 1/1/2020-12/27/2020 or, for some currencies, the median exchange rate for six months ending on 12/27/2020). For journals that only charge authors within the country of publication, those charges are used.

Articles per year were determined by direct observation augmented by DOAJ, using shortcuts where available and Find counts when feasible (e.g., when each article has “PDF” as a text tag or “doi.” in a DOI).

Revenue is the current fee times the 2020 article count and is always the maximum potential revenue, ignoring waivers, discounts and lower charges for some article or review types. Actual revenue may well be at least 15% lower.

Key Facts, Overall

	Journals	Articles	Art%	\$/Art
All	15,128	1,061,256		\$1,203
Fee	4,585	690,918	65%	\$1,848
No-fee	10,543	370,338	35%	
Biomed	3,643	394,910	37%	\$1,608
Fee	1,892	300,936	76%	\$2,111
No-fee	1,751	93,974	24%	
STEM	3,891	431,004	41%	\$1,404
Fee	1,597	332,599	77%	\$1,819
No-fee	2,294	98,405	23%	
H&SS	7,594	235,342	22%	\$157
Fee	1,096	57,383	24%	\$645
No-fee	6,498	177,959	76%	

\$/Art is a weighted figure based on multiplying each journal's article count by its fee, ignoring discounts and waivers. The percentages in the **Biomed**, **STEM** (science, technology, engineering and math) and **H&SS** (humanities and social sciences) rows are percentages of **All**.

Articles per Year and Special Codes

Code	Count	2020	2019	2018	2017	2016	2015
a	13,730	1,032,784	862,967	767,517	677,351	611,530	555,424
bi	333			3,556	5,562	7,412	7,673
bx	730	23,204	22,086	21,932	21,406	20,034	16,501
xm	260	4,910	7,817	6,674	5,941	5,063	4,328
xx	75	358	1,184	1,977	1,766	1,692	1,338
Total	15,128	1,061,256	894,054	801,656	712,026	645,731	585,264
Increase		18.7%	11.5%	12.6%	10.3%	10.3%	

This table shows article counts for each of the past six years and also shows codes for special categories of journals within the overall serious OA universe.

Codes are as follows:

- **a** is for journals active in 2019 or 2020 with no special codes.
- **bi** (inactive) journals have articles after 2014 but none since 2018.

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- **bx** journals could not be reached using the URL downloaded from DOAJ but could be reached using a title search or another route.
- **xm** (malware) journals were trapped by Malwarebytes Pro, but fees and article counts were available elsewhere (usually DOAJ), and the journal was *not* xm in 2019.
- **xx** (unavailable) journals could not be reached, but fees and article counts were available in DOAJ, and the journal was *not* xx in 2019.

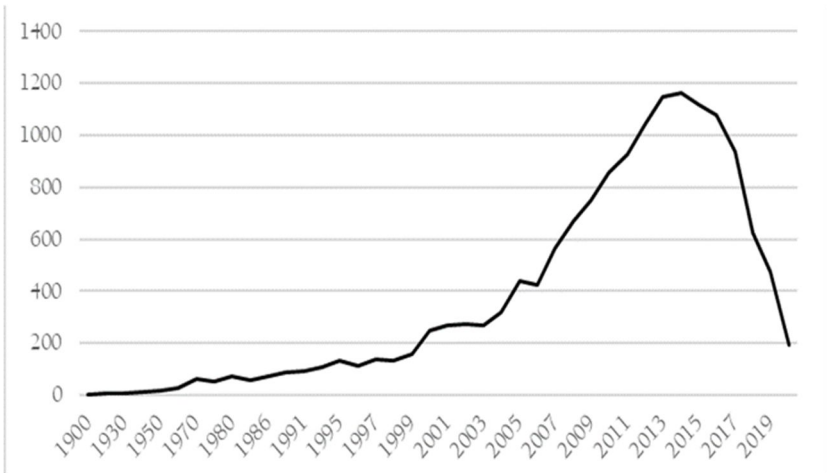
These codes are not used in the remainder of this book since—other than xm—they do not imply anything negative about the journals. Once again this year, xm and xx journals with full information *are* included (but only if this wasn't their second "x year") because it was assumed that the pandemic made it difficult to fix the reported problems.

Revenue and Costs for Latest Year in the Last Five Studies

	2020	2019	2018	2017	2016
Revenue	\$1,277,135K	\$873,263K	\$649,415K	\$493,242K	\$419,887K
Fee	690,918	522,018	413,826	316,836	298,448
\$/art	\$1,848	\$1,673	\$1,569	\$1,557	\$1,407
Tot.art.	1,061,256	854,018	711,670	563,147	523,205
\$/art	\$1,203	\$1,023	\$913	\$876	\$803
No-fee	34.9%	38.9%	41.9%	43.7%	43.0%

This table shows the final year in each of the last five studies, with annual rises in per-article fees and generally shrinking no-fee article percentages. Note the substantial growth in possible revenues. (The 2015 study was omitted because it would require using too-small type; it was also anomalous since it preceded the winnowing of DOAJ journals.)

Journals by Starting Year, Overall



This figure shows starting dates for the journals or for open access. Although only half the data points are labeled, there's a point for each year from 1996 on, every two years 1990-95, every three years 1981-89, every five years 1971-80, every decade 1921-1970, and at the far left one group on or before 1900 and one for 1901-1920.

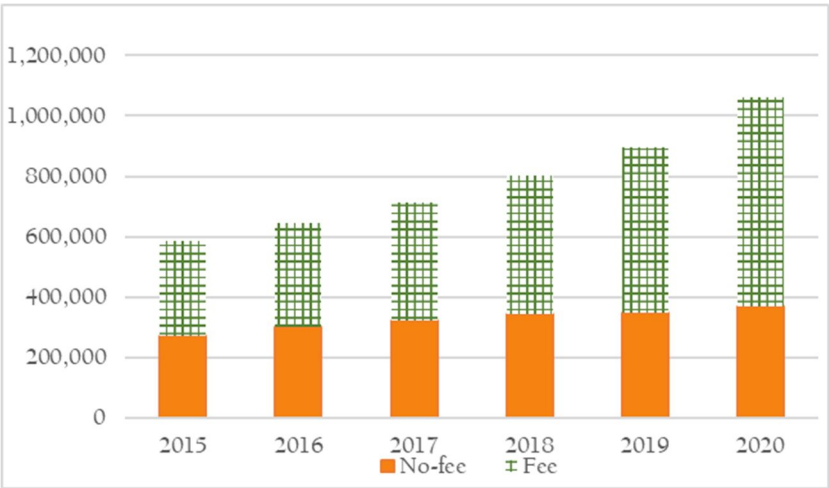
Starting Date, Overall

This table shows starting dates for fee and no-fee journals.



6 Gold Open Access 2015-2020: articles in journals (GOA6)

Journals are in two-year groups since 1992, and each data point is labeled.



Fee and No-Fee Articles by Year, Overall

This figure uses the template used for graphic fee and no-fee article comparisons throughout the book. It’s in chronological order rather than the newest-first order of some tables. The key fact is clear enough: while both categories have grown, fee-based publishing has grown *much* faster: 120% since 2015 versus 37% for no-fee publishing. There were more no-fee articles in 2020 than fee articles in 2016.

Journal Growth and Shrinkage, Overall

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	4,142	29.8%	
Even, ±24.99%	7,801	56.1%	85.8%
Shrank 25%+	1,972	14.2%	
Total	13,915		

This table shows how journals grew and shrank in number of articles from 2019 to 2020, including *only* journals with articles in both years. Most journals stay about even, and growing journals outnumber shrinking ones by more than two to one. Some 260 journals had articles in 2020 but not in 2019, including 192 first published or reported in 2020.

Subjects, Overall

Subject	Journals	Articles	%No-fee	\$/article
Medicine	3,224	329,202	27%	\$1,499
Other Sciences	220	76,191	7%	\$2,090
Biology	419	65,708	8%	\$2,154
Ecology	472	60,733	27%	\$1,357
Engineering	515	57,699	19%	\$1,337
Chemistry	203	55,576	11%	\$1,656
Physics	210	40,469	26%	\$1,456
Agriculture	568	37,145	31%	\$922
Education	974	33,807	78%	\$70
Earth Sciences	506	32,131	38%	\$1,086
Economics	941	28,086	59%	\$155
Language & Literature	984	25,713	87%	\$26
Anthropology	663	22,061	64%	\$219
Computer Science	396	21,599	40%	\$884
Zoology	297	20,092	19%	\$1,054
Sociology	578	19,120	76%	\$143
Mathematics	320	17,837	37%	\$1,014
History	495	13,904	92%	\$16
Political Science	481	13,609	87%	\$68
Law	470	13,055	86%	\$57
Miscellany	241	12,421	69%	\$169
Psychology	268	11,866	44%	\$1,154
Technology	184	11,532	50%	\$667
Arts & Architecture	405	11,382	77%	\$131
Media & Communications	313	9,225	88%	\$66
Religion	318	8,635	64%	\$176
Philosophy	293	8,167	92%	\$74
Library Science	170	4,291	96%	\$28

Subjects are sorted by number of 2020 articles. Note that “Other Sciences” includes megajournals that cover many disciplines. Note also that \$/article (average cost per article) includes no-fee articles, which

helps explain the extremely low figures for History, Languages and Literature, and Library Science.

The \$2K Mark

Fee level brackets used in these reports have remained constant for some time to allow comparisons—and the top bracket starts at \$1,400. What happens if we look at a higher cutoff, say \$2,000 per article?

\$2,000 and Up Fees, Actual Numbers

Year	\$2K Journals	\$2K Articles	\$2K Revenue	\$/art
2015	384	68,016	\$163,126,524	\$2,398
2016	457	79,866	\$203,188,000	\$2,544
2017	514	94,361	\$252,410,897	\$2,675
2018	574	120,882	\$331,107,513	\$2,739
2019	728	193,842	\$513,804,536	\$2,651
2020	907	329,094	\$873,072,078	\$2,653
Change	236.2%	483.8%	535.2%	

\$2,000 and Up Fees, Percentages of Total

Year	\$2K Jrnal%	\$2K Art%	\$2K Rev%
2015	3.5%	11.7%	43.2%
2016	5.1%	15.3%	48.4%
2017	5.0%	16.8%	51.2%
2018	4.7%	17.0%	51.0%
2019	5.2%	22.7%	58.8%
2020	6.0%	31.0%	68.4%

It's not just that there's been a big growth in very expensive journals; as the second table makes clear, it's also that those journals have been growing rapidly, changing from around 12% to around 31% of serious OA publishing over six years—and from 43% of all revenue to more than two-thirds of all revenue.

Changes from Previous Edition

“Xx” and “xm” journals that were *also* problematic in last year’s survey are excluded in this one (see Chapter 2). Code “bm” no longer applies to any journals.

Publisher category “m” has been folded into “o”. Thousands of “o” journals have been corrected to “t” to reflect ownership realities.

All subject assignments were re-examined, correcting a few dozen early errors. “Overweighted subjects” was dropped as not useful.

Data

The master spreadsheet for this project, including publishers and journal titles but omitting some calculated figures (e.g., revenue) to save space, is freely available with a CC BY license. For links to the data (and links to the supplements), go to waltcrawford.name/goaj.html.

Highlights and Key Points

- More than 370,000 articles appeared in 2020 in 9,738 active journals funded through means other than author-side fees.
- More than 690,000 articles appeared in 4,437 journals charging author-side fees (including memberships), for a total of more than 1,061,000 serious gold OA articles.
- While nearly 69% of active OA journals are no-fee, most articles (65%) are in fee-charging journals.
- Serious gold OA is growing for journals currently in DOAJ, as is the rate of growth, now up to 19%.
- Some 1,096 journals appear to have increased fees from 2019 to 2020 by at least 6% and \$10; some 32 appear to have *decreased* fees by at least 6% and \$10. Whether because of better information or actual changes, 362 journals *appear* to have switched from no-fee to fee, while 211 appear to have switched from fee to no-fee.
- More than 2/3 of all revenue (68%) goes to 6% of journals, those charging \$2,000 or more per article.

2. Exclusions and Special Cases

This chapter is, in essence, one long footnote. You can skip it if you like. Along with Appendix A, it provides transparency on methodology and tells why some journals in *DOAJ* are excluded from this report.

The Basics

I visited each journal's website at least once and sometimes up to four times. The first set of visits took place between January 1, 2021 and April 20, 2021 I marked some 2,211 journals—those flagged as exclusions and journals that might not yet have final 2021 issues posted—for revisits. I revisited those journals April 22-May 10, 2021. Journals flagged as X codes were visited a third and, for some, a fourth time, May 10-19, 2021.

All work was done using Chrome, copying-and-pasting URLs into Chrome and using the embedded Google language tools. At all times, I ran Malwarebytes Pro and Windows Defender.

Excluded Journals by Type

Code	Count
xd: Duplicate or empty since 2014	70
xm: Malware encountered	379
xn: Not open access	5
xx: Unreachable/unworkable	17
Total excluded	471

Note that the xm and xx figures do *not* include 260 xm journals that I could find information for and that weren't also malware-infested in last year's scan, or the 75 xx journals I could find information for (and the 730 bx, where the journal was findable at a different url). There are 639

journals with malware, a *terrible* figure that would require very little software vigilance to eliminate.

Partial article counts for excluded journals

Code	Count	2020	2019	2018	2017	2016	2015
xm	379	4,286	6,879	10,026	9,859	9,422	6,685
xx	17	18	87	386	432	615	504

Excluded journals don't significantly reduce the overall numbers—and that would be true even if xm and xx journals that *are* included weren't.

The following sections offer additional notes on excluded journals.

xd: Duplicate or empty

Some of these are superseded or merged journals where the original is still in *DOAJ*; some are cases where two different titles appear but resolve to the same journal (e.g., language differences); some are journals that haven't published articles since 2014.

xm: Malware encountered

Most malware instances are from Indonesia (356 in all), with 43 from Poland, 38 from Brazil, 26 from Serbia (mostly because of malware at *doiserbia*), 20 from Ukraine, 15 from Spain, a dozen from Turkey, and smaller numbers from several other countries. By far the most common issue is trojan software, with occurrences of several other types—including ransomware!

xn: Not open access

What few of these are left have an assortment of flaws. Three require registration/login, one's *still* not a journal, and one now seems to be hybrid.

xx: Unreachable/unworkable

This motley crew includes a mix of issues—mostly DNS failures (11), with three not found (404), one forbidden (403), one timeout, and one that's now an ad page.

3. Continuing and Newly-Added Journals

Setting aside excluded journals, the dataset for this year includes 12,953 journals that were in last year's study and 2,175 that are new to this year. It may be useful to compare profiles for continuing and newly-added journals. As always, "new" to *DOAJ* does not usually mean "started in 2020": only 193 of the added journals show 2020 as a starting date.

Key Facts, Continuing

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	12,953	971,549			\$1,259	5%
Fee	3,982	651,049	67%	3%	\$1,879	2%
No-fee	8,971	320,500	33%	-5%		
Biomed	3,146	361,170	37%	0%	\$1,663	3%
Fee	1,672	281,449	78%	2%	\$2,134	1%
No-fee	1,474	79,721	22%	-7%		
STEM	3,352	407,238	42%	3%	\$1,443	3%
Fee	1,382	319,353	78%	2%	\$1,840	1%
No-fee	1,970	87,885	22%	-5%		
H&SS	6,455	203,141	21%	-6%	\$172	10%
Fee	928	50,247	25%	1%	\$696	8%
No-fee	5,527	152,894	75%	0%		

Key Facts, Newly-Added

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	2,175	89,707			\$602	-50%
Fee	603	39,869	44%	-32%	\$1,355	-27%
No-fee	1,572	49,838	56%	59%		
Biomed	497	33,740	38%	1%	\$1,022	-36%
Fee	220	19,487	58%	-24%	\$1,770	-16%
No-fee	277	14,253	42%	78%		
STEM	539	23,766	26%	-35%	\$736	-48%
Fee	215	13,246	56%	-28%	\$1,321	-27%
No-fee	324	10,520	44%	94%		
H&SS	1,139	32,201	36%	62%	\$63	-60%
Fee	168	7,136	22%	-9%	\$284	-56%
No-fee	971	25,065	78%	3%		

These tables introduce the full Key Facts table, adding two Rel% columns, which show relative percentages compared to overall figures. So, for example, STEM articles represent a 35% lower percentage of all articles in added journals than in all journals, and average cost of H&SS articles is 60% lower than for H&SS as a whole, \$63 compared to \$157.

It continues to be true that newly-added journals are mostly small and mostly no-fee, and that those with fees have lower fees on the whole than continuing journals.

Articles and Journals by Year, Continuing

	2020	2019	2018	2017	2016	2015
Journals	12,041	12,544	12,543	12,247	11,564	10,711
%No-fee	68%	69%	70%	70%	70%	71%
Articles	971,549	827,175	745,407	663,186	604,120	546,658
%No-fee	33%	37%	41%	44%	45%	45%
Growth	17%	11%	12%	10%	11%	

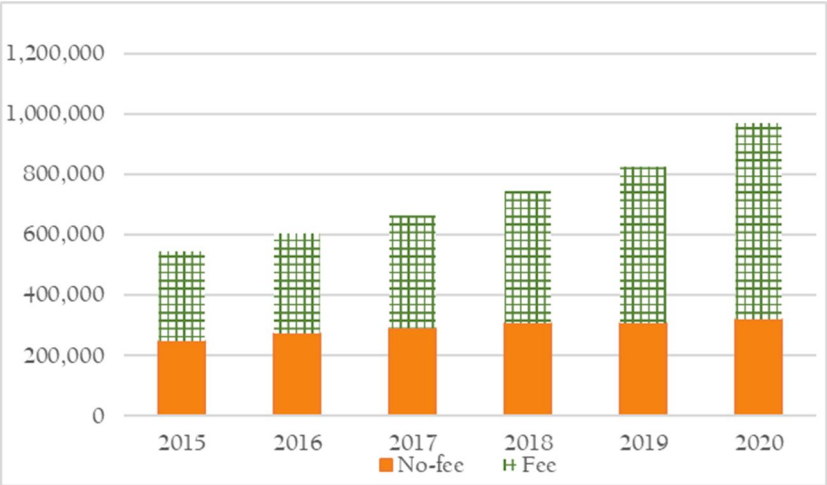
The percentage of no-fee articles in continuing journals keeps dropping.

Articles and Journals by Year, Newly-Added

	2020	2019	2018	2017	2016	2015
Journals	2,134	1,953	1,627	1,391	1,180	998
%No-fee	72%	75%	78%	79%	80%	81%
Articles	89,707	66,879	56,249	48,840	41,611	38,606
%No-fee	56%	64%	66%	66%	68%	63%
Growth	34%	19%	15%	17%	8%	

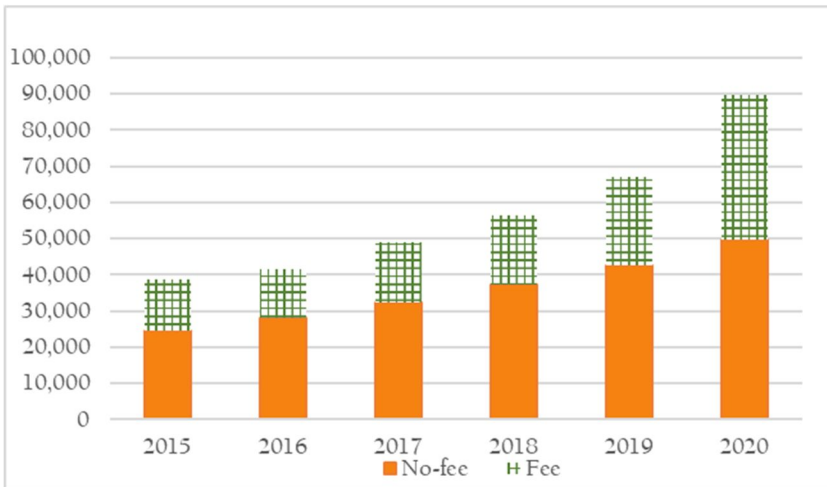
Added journals are mostly fairly small but growing rapidly.

Fee and No-Fee Articles by Year, Continuing



Note particularly the difference in vertical axis between this and the following figure: it's more than an order of magnitude. The two figures are also quite different in that no-fee articles in newly-added journals are growing rapidly and remain a majority.

Fee and No-Fee Articles by Year, Newly-Added



Article Volume, Continuing

See Chapter 5 for a discussion of article volume brackets.

	Journals	Articles	%No-fee	\$/article
Largest: 600+	218	394,520	7%	\$2,090
Large: 150-599	917	197,227	22%	\$1,327
Med.: 60-149	2,643	181,244	55%	\$548
Small: 20-59	6,773	176,632	75%	\$199
Smallest: 0-19	2,402	21,926	82%	\$118

Article Volume, Newly-Added

	Journals	Articles	%No-fee	\$/article
Largest: 600+	11	10,574	23%	\$1,332
Large: 150-599	72	15,162	25%	\$1,351
Med.: 60-149	337	23,603	57%	\$453
Small: 20-59	1,189	33,588	73%	\$231
Smallest: 0-19	566	6,780	81%	\$147

Very few largest journals are new, and (not surprisingly) those journals published relatively fewer articles than for continuing journals

Fee Level, Continuing

See Chapter 6 for a discussion of these brackets and a finer breakdown.

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	1,416	36%	11%	478,523	74%	49%
\$600-\$1.399	768	19%	6%	73,834	11%	8%
\$200-\$599	576	14%	4%	45,051	7%	5%
\$0.01-\$199	1,222	31%	9%	53,641	8%	6%
No fee	8,971		69%	320,500		33%

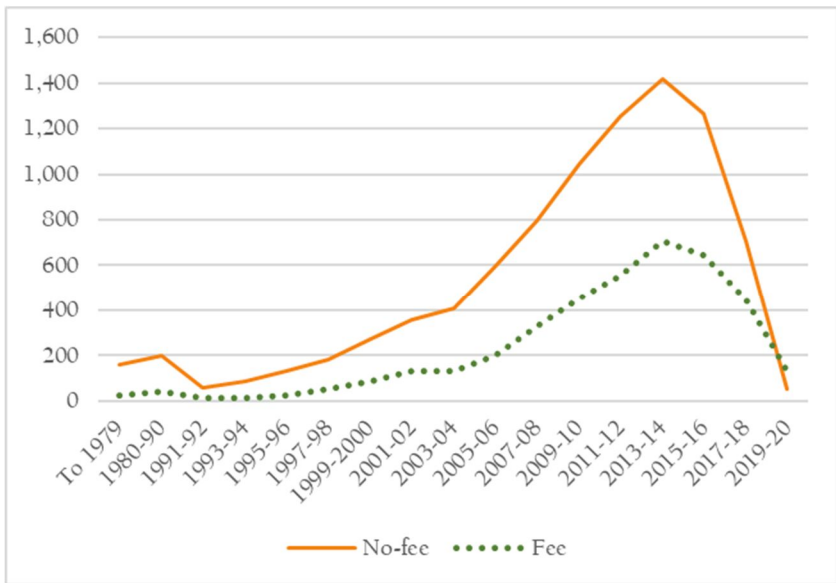
Quite a few journals have moved into the most expensive category.

Fee Level, Newly-Added

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	167	28%	8%	20,062	50%	22%
\$600-\$1.399	99	16%	5%	5,364	13%	6%
\$200-\$599	69	11%	3%	3,664	9%	4%
\$0.01-\$199	268	44%	12%	10,779	27%	12%
No fee	1,572		72%	49,838		56%

Newly-added journals are less likely to have very high fees, and a much smaller percentage of articles are published in the most expensive newly-added journals.

Starting Date, Continuing



Starting Date, Newly-Added



Once again, notice the (less dramatic) difference in vertical axes.

It would seem obvious that newly-added journals are more likely to be newish journals—but starting dates still go back quite a long time.

Note the dominance of no-fee newly-added journals but also the dramatic growth of fee journals in the last four years.

Fees and Revenue, Continuing

See Chapter 6 for more details and a discussion of the brackets.

	Articles	Revenue	\$/article
\$1,400+	478,523	\$1,129,552,242	\$2,360
\$600-\$1.399	73,834	\$72,965,084	\$988
\$200-\$599	45,051	\$16,496,987	\$366
\$0.20-\$199	53,641	\$4,112,437	\$77
No fee	320,500		
Total	971,549	\$1,223,126,750	\$1,259

Fees and Revenue, Newly-Added

	Articles	Revenue	\$/article
\$1,400+	20,062	\$46,450,156	\$2,315
\$600-\$1.399	5,364	\$5,546,943	\$1,034
\$200-\$599	3,664	\$1,228,706	\$335
\$0.20-\$199	10,779	\$782,014	\$73
No fee	49,838		
Total	89,707	\$54,007,819	\$602

Region, Continuing

See Chapter 8 for overall table and discussion of regions. “Pacific/English” is Australia, Canada, New Zealand and the United States.

Region	Journals	Articles	%No-fee	\$/article
Western Europe	4,026	528,986	17%	\$1,854
Pacific/English	974	123,814	15%	\$1,652
Latin America	2,507	103,378	86%	\$42
Eastern Europe	2,295	85,919	66%	\$109
Asia	2,010	78,674	47%	\$215
Middle East	970	43,842	65%	\$117
Africa	171	6,936	35%	\$293

As is usually the case for Region tables, rows are sorted by decreasing article count.

Region, Newly-Added

Region	Journals	Articles	%No-fee	\$/article
Western Europe	531	27,063	46%	\$968
Latin America	444	14,804	94%	\$7
Eastern Europe	382	14,568	63%	\$83
Pacific/English	191	13,540	20%	\$1,836
Asia	402	12,094	55%	\$88
Middle East	191	6,677	63%	\$64
Africa	34	961	73%	\$150

Publisher Category, Continuing

See Chapter 7 for overall table and discussion of these categories.

Category	Journals	Articles	%No-fee	\$/article
Open Access	2,900	426,217	13%	\$1,803
Univ/college	7,693	269,546	73%	\$200
Traditional	1,123	173,891	20%	\$1,775
Society/govt	1,237	101,895	36%	\$903

Publisher Category, Newly-Added

Category	Journals	Articles	%No-fee	\$/article
Univ/college	1,410	45,374	74%	\$167
Traditional	228	20,578	23%	\$1,649
Open Access	324	13,818	43%	\$403
Society/govt	206	9,793	56%	\$706

Journals published by universities and colleges not only dominate journal introductions but also account for a slight majority of all articles.

Growth and Shrinkage, Continuing

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	3,497	29.2%	
Even, $\pm 24.99\%$	6,787	56.6%	85.7%
Shrank 25%+	1,712	14.3%	
Total	11,996		

As already noted, only journals with articles in both 2019 and 2020 are included in this table. More than in previous years, rapidly-growing journals vastly outnumber rapidly-shrinking ones.

Growth and Shrinkage, Newly-Added

Change 2018-19	Count	Percent	Cum%
Grew 25%+	645	33.6%	
Even, $\pm 24.99\%$	1,014	52.8%	86.5%
Shrank 25%+	260	13.5%	
Total	1,919		

Subjects, Continuing

Subject	Journ.	Articles	%No-fee	\$/article
Medicine	2,783	297,886	25%	\$1,548
Other Sciences	189	74,294	6%	\$2,127
Biology	363	63,284	7%	\$2,203
Ecology	393	57,592	26%	\$1,403
Chemistry	172	53,952	10%	\$1,689
Engineering	446	53,783	18%	\$1,367
Physics	175	39,291	26%	\$1,461
Agriculture	501	34,701	30%	\$934
Earth Sciences	443	29,682	37%	\$1,125
Education	827	29,421	78%	\$77
Economics	808	24,311	57%	\$174
Language & Literature	838	22,316	87%	\$29
Computer Science	345	19,652	38%	\$903
Anthropology	564	19,078	63%	\$225
Zoology	262	17,798	20%	\$1,013
Sociology	511	16,195	81%	\$141
Mathematics	264	16,073	34%	\$1,101
Political Science	401	11,853	86%	\$76
History	426	11,824	92%	\$19
Psychology	236	10,908	43%	\$1,251
Miscellany	191	10,784	72%	\$157
Law	386	10,525	85%	\$63
Technology	162	10,420	48%	\$701
Arts & Architecture	340	9,651	77%	\$140
Media & Communications	265	7,982	88%	\$75
Religion	269	7,586	63%	\$193
Philosophy	239	6,700	90%	\$90
Library Science	154	4,007	96%	\$29

Subjects, Newly-Added

Subject	Jour.	Articles	%No-fee	\$/article
Medicine	441	31,316	43%	\$1,034
Education	147	4,386	81%	\$26
Engineering	69	3,916	38%	\$932
Economics	133	3,775	74%	\$34
Language & Literature	146	3,397	90%	\$6
Ecology	79	3,141	45%	\$514
Anthropology	99	2,983	72%	\$181
Sociology	67	2,925	47%	\$155
Law	84	2,530	88%	\$34
Earth Sciences	63	2,449	52%	\$605
Agriculture	67	2,444	43%	\$759
Biology	56	2,424	34%	\$875
Zoology	35	2,294	16%	\$1,367
History	69	2,080	94%	\$2
Computer Science	51	1,947	58%	\$699
Other Sciences	31	1,897	41%	\$637
Mathematics	56	1,764	61%	\$222
Political Science	80	1,756	88%	\$9
Arts & Architecture	65	1,731	80%	\$82
Miscellany	50	1,637	51%	\$251
Chemistry	31	1,624	35%	\$551
Philosophy	54	1,467	100%	\$1
Media & Communications	48	1,243	89%	\$8
Physics	35	1,178	49%	\$1,278
Technology	22	1,112	72%	\$354
Religion	49	1,049	71%	\$52
Psychology	32	958	66%	\$49
Library Science	16	284	88%	\$12

Country of Publication

The last two tables in this chapter are partial ones, showing the countries with the most articles for continuing and new journals respectively. Complete tables would require several pages each, since 122 countries are represented. (See Chapter 8 for a complete list.)

I won't add comments on these tables, except the obvious one that the United Kingdom's position in both tables, and Switzerland in continuing journals, is at least partly due to large multinational publishers' headquarters.

For the sake of brevity and clarity (and to avoid at least one political argument), country names are shorter common forms rather than the forms used in *DOAJ* in the following cases (no change from last year):

<i>DOAJ</i>	<i>GOA6</i>
Bolivia, Plurinational State of	Bolivia
Congo, the Democratic Republic of the	Dem. Rep. Congo
Iran, Islamic Republic of	Iran
Korea, Republic of	South Korea
Macedonia, the Former Yugoslav Republic of	North Macedonia
Moldova, Republic of	Moldova
Palestine, State of	Palestine
Russian Federation	Russia
Taiwan, Province of China	Taiwan
Venezuela, Bolivarian Republic of	Venezuela

Country of Publication, Continuing (partial)

Country	Journals	Articles	%No-fee	\$/article
Switzerland	313	212,110	1%	\$2,212
United Kingdom	1,519	200,270	6%	\$2,227
United States	702	109,934	12%	\$1,712
Brazil	1,295	67,064	82%	\$56
Netherlands	211	28,214	24%	\$1,362
Indonesia	1,240	26,515	45%	\$52
Spain	709	22,600	89%	\$95
Russia	360	21,657	85%	\$38
Germany	246	21,399	56%	\$662
India	261	20,446	54%	\$217
France	223	19,507	89%	\$183
Iran	491	18,450	62%	\$77
Turkey	362	18,090	82%	\$41
Poland	568	17,418	58%	\$218
Italy	363	12,231	70%	\$304
Ukraine	258	11,942	44%	\$40
China	93	10,427	45%	\$414
Romania	320	10,111	64%	\$50
Colombia	346	9,036	99%	\$1
South Korea	112	8,011	38%	\$331
Canada	157	7,550	49%	\$1,123
Argentina	242	6,634	95%	\$27
Australia	101	6,122	31%	\$1,287
Cuba	89	5,025	100%	\$0
Serbia	173	4,956	73%	\$60
Chile	121	4,157	69%	\$67
South Africa	99	4,145	25%	\$404
Mexico	132	4,063	88%	\$22
Portugal	102	3,407	74%	\$209
Croatia	118	3,352	82%	\$102
Bulgaria	59	3,324	29%	\$386

Country of Publication, Newly-Added (partial)

Country	Journals	Articles	%No-fee	\$/article
United States	154	12,339	16%	\$1,929
United Kingdom	176	10,850	25%	\$1,505
Brazil	220	8,596	91%	\$12
Indonesia	250	5,113	46%	\$23
Netherlands	44	4,607	13%	\$1,362
Ukraine	90	3,574	57%	\$29
Iran	92	3,411	54%	\$91
Russia	71	3,358	87%	\$6
Spain	78	2,694	77%	\$371
Poland	85	2,520	59%	\$171
Germany	30	2,402	88%	\$203
Turkey	70	2,259	91%	\$10
India	36	1,928	84%	\$75
China	40	1,917	77%	\$59
Romania	15	1,544	26%	\$231
Switzerland	43	1,491	17%	\$1,197
Italy	50	1,402	95%	\$29
Argentina	56	1,380	99%	\$0
Cuba	19	1,314	100%	\$0
Norway	15	1,196	99%	\$10
South Korea	20	1,013	46%	\$202
Colombia	51	1,011	100%	\$0
Pakistan	22	939	25%	\$164
Serbia	27	800	85%	\$58
Peru	18	662	100%	\$0
Bulgaria	14	661	28%	\$95
Portugal	29	619	100%	\$0
France	18	591	72%	\$242
Australia	14	551	31%	\$1,688
Iraq	16	509	14%	\$93
Canada	19	490	82%	\$261

4. Five-Year Comparisons

Is it useful to compare the journal universe of *DOAJ* as it was at the very end of 2016 (*GOAJ2*), 2017 (*GOAJ3*), 2018 (*GOA4*), 2019 (*GOA5*) and 2020 (*GOA6*)? Here's a brief attempt in four tables and ten graphs. The key facts are in chronological order; the ten graphs show each report as a separate line. Graphs show journals *active* during each year. *Note*: 2015 (*GOAJ*) has been dropped because it's anomalous—before *DOAJ* tightened its requirements and dropped a large number of journals.

Key Facts, *GOAJ2* (2011-2016)

GOAJ2	Journals	Articles	Art%	\$/Art
All	8,992	523,205		\$803
Fee	2,837	298,448	57%	\$1,407
No-fee	6,155	224,757	43%	
Biomed	2,562	188,194	36%	\$1,149
Fee	1,406	130,993	70%	\$1,651
No-fee	1,156	57,201	30%	
STEM	2,566	225,591	43%	\$847
Fee	1,037	145,565	65%	\$1,313
No-fee	1,529	80,026	35%	
H&SS	3,864	109,420	21%	\$114
Fee	394	21,890	20%	\$572
No-fee	3,470	87,530	80%	

Key facts, GOAJ3 (2013-2017)

GOAJ3	Journals	Articles	Art%	\$/Art
All	10,293	563,146		\$876
Fee	3,122	316,836	56%	\$1,557
No-fee	7,171	246,310	44%	
Biomed	2,694	200,835	36%	\$1,240
Fee	1,438	139,983	70%	\$1,778
No-fee	1,256	60,852	30%	
STEM	2,814	225,666	40%	\$1,011
Fee	1,126	151,363	67%	\$1,507
No-fee	1,688	74,303	33%	
H&SS	4,785	136,645	24%	\$118
Fee	558	25,490	19%	\$634
No-fee	4,227	111,155	81%	

Key Facts, GOA4 (2013-2018)

GOA4	Journals	Articles	Art%	\$/Art
All	12,180	711,670		\$913
Fee	3,506	413,826	58%	\$1,569
No-fee	8,674	297,844	42%	
Biomed	3,062	252,842	36%	\$1,296
Fee	1,519	177,287	70%	\$1,849
No-fee	1,543	75,555	30%	
STEM	3,181	289,522	41%	\$1,039
Fee	1,203	199,232	69%	\$1,510
No-fee	1,978	90,290	31%	
H&SS	5,937	169,306	24%	\$123
Fee	784	37,307	22%	\$558
No-fee	5,153	131,999	78%	

Key Facts, GOA5 (2014-2019)

GOA5	Journals	Articles	Art%	\$/Art
All	13,938	854,018		\$1,023
Fee	4,090	522,018	61%	\$1,673
No-fee	9,848	332,000	39%	
Biomed	3,387	298,675	35%	\$1,437
Fee	1,699	219,071	73%	\$1,959
No-fee	1,687	79,552	27%	
STEM	3,602	350,764	41%	\$1,186
Fee	1,412	255,098	73%	\$1,630
No-fee	2,190	95,666	27%	
H&SS	6,949	204,579	24%	\$137
Fee	978	47,797	23%	\$588
No-fee	5,971	156,782	77%	

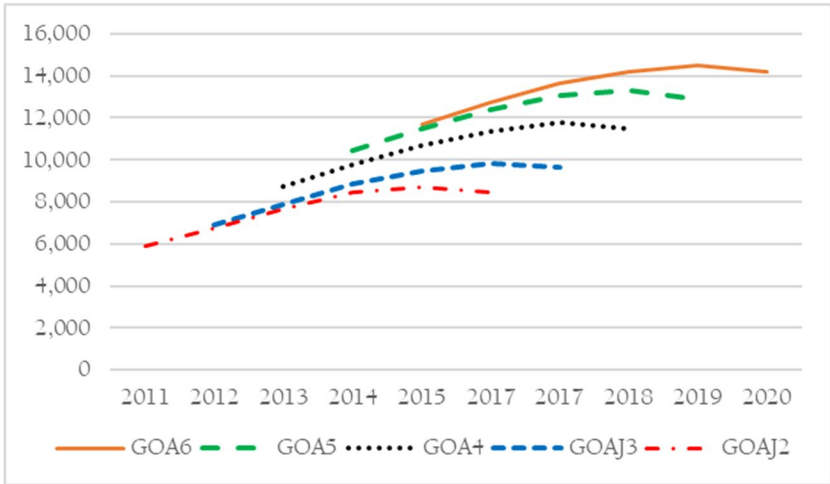
Key Facts, GOA6 (2015-2020): see page 3

Other than steady slow increases in average fee per article (except for a temporary decline among fee journals in H&SS), the patterns don't vary much.

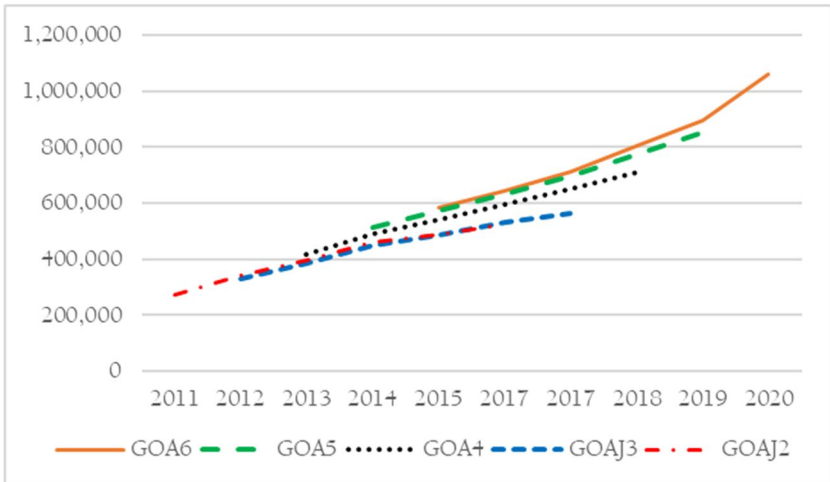
Ten-Year Graphs

These graphs show all five reports in each graph.

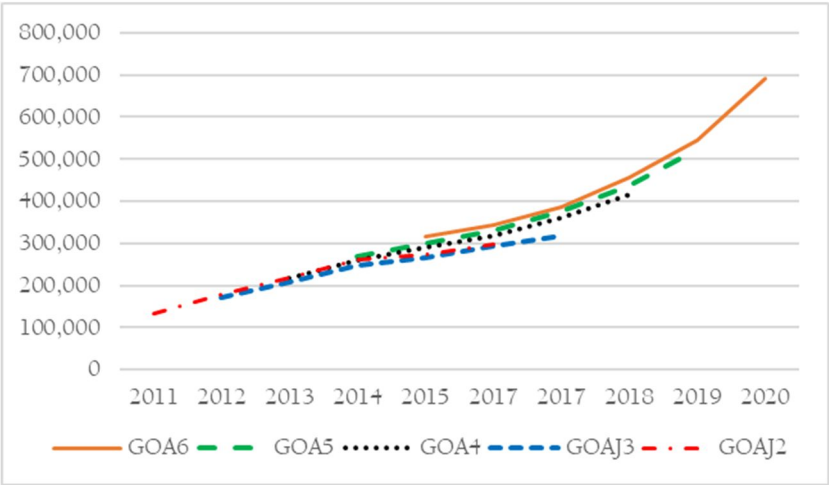
Active Journals, 2011-2020



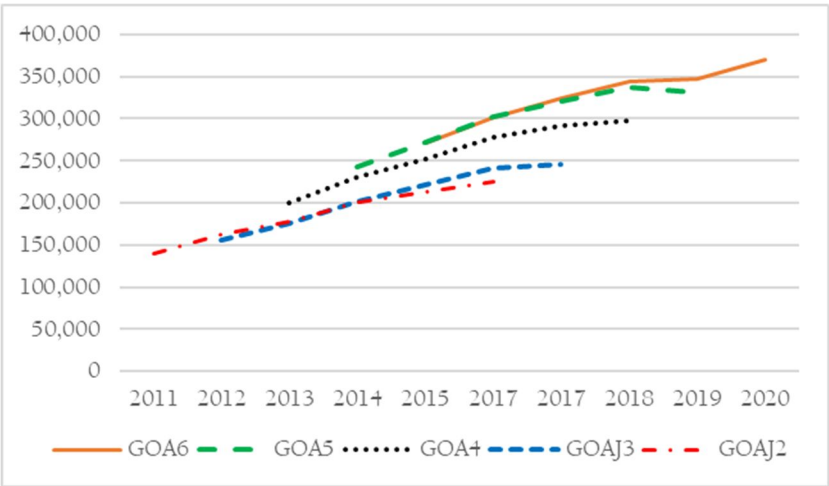
Articles, 2011-2020



Fee Articles, 2011-2020

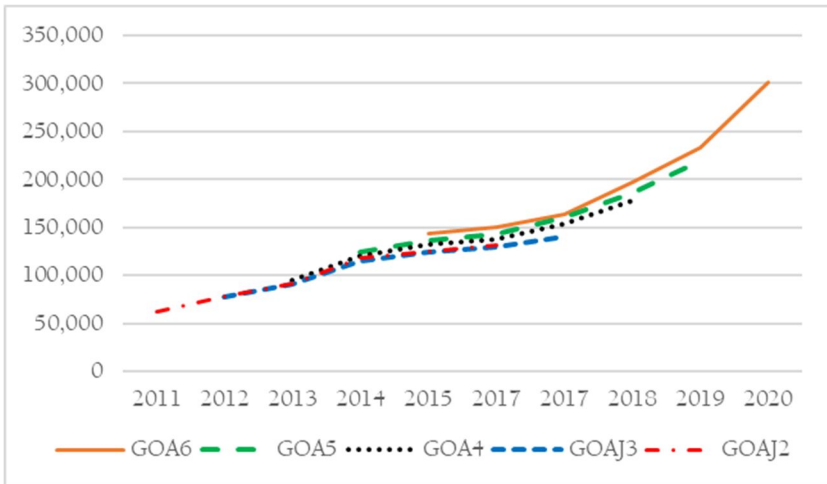


No-Fee Articles, 2011-2020



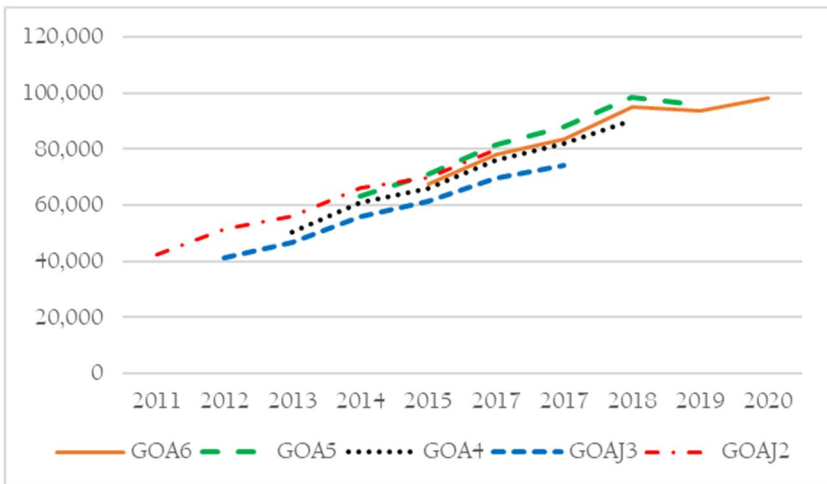
Note the lack of the usual latest-year downturn for no-fee articles, because of unusually strong 2020 activity and maybe faster reporting.

Fee Articles, Biomed, 2011-2020

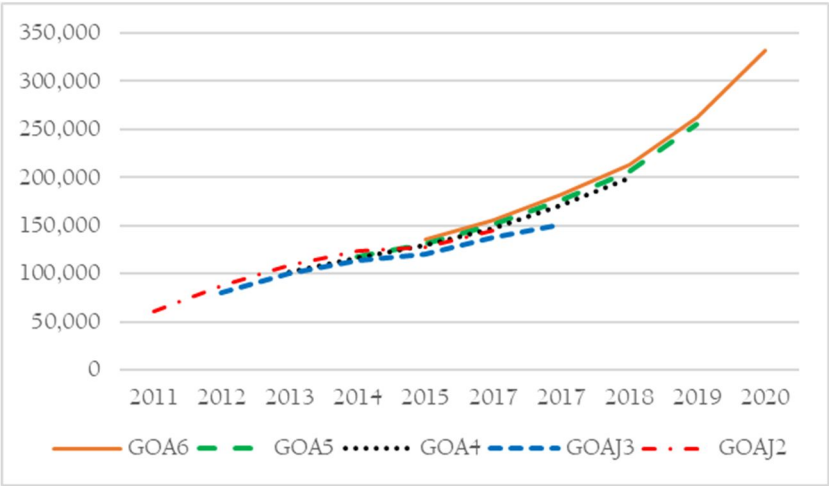


How much of the substantial increase in articles is Covid-19 related?
We may get a sense of this in GOA7...

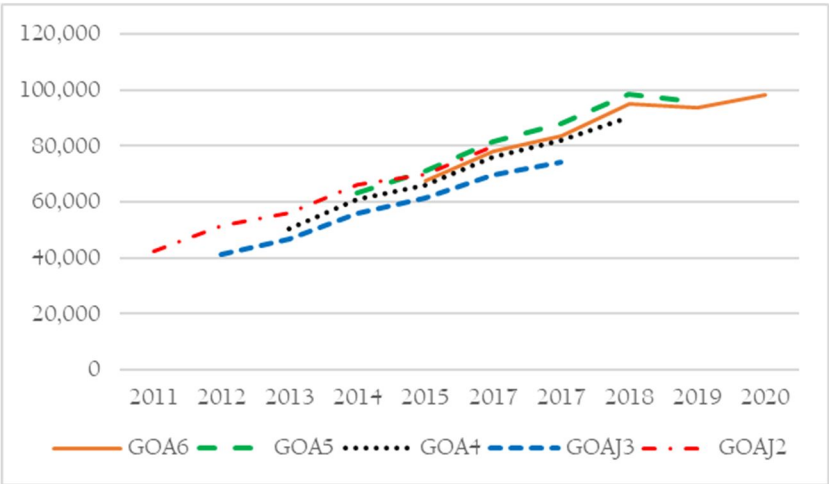
No-Fee Articles, Biomed, 2011-2020



Fee Articles, STEM, 2011-2020

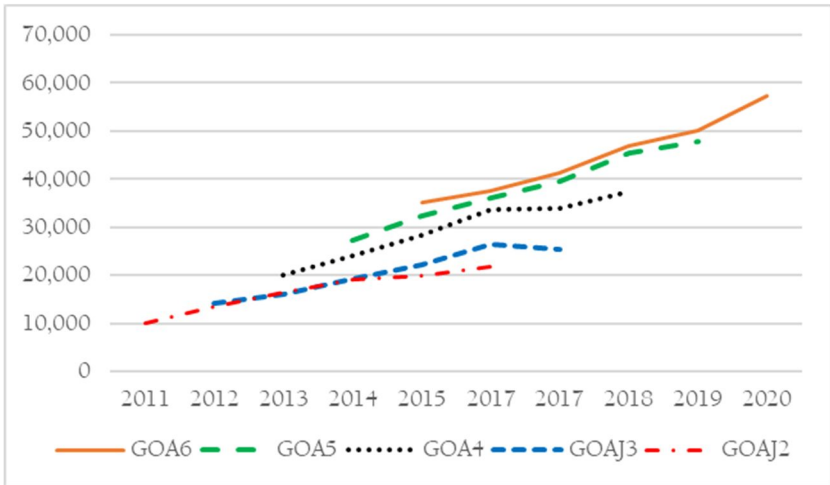


No-Fee Articles, STEM, 2011-2020

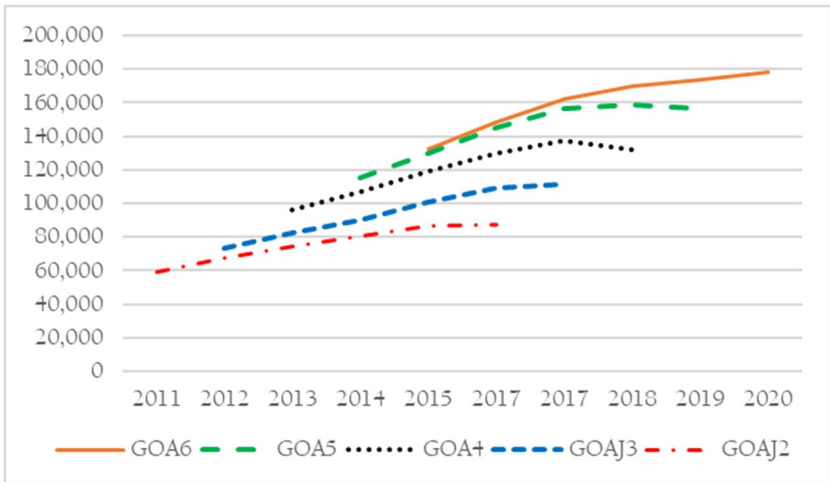


A few journals were reassigned from STEM to Biomed in GOA6, which may account for the anomalous curves here.

Fee Articles, H&SS, 2011-2020



No-Fee Articles, H&SS, 2011-2019



5. Journals by Article Volume

Journals, no matter how they’re funded, vary widely in number of articles per year. “Average articles per journal” is almost meaningless as an overall figure, becoming only slightly more meaningful as you narrow the frame of reference.

This chapter looks at journals by article volume, generally using the *peak* of the period 2015-2020. It should help clarify what’s out there and how pay-versus-free varies by article volume.

Gold Open Access Journals 2011-2015 discussed various ways to determine appropriate groups of journals by volume. There’s no “best” way, so for the sake of consistency this chapter (and the rest of the book) uses the same five-part breakdown as previous years: Largest (600 or more articles in peak year); Large (150 to 599 articles); Medium (60 to 149 articles); Small (20 to 59 articles); Smallest (1 to 19 articles). It also uses the same detailed breakdown as in the last three years.

Article Volume, Overall

	Journals	Articles	%No-fee	\$/article
Largest: 600+	229	405,094	8%	\$2,070
Large: 150-599	989	212,389	22%	\$1,328
Med.: 60-149	2,980	204,847	55%	\$537
Small: 20-59	7,962	210,220	75%	\$204
Smallest: 0-19	2,968	28,706	82%	\$125

The larger the journal, the higher the article fees are likely to be, the lower the percentage of no-fee articles—and the higher the growth from 2019 to 2020, from 9% for the smallest up to 34% for the largest.

The next table breaks down peak volume more narrowly. In each row, the peak number is the *lower* limit: thus, the two journals in the first row had *at least* 20,000 articles in their peak year (not always 2020). “Act. 20” is the number of journals publishing articles in 2020.

Article Volume, Detailed

Peak	Journals	Act. 20	Articles	%No-fee	\$/article
20,000	2	2	39,136	0.0%	\$1,864.23
2,000	52	51	210,329	8.4%	\$2,165.89
1,000	89	88	104,349	11.7%	\$2,100.22
800	33	33	22,701	13.9%	\$1,715.75
600	53	53	28,579	9.1%	\$1,813.34
400	148	147	60,611	11.0%	\$1,572.71
300	144	142	39,327	17.5%	\$1,474.60
200	320	313	62,115	26.4%	\$1,251.12
150	377	369	50,336	32.6%	\$1,015.24
125	368	360	38,363	46.8%	\$734.64
100	557	547	47,065	47.8%	\$640.78
80	741	724	50,558	57.0%	\$493.58
60	1,314	1,287	68,861	63.6%	\$387.76
50	1,049	1,014	43,516	69.9%	\$280.54
40	1,592	1,538	53,911	73.9%	\$220.46
30	2,282	2,183	58,989	76.3%	\$194.69
20	3,039	2,801	53,804	77.8%	\$137.70
15	1,513	1,345	18,377	81.3%	\$128.59
10	1,083	904	8,837	82.9%	\$110.19
5	356	263	1,467	81.7%	\$157.45
1	16	10	25	32.0%	\$613.70

This year, for the first time, two size categories averaged more than \$2,000 per article. This may be a good place to remind readers that \$/article *includes* no-fee articles unless fee and no-fee are specifically broken out. Thus, for journals with 5-9 articles in 2020, where 81.7% of the articles appear in no-fee journals, the average fee for those journals charging fees is actually \$861.87.

Profiles by Volume

The remainder of this chapter consists of brief profiles of each of the five volume categories. As always, Key Facts compares the smaller group to the overall universe.

Key Facts, Largest Journals (600+ Peak Articles)

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	229	405,094			\$2,070	72%
Fee	200	374,649	92%	42%	\$2,238	21%
No-fee	29	30,445	8%	-78%		
Biomed	115	143,165	35%	-5%	\$2,352	46%
Fee	103	134,410	94%	23%	\$2,506	19%
No-fee	12	8,755	6%	-74%		
STEM	95	248,523	61%	51%	\$1,959	40%
Fee	85	229,726	92%	20%	\$2,120	17%
No-fee	10	18,797	8%	-67%		
H&SS	19	13,406	3%	-85%	\$1,097	597%
Fee	12	10,513	78%	222%	\$1,398	117%
No-fee	7	2,893	22%	-71%		

Articles and Journals by Year, Largest

	2020	2019	2018	2017	2016	2015
Journals	228	226	224	218	211	207
%No-fee	12%	13%	13%	12%	12%	12%
Articles	405,094	311,316	250,394	197,839	169,624	153,765
%No-fee	8%	9%	13%	11%	12%	10%
Change	30%	24%	27%	17%	10%	

Key Facts shows *all* journals in a subset while some other tables show *active* journals. This segment is growing rapidly, as are average fees in all segments, while no-fee articles have dropped below 10%.

Key Facts, Large Journals (150-599 Peak Articles)

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	989	212,389			\$1,328	10%
Fee	708	166,064	78%	20%	\$1,699	-8%
No-fee	281	46,325	22%	-37%		
Biomed	530	122,173	58%	55%	\$1,689	5%
Fee	409	102,221	84%	10%	\$2,018	-4%
No-fee	121	19,952	16%	-31%		
STEM	306	65,052	31%	-25%	\$1,019	-27%
Fee	217	49,258	76%	-2%	\$1,346	-26%
No-fee	89	15,794	24%	6%		
H&SS	153	25,164	12%	-47%	\$379	141%
Fee	82	14,585	58%	138%	\$654	1%
No-fee	71	10,579	42%	-44%		

Articles and Journals by Year, Large

	2020	2019	2018	2017	2016	2015
Journals	971	967	948	923	883	838
%No-fee	28%	28%	29%	29%	29%	29%
Articles	212,389	170,940	155,401	139,866	131,095	121,111
%No-fee	22%	23%	24%	27%	28%	28%
Change	24%	10%	11%	7%	8%	

Fee journals and articles still predominate, but to a lesser extent—and while per-article costs are higher than usual overall and especially for all of H&SS, they're lower for STEM. (The H&SS situation is interesting: average fees for fee-charging journals are about average for H&SS, but fee articles are far more common than in smaller journals.) This volume segment is heavy on biomed, light on STEM and very light on H&SS. No-fee article percentages are declining over time. (Note that these are the same comments as for the last two years.)

Key Facts, Medium-sized Journals (60-149 Peak Articles)

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	2,980	204,847			\$537	-55%
Fee	1,250	91,806	45%	-31%	\$1,198	-35%
No-fee	1,730	113,041	55%	58%		
Biomed	1,068	80,587	39%	6%	\$830	-48%
Fee	563	43,859	54%	-29%	\$1,524	-28%
No-fee	505	36,728	46%	92%		
STEM	887	60,142	29%	-28%	\$587	-58%
Fee	471	33,393	56%	-28%	\$1,057	-42%
No-fee	416	26,749	44%	95%		
H&SS	1,025	64,118	31%	41%	\$122	-22%
Fee	216	14,554	23%	-7%	\$539	-16%
No-fee	809	49,564	77%	2%		

Articles and Journals by Year, Medium-sized

	2020	2019	2018	2017	2016	2015
Journals	2,918	2,925	2,851	2,766	2,643	2,452
%No-fee	58%	58%	60%	60%	61%	61%
Articles	204,847	183,621	176,149	163,807	151,870	137,814
%No-fee	55%	56%	58%	60%	60%	61%
Change	12%	4%	8%	8%	10%	

The first group with thousands of journals, with roughly the same article counts as large and small journals. Relatively low per-article costs across the board. Rich in H&SS, lean in STEM.

These journals are relatively slow-growing, although growth was strong in 2020; while no-fee articles are in the majority, that majority is shrinking slowly over time.

Key Facts, Small Journals (20 to 59 Peak Articles)

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	7,962	210,220			\$204	-83%
Fee	1,886	53,168	25%	-61%	\$809	-56%
No-fee	6,076	157,052	75%	114%		
Biomed	1,540	45,485	22%	-42%	\$514	-68%
Fee	647	18,898	42%	-45%	\$1,237	-41%
No-fee	893	26,587	58%	146%		
STEM	1,915	50,882	24%	-40%	\$301	-79%
Fee	652	18,651	37%	-52%	\$821	-55%
No-fee	1,263	32,231	63%	177%		
H&SS	4,507	113,853	54%	144%	\$38	-76%
Fee	587	15,619	14%	-44%	\$275	-57%
No-fee	3,920	98,234	86%	14%		

Articles and Journals by Year, Small

	2020	2019	2018	2017	2016	2015
Journals	7,536	7,689	7,513	7,257	6,771	6,219
%No-fee	76%	77%	78%	78%	79%	79%
Articles	210,220	199,199	191,180	183,610	168,677	150,834
%No-fee	75%	76%	77%	78%	79%	79%
Change	6%	4%	4%	9%	12%	

Most journals fall into this category—and three-quarters of the articles are in no-fee journals. Every segment is mostly no-fee articles. Not surprisingly, H&SS is more than twice as large a portion as overall. These journals are growing slowly, but still growing. Charges are low across the board.

Key Facts, Smallest Journals (Fewer than 20 Peak Articles)

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	2,968	28,706			\$125	-90%
Fee	541	5,231	18%	-72%	\$685	-63%
No-fee	2,427	23,475	82%	134%		
Biomed	390	3,500	12%	-67%	\$531	-67%
Fee	170	1,548	44%	-42%	\$1,201	-43%
No-fee	220	1,952	56%	134%		
STEM	688	6,405	22%	-45%	\$170	-88%
Fee	172	1,571	25%	-68%	\$695	-62%
No-fee	516	4,834	75%	231%		
H&SS	1,890	18,801	65%	195%	\$34	-79%
Fee	199	2,112	11%	-54%	\$300	-54%
No-fee	1,691	16,689	89%	17%		

Articles and Journals by Year, Smallest

	2020	2019	2018	2017	2016	2015
Journals	2,522	2,690	2,634	2,474	2,236	1,993
%No-fee	81%	82%	82%	83%	83%	84%
Articles	28,706	28,978	28,532	26,904	24,465	21,740
%No-fee	82%	83%	83%	83%	83%	84%
Change	-1%	2%	6%	10%	13%	

Mostly H&SS, mostly no-fee, and (slightly) fewer articles in 2020 than in 2019, possibly because journals add enough articles to move up to the Small category.

6. Fees and Maximum Revenue

It takes money to publish even the smallest journal. For small open access journals run out of a university library or department the costs may be so small as to be trivial.

You can find long lists of all the things publishers may do and long discussions of what constitutes reasonable pricing. This book doesn't say "here's what an article *should* cost" but does offer data on the maximum amount that journals are (or may be) getting from fees.

Fee Level, Overall

	Jour.	%Fee	%All	Articles	%Fee	%All
\$1,400+	1,583	35%	10%	498,585	72%	47%
\$600-\$1.399	867	19%	6%	79,198	11%	7%
\$200-\$599	645	14%	4%	48,715	7%	5%
\$0.01-\$199	1,490	32%	10%	64,420	9%	6%
No fee	10,543		70%	370,338		35%

The two "%Fee" columns show the level's percentage of all fee journals or articles. While nearly two-thirds of fee journals charge less than \$1,400, almost three-quarters of fee *articles* appear in the most expensive group.

Revenue Ranges

The next table, which includes only journals with fees, shows the number of journals and articles in each of a fairly large range of revenue segments. Except for modifications at the top of ranges to reflect reality, revenue brackets are the same as in previous years to provide comparability.

Revenue	Journals	Cum J	Articles	Art/J
\$10 to \$44.7 million	17	17	148,936	8,761
\$4 to \$9.99 million	42	59	100,182	2,385
\$2 to \$3.87 million	59	118	74,657	1,265
\$1 to \$1.99 million	101	219	59,878	593
\$750,000 to \$993,450	68	287	26,474	389
\$500,000 to \$748,600	109	396	27,856	256
\$400,000 to \$495,900	70	466	15,357	219
\$300,000 to \$399,300	138	604	26,135	189
\$250,000 to \$298,750	76	680	14,149	186
\$200,000 to \$249,400	108	788	14,282	132
\$150,000 to \$199,500	165	953	19,767	120
\$100,000 to \$149,475	273	1,226	26,128	96
\$75,000 to \$99,900	179	1,405	14,695	82
\$50,000 to \$74,971	294	1,699	19,346	66
\$40,000 to \$49,600	162	1,861	9,410	58
\$30,000 to \$39,090	209	2,070	10,602	51
\$25,000 to \$29,957	135	2,205	6,663	49
\$20,000 to \$24,985	141	2,346	6,660	47
\$15,000 to \$19,950	161	2,507	7,512	47
\$10,000 to \$14,994	227	2,734	10,869	48
\$7,500 to \$9,998	177	2,911	7,402	42
\$5,000 to \$7,470	190	3,101	6,611	35
\$2,500 to \$4,981	348	3,449	12,790	37
\$1,000 to \$2,486	522	3,971	15,239	29
\$0.19 to \$995	466	4,437	9,318	20
\$0 (fee but no 2020 articles)	148	4,585		

Last year, eleven journals potentially brought in \$10 million or more. This year, 17 journals did—and the top figure increased by \$6 million.

Detailed Fee Breakdown

Fees range from \$0.014 (based on stated exchange rates, and probably errors) to an astonishing \$6,000. The number of journals charging \$4,000 or more increased from 26 to 38.

Fee	Journals	Cum J	Articles	Art/J
\$4,000-\$6,000	38		17,994	474
\$3,000-\$3,990	119	157	31,388	264
\$2,500-\$2,990	265	422	97,008	366
\$2,250-\$2,490	224	646	82,916	370
\$2,000-\$2,248	261	907	99,788	382
\$1,750-\$1,999	263	1,170	107,794	410
\$1,500-\$1,745	289	1,459	50,792	176
\$1,250-\$1,493	253	1,712	25,398	100
\$1,000-\$1,245	272	1,984	26,976	99
\$750-\$999	308	2,292	23,018	75
\$600-\$749	158	2,450	14,711	93
\$400-\$592	226	2,676	18,743	83
\$300-\$399	194	2,870	14,973	77
\$200-\$298	225	3,095	14,999	67
\$100-\$199	439	3,534	22,178	51
\$0.014-\$97	1,051	4,585	42,242	40

The remainder of this chapter, and the rest of the project, uses the same fee breakdown used in previous editions and in the first table in this chapter.

Journals by Segment and Fee Level

	Biomed	STEM	H&SS
\$1,400+	1,024	499	60
\$600-\$1,399	361	358	148
\$200-\$599	225	246	174
\$0.01-\$199	282	494	714
No fee	1,751	2,294	6,498

Biomed dominates the most expensive journals—and very few H&SS journals have more than nominal fees.

Growth and Shrinkage, \$1,400+

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	687	45.9%	
Even, $\pm 24.99\%$	643	43.0%	88.9%
Shrank 25%+	166	11.1%	
Total	1,496		

This and the next four tables show only those journals that published articles in both 2019 and 2020. For the first time, more high-priced journals grew rapidly than stayed about the same.

Growth and Shrinkage, \$600-\$1,399

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	345	43.1%	
Even, $\pm 24.99\%$	348	43.4%	86.5%
Shrank 25%+	108	13.5%	
Total	801		

Also a high percentage of fast growth: 43% compared to 29% from 2018 to 2019.

Growth and Shrinkage, \$200-\$599

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	169	27.7%	
Even, $\pm 24.99\%$	360	59.0%	86.7%
Shrank 25%+	81	13.3%	
Total	610		

Growth and Shrinkage, \$0.014-\$199

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	367	26.1%	
Even, $\pm 24.99\%$	843	60.0%	86.1%
Shrank 25%+	196	13.9%	
Total	1,406		

More growth and less shrinkage than last year for these two levels.

Growth and Shrinkage, No-Fee

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	2,574	26.8%	
Even, $\pm 24.99\%$	5,607	58.4%	85.2%
Shrank 25%+	1,421	14.8%	
Total	9,602		

More than one-quarter fast growth in *all* segments.

The Big Nine and The Rest

A few publishers dominate revenue. There are nine publishers with potential 2020 OA fees of more than \$23 million each (up from \$15 million last year); combined, they represent 85% of the potential OA revenue with 48% of the articles and 15% of the journals.

The Big 9 changed slightly from last year, partly because I rechecked ownership. Holtzbrinck includes BMC. SpringerNature and Frontiers. Wiley includes Hindawi. Taylor & Francis includes Dove. Elsevier includes KeAi.

The rest of this chapter uses this book's standard tables and graphs to compare the Big 9 and the rest. As always, actual OA revenue may be considerably lower than the potential figures used here.

The Big Nine

Name	Articles	Revenue	\$/art
Holtzbrinck	144,141	\$363,493,070	\$2,521.79
MDPI	162,923	\$336,285,783	\$2,064.08
Wiley	48,516	\$109,287,404	\$2,252.61
Elsevier	69,176	\$101,677,561	\$1,469.84
Taylor & Francis	20,134	\$39,966,258	\$1,985.01
PLOS	20,426	\$38,543,925	\$1,887.00
IEEE	19,623	\$35,025,350	\$1,784.91
Oxford	12,146	\$32,251,184	\$2,655.29
SAGE	14,096	\$23,901,257	\$1,695.61
Total	511,181	\$1,080,431,792	\$2,113.60

Key Facts, Big 9

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	2,200	511,181			\$2,114	76%
Fee	1,867	482,035	94%	45%	\$2,241	21%
No-fee	333	29,146	6%	-84%		
Biomed	1,234	225,232	44%	18%	\$2,322	44%
Fee	1,099	212,742	94%	24%	\$2,458	16%
No-fee	135	12,490	6%	-77%		
STEM	764	266,797	52%	29%	\$1,989	42%
Fee	637	253,639	95%	23%	\$2,093	15%
No-fee	127	13,158	5%	-78%		
H&SS	202	19,152	4%	-83%	\$1,396	788%
Fee	131	15,654	82%	235%	\$1,708	165%
No-fee	71	3,498	18%	-76%		

Very few no-fee articles and very few H&SS articles—and even for H&SS, four-fifths involve fees. High fees across the board.

Key Facts, The Rest

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	12,928	550,075			\$358	-70%
Fee	2,717	208,865	38%	-42%	\$942	-49%
No-fee	10,211	341,210	62%	78%		
Biomed	2,409	169,678	31%	-17%	\$662	-59%
Fee	793	88,194	52%	-32%	\$1,273	-40%
No-fee	1,616	81,484	48%	102%		
STEM	3,127	164,207	30%	-26%	\$452	-68%
Fee	960	78,960	48%	-38%	\$939	-48%
No-fee	2,167	85,247	52%	127%		
H&SS	7,392	216,190	39%	77%	\$48	-70%
Fee	964	41,711	19%	-21%	\$246	-62%
No-fee	6,428	174,479	81%	7%		

More than 60% of articles are no-fee. There are roughly the same number of biomed and STEM articles, with only fee biomed articles exceeding \$1,000 per article.

Articles and Journals by Year, Big 9

	2020	2019	2018	2017	2016	2015
Journals	2,134	2,077	1,904	1,810	1,678	1,543
%No-fee	15%	15%	15%	14%	14%	14%
Articles	511,181	380,045	301,913	240,854	214,033	198,344
%No-fee	6%	6%	7%	8%	8%	7%
Change	35%	26%	25%	13%	8%	

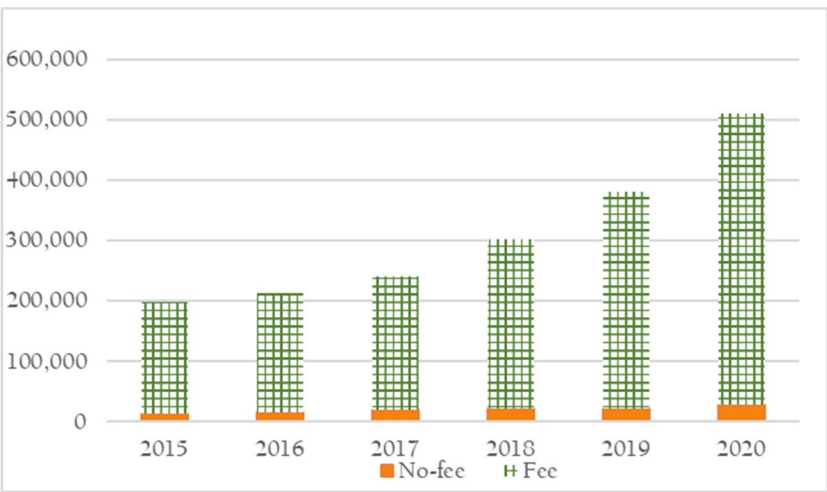
Rapid growth in the last three years, with relatively few new journals.

Articles and Journals by Year, The Rest

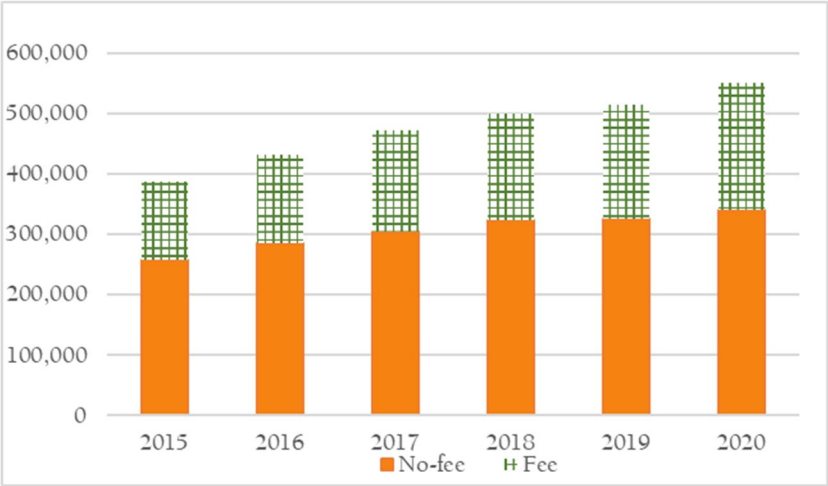
	2020	2019	2018	2017	2016	2015
Journals	12,041	12,420	12,266	11,828	11,066	10,166
%No-fee	78%	79%	79%	79%	80%	80%
Articles	550,075	514,009	499,743	471,172	431,698	386,920
%No-fee	62%	63%	65%	65%	66%	66%
Change	7%	3%	6%	9%	12%	

Growth has improved from last year.

Fee and No-Fee Articles by Year, Big 9



Fee and No-Fee Articles by Year, The Rest



I believe the two graphs speak eloquently for themselves.

Article Volume, Big 9

	Journals	Articles	%No-fee	\$/article
Largest: 600+	161	324,665	2%	\$2,285
Large: 150-599	440	111,165	7%	\$2,007
Med.: 60-149	620	50,593	17%	\$1,634
Small: 20-59	759	22,840	22%	\$1,338
Smallest: 0-19	220	1,918	19%	\$1,198

More than three out of five articles are in the largest (and most expensive) journals, although those are only one-fourteenth of the journals.

Article Volume, The Rest

	Journals	Articles	%No-fee	\$/article
Largest: 600+	68	80,429	28%	\$1,202
Large: 150-599	549	101,224	38%	\$583
Med.: 60-149	2,360	154,254	68%	\$177
Small: 20-59	7,203	187,380	81%	\$66
Smallest: 0-19	2,748	26,788	86%	\$48

The largest journals are still most expensive, but represent one-200th of the journals and 15% of the articles.

Fee Level, Big 9

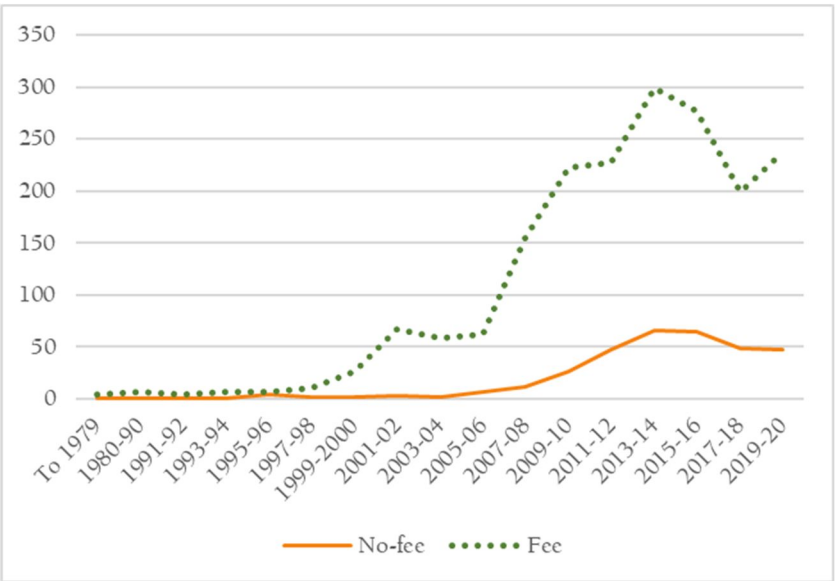
	Journals	%Fee	%All	Articles	%Fee	%All
\$1,400+	1,311	70%	60%	438,233	91%	86%
\$600-\$1.399	514	28%	23%	39,855	8%	8%
\$200-\$599	31	2%	1%	3,626	1%	1%
\$0.01-\$199	11	1%	1%	321	0%	0%
No fee	333		15%	29,146		6%

The portion of journals charging \$1,400 or more is now up to 60%—publishing 86% of the articles.

Fee Level, The Rest

	Journals	%Fee	%All	Articles	%Fee	%All
\$1,400+	272	10%	2%	60,352	29%	11%
\$600-\$1.399	353	13%	3%	39,343	19%	7%
\$200-\$599	614	23%	5%	45,089	22%	8%
\$0.01-\$199	1,479	54%	11%	64,099	31%	12%
No fee	10,210		79%	341,192		62%

Starting Date, Big 9



Starting Date, The Rest



Note very different vertical scales—and entirely different stories.

Fees and Revenue, Big 9

	Articles	Revenue	\$/article
\$1,400+	438,233	\$1,039,028,024	\$2,371
\$600-\$1.399	39,855	\$39,765,912	\$998
\$200-\$599	3,626	\$1,600,238	\$441
\$0.20-\$199	321	\$37,618	\$117
No fee	29,146		
Total	511,181	\$1,080,431,792	\$2,114

If the Big 9 eliminated fees on all of their journals that *don't* charge \$1,400 or more, it would reduce their potential revenue by 4%.

Fees and Revenue, The Rest

	Articles	Revenue	\$/article
\$1,400+	60,352	\$136,974,374	\$2,270
\$600-\$1.399	39,343	\$38,746,115	\$985
\$200-\$599	45,089	\$16,125,454	\$358
\$0.20-\$199	64,099	\$4,856,833	\$76
No fee	341,192		
Total	550,075	\$196,702,777	\$358

Region, Big 9

Region	Journals	Articles	%No-fee	\$/article
Western Europe	2,200	511,181	6%	\$2,114
Pacific/English	1,821	426,967	5%	\$2,191
Middle East	243	71,057	2%	\$1,933
Asia	116	10,043	59%	\$523
Eastern Europe	19	3,058	25%	\$809
Africa	1	56	0%	\$800

This table may or may not be meaningful.

Region, The Rest

Region	Journals	Articles	%No-fee	\$/article
Western Europe	2,736	129,082	61%	\$554
Latin America	2,951	118,182	87%	\$38
Eastern Europe	2,677	100,487	65%	\$106
Asia	2,296	80,725	47%	\$158
Pacific/English	922	66,297	31%	\$1,389
Middle East	1,142	47,461	67%	\$65
Africa	204	7,841	40%	\$272

Growth and Shrinkage, Big 9

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	1,000	48.9%	
Even, ±24.99%	816	39.9%	88.9%
Shrank 25%+	227	11.1%	
Total	2,043		

The usual reminder: only journals with articles in both 2019 and 2020 are included here and below. Note that almost half of the Big 9 journals are growing rapidly.

Growth and Shrinkage, The Rest

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	3,142	26.5%	
Even, ±24.99%	6,985	58.8%	85.3%
Shrank 25%+	1,745	14.7%	
Total	11,872		

Subject Tables

The next two pages show subject tables for the two groups. As usual, subjects are arranged by decreasing article counts.

There are a lot of interesting differences. The Big 9 now publishes *more* medical articles than everybody else and charges more than three times as much per article. It’s not the most expensive subject—that’s still psychology, where the Big 9 publish two-thirds as many articles as the rest, and charge 20 *times* as much per article. “Other Sciences,” which includes megajournals, is also interesting, with the Big 9 publishing nearly five times as many articles as everybody else and charging twice as much per article.

Six subjects average more than \$2,000 per article in the Big 9, with another 16 over \$1,000. None exceed \$1,224 for the rest, with only three over \$1,000.

Oh, and there don’t appear to be any journals I tagged as history from the Big 9—but it’s one of the larger H&SS fields for the rest.

Subjects, Big 9

Subject	Journals	Articles	%No-fee	\$/article
Medicine	1,052	177,682	7%	\$2,257
Other Sciences	30	63,130	1%	\$2,285
Biology	182	47,550	1%	\$2,562
Engineering	100	39,531	3%	\$1,811
Chemistry	62	37,985	1%	\$2,129
Ecology	121	36,416	4%	\$2,065
Physics	82	26,076	21%	\$1,584
Earth Sciences	84	16,891	14%	\$1,811
Agriculture	65	15,076	4%	\$1,984
Computer Science	92	9,880	5%	\$1,622
Zoology	51	9,359	2%	\$1,961
Mathematics	44	8,949	2%	\$1,869
Psychology	12	4,758	0%	\$2,681
Technology	33	3,504	12%	\$1,705
Miscellany	14	2,664	46%	\$587
Anthropology	26	2,586	9%	\$1,234
Economics	41	2,265	24%	\$963
Sociology	24	1,534	18%	\$1,270
Education	23	1,483	28%	\$872
Political Science	20	1,009	59%	\$501
Arts & Architecture	11	765	17%	\$1,049
Religion	2	722	0%	\$1,243
Law	11	510	9%	\$1,165
Media & Communications	4	342	11%	\$768
Philosophy	7	305	6%	\$1,575
Language & Literature	5	130	2%	\$1,219
Library Science	2	79	0%	\$1,326

Subjects, The Rest

Subject	Journals	Articles	%No-fee	\$/article
Medicine	2,172	151,520	51%	\$611
Education	951	32,324	81%	\$33
Economics	900	25,821	62%	\$85
Language & Literature	979	25,583	88%	\$20
Ecology	351	24,317	63%	\$296
Agriculture	503	22,069	49%	\$197
Anthropology	637	19,475	71%	\$84
Engineering	415	18,168	55%	\$306
Biology	237	18,158	27%	\$1,086
Chemistry	141	17,591	32%	\$635
Sociology	554	17,586	81%	\$45
Earth Sciences	422	15,240	65%	\$282
Physics	128	14,393	37%	\$1,224
History	495	13,904	92%	\$16
Other Sciences	190	13,061	37%	\$1,151
Political Science	461	12,600	89%	\$33
Law	459	12,545	89%	\$12
Computer Science	304	11,719	69%	\$262
Zoology	246	10,733	34%	\$263
Arts & Architecture	394	10,617	82%	\$65
Miscellany	227	9,757	76%	\$55
Mathematics	276	8,888	72%	\$153
Media & Communications	309	8,883	91%	\$39
Technology	151	8,028	67%	\$214
Religion	316	7,913	70%	\$79
Philosophy	286	7,862	95%	\$16
Psychology	256	7,108	74%	\$132
Library Science	168	4,212	98%	\$3

7. Publisher Category

Do the characteristics of open access journals vary depending on the type of publisher? This chapter explores that question, breaking serious gold OA journals down into four categories, based on the publisher's name as it appears in *DOAJ* and on known ownership patterns. The categories are:

- **Open access publishers:** Publishers that don't appear to publish subscription journals (and aren't owned by companies or groups that do) but do publish one or more OA journals. Journals that don't fit in another category are also included.
- **University, college or institute:** A university press falls into this category even if it seems to function as a traditional publisher.
- **Traditional publishers:** Companies and groups that publish subscription journals as well as OA journals.
- **Societies, associations and government agencies:** There aren't many government-published OA journals, not enough to create a separate category.

It's hard to compare this chapter with previous editions, because so many journals have moved from open access to traditional, either because of recent acquisitions (Wiley acquiring Hindawi) or recognizing earlier situations. This has more than doubled the number of journals from traditional publishers and groups (up 122%) and, along with strong growth, articles from this group (up 140%)—while growth patterns mean that, despite journals from open access publishers being down 34% from *GOA5*, the article count is only down 14%.

Note that the “overweighted subjects” tables in previous editions, never very meaningful, have been removed.

Publisher Category, Overall

Category	Journals	Articles	%No-fee	\$/article
Traditional	2,635	345,734	16%	\$1,953
Univ/college	9,103	314,920	73%	\$195
Open Access	1,940	288,770	15%	\$1,529
Society/govt	1,443	111,688	38%	\$886

The difference between the two largest categories by article and journal count could hardly be starker. Traditional publishers charge fees for 84% of articles, compared to 27% for university publishers—and the average fee for all articles is *ten times* as high as for universities.

Key Facts, Traditional Publishers

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	2,635	345,734			\$1,953	62%
Fee	1,821	291,706	84%	30%	\$2,314	25%
No-fee	814	54,028	16%	-55%		
Biomed	1,363	193,529	56%	50%	\$2,201	37%
Fee	1,107	173,635	90%	18%	\$2,453	16%
No-fee	256	19,894	10%	-57%		
STEM	859	131,685	38%	-6%	\$1,722	23%
Fee	578	105,195	80%	4%	\$2,156	19%
No-fee	281	26,490	20%	-12%		
H&SS	413	20,520	6%	-73%	\$1,088	592%
Fee	136	12,876	63%	157%	\$1,735	169%
No-fee	277	7,644	37%	-51%		

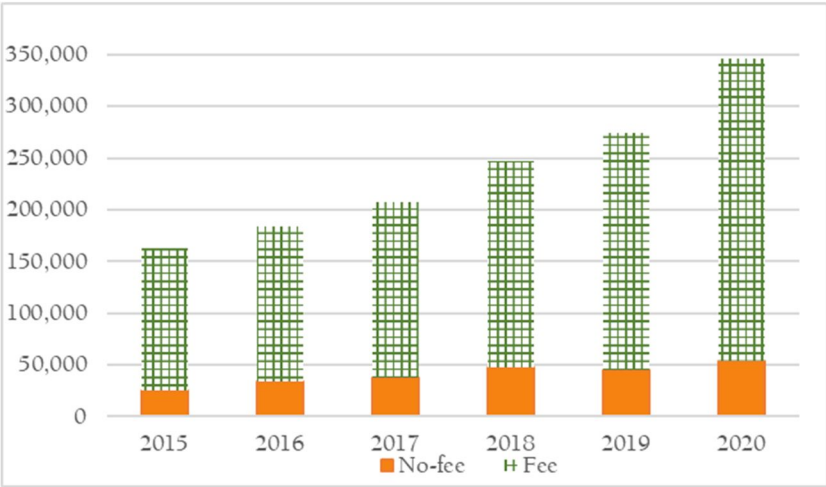
Very strong in biomed, very weak in H&SS, slightly weak in STEM. High fees across the board.

Articles and Journals by Year, Traditional Publishers

	2020	2019	2018	2017	2016	2015
Journals	2,491	2,472	2,298	2,188	2,037	1,868
%No-fee	29%	30%	31%	31%	31%	30%
Articles	345,734	273,643	246,662	207,713	184,150	162,833
%No-fee	16%	16%	19%	18%	18%	16%
Change	26%	11%	19%	13%	13%	

Substantial growth every year, especially strong in 2020.

Fee and No-Fee Articles by Year, Traditional Publishers



Article Volume, Traditional Publishers

	Journals	Articles	%No-fee	\$/article
Largest: 600+	106	157,520	13%	\$2,284
Large: 150-599	415	102,913	8%	\$2,000
Med.: 60-149	664	52,570	24%	\$1,462
Small: 20-59	1,077	29,660	38%	\$1,017
Smallest: 0-19	373	3,071	45%	\$819

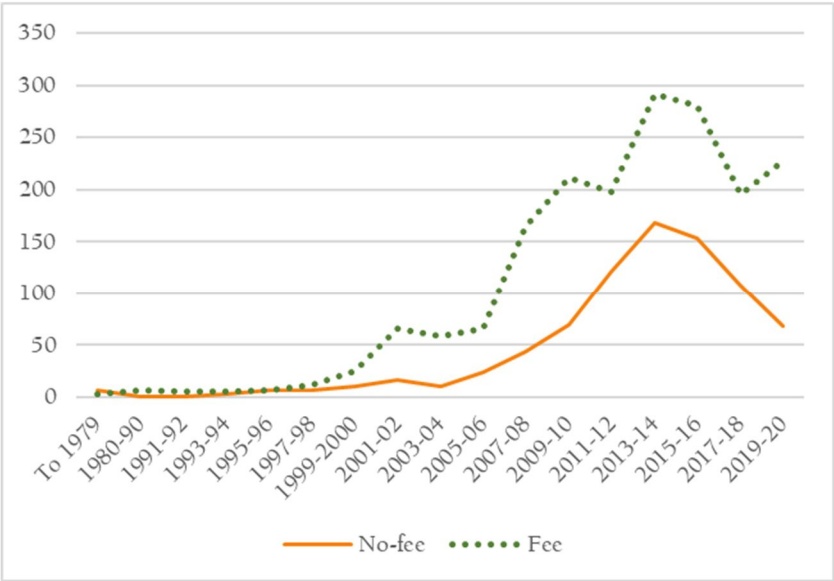
The largest journals have the highest fees.

Fee Level, Traditional Publishers

	Journals	%Fee	%All	Articles	%Fee	%All
\$1,400+	1,190	65%	45%	245,666	84%	71%
\$600-\$1.399	508	28%	19%	37,711	13%	11%
\$200-\$599	70	4%	3%	6,095	2%	2%
\$0.01-\$199	53	3%	2%	2,234	1%	1%
No fee	814		31%	54,028		16%

Seven out of ten articles are in the most expensive journals.

Starting Date, Traditional Publishers



The gold rush peaked around 2013-2014.

Fees and Revenue, Traditional Publishers

	Articles	Revenue	\$/article
\$1,400+	245,666	\$635,043,906	\$2,585
\$600-\$1.399	37,711	\$37,243,515	\$988
\$200-\$599	6,095	\$2,632,463	\$432
\$0.20-\$199	2,234	\$185,677	\$83
No fee	54,028		
Total	345,734	\$675,105,562	\$1,953

Region, Traditional Publishers

Region	Journals	Articles	%No-fee	\$/article
Western Europe	1,789	285,578	13%	\$2,098
Pacific/English	251	32,712	7%	\$1,973
Asia	145	11,393	59%	\$482
Eastern Europe	391	10,444	58%	\$305
Middle East	50	5,242	39%	\$489
Latin America	4	245	100%	\$0
Africa	5	120	48%	\$448

The fact that all Latin America OA journals from traditional publishers are no-fee is interesting, although (of course) region and country assignments depend on how publishers report to DOAJ.

Growth and Shrinkage, Traditional Publishers

Change 2019-20	Count	Percent	Cum%
Grew 25%+	400	38.1%	
Even, $\pm 24.99\%$	495	47.2%	85.3%
Shrank 25%+	154	14.7%	
Total	1,049		

Lots of growth, very little shrinkage.

Country of Publication, Traditional Publishers, Partial

This table shows 31 of the 46 countries for traditional publishers: those with more than 100 articles in 2020.

Country	Journals	Articles	%no-fee	\$/article
United Kingdom	1,292	173,826	4%	\$2,318
Switzerland	103	49,361	1%	\$2,733
United States	223	30,461	7%	\$1,971
Netherlands	196	30,436	20%	\$1,452
France	36	14,899	86%	\$224
Germany	89	10,668	66%	\$927
Poland	319	8,465	55%	\$338
China	86	7,065	69%	\$385
Spain	31	4,678	66%	\$489
Australia	26	2,150	7%	\$2,060
Saudi Arabia	9	1,957	29%	\$890
Turkey	20	1,652	70%	\$17
Egypt	8	1,101	18%	\$664
South Korea	14	1,053	29%	\$402
Italy	25	1,013	51%	\$1,077
India	14	979	74%	\$73
Hong Kong	6	832	11%	\$1,279
Taiwan	5	546	64%	\$372
Russia	9	541	59%	\$392
Iran	12	518	20%	\$64
Singapore	12	477	43%	\$773
Romania	18	428	91%	\$6
Japan	4	381	34%	\$1,665
Ireland	3	380	0%	\$1,694
Brazil	3	198	100%	\$0
Slovakia	13	195	100%	\$0
Greece	1	182	100%	\$0
Latvia	6	166	63%	\$75
Croatia	4	161	100%	\$0
Slovenia	5	132	55%	\$363
Norway	9	125	82%	\$117

Key Facts, University Publishers

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	9,110	315,064			\$195	-84%
Fee	1,551	85,824	27%	-58%	\$716	-61%
No-fee	7,559	229,240	73%	109%		
Biomed	1,100	66,760	21%	-43%	\$702	-56%
Fee	308	31,499	47%	-38%	\$1,488	-29%
No-fee	792	35,261	53%	122%		
STEM	2,059	77,332	25%	-40%	\$123	-91%
Fee	519	25,721	33%	-57%	\$371	-80%
No-fee	1,540	51,611	67%	192%		
H&SS	5,951	170,972	54%	145%	\$29	-81%
Fee	724	28,604	17%	-31%	\$176	-73%
No-fee	5,227	142,368	83%	10%		

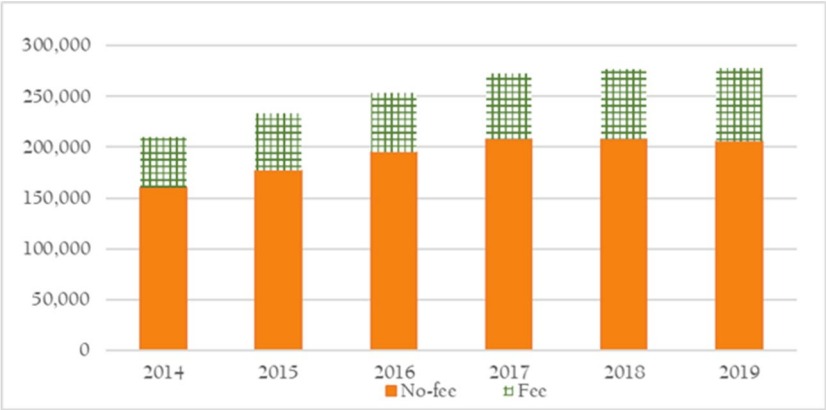
This category includes colleges and institutes, but *not* university-sponsored journals published by OA and traditional publishers. This second-largest category is home to most H&SS articles and most no-fee publishing: even in biomed a majority of articles did not involve fees, and other than in biomed, fees averaged less than \$400.

Articles and Journals by Year, University Publishers

	2020	2019	2018	2017	2016	2015
Journals	8,494	8,795	8,696	8,438	7,915	7,311
%No-fee	82%	83%	83%	83%	84%	84%
Articles	315,064	302,225	293,411	283,481	263,086	241,827
%No-fee	73%	73%	74%	75%	75%	74%
Change	4%	3%	4%	8%	9%	

Growing slowly every year—and, as usual, hundreds of very small journals didn't post any current-year articles in time to be counted.

Fee and No-Fee Articles by Year, University Publishers



Article Volume, University Publishers

	Journals	Articles	%No-fee	\$/article
Largest: 600+	22	17,205	25%	\$1,756
Large: 150-599	277	44,268	46%	\$368
Med.: 60-149	1,522	96,419	75%	\$104
Small: 20-59	5,313	137,070	84%	\$33
Smallest: 0-19	1,976	20,102	88%	\$21

Very few very large journals (even fewer than in GOA5)—and those are the only ones with average fees higher than \$400.

Fee Level, University Publishers

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	86	6%	1%	16,555	19%	5%
\$600-\$1.399	82	5%	1%	7,359	9%	2%
\$200-\$599	244	16%	3%	18,269	21%	6%
\$0.01-\$199	1,139	73%	13%	43,641	51%	14%
No fee	7,559		83%	229,240		73%

What few fee journals there are mostly have low fees.

Starting Date, University Publishers



After fairly steady growth (noting that 1980-90 can't be compared to 1991-92), faster growth starting in 2003 peaked in 2013-14.

Fees and Revenue, University Publishers

	Articles	Revenue	\$/article
\$1,400+	16,555	\$45,949,142	\$2,776
\$600-\$1.399	7,359	\$6,342,818	\$862
\$200-\$599	18,269	\$6,193,514	\$339
\$0.20-\$199	43,641	\$2,975,450	\$68
No fee	229,240		
Total	315,064	\$61,460,924	\$195

Region, University Journals

Region	Journals	Articles	%No-fee	\$/article
Latin America	2,572	97,946	90%	\$26
Eastern Europe	1,744	63,921	72%	\$49
Western Europe	1,676	59,322	69%	\$687
Asia	1,679	41,404	47%	\$76
Middle East	850	33,641	68%	\$57
Pacific/English	484	15,063	62%	\$632
Africa	105	3,767	53%	\$116

Latin America does the most no-fee publishing in general, as evidenced here—and except for Asia, most articles everywhere are no-fee.

Growth and Shrinkage, University Publishers

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	2,123	25.3%	
Even, $\pm 24.99\%$	5,066	60.3%	85.6%
Shrank 25%+	1,213	14.4%	
Total	8,402		

The usual large stable core, with much more growth than shrinkage.

Country of Publication, University Publishers

This table shows 32 countries with at least 1,500 2020 articles (all that will fit on one page, omitting another 79 countries with fewer articles). The leaders paint a very different picture than for traditional publishers, with none of the five countries with the most articles being among the top 19 and all but one of those five being at least 86% no-fee.

Country	Journals	Articles	%no-fee	\$/article
Brazil	1,284	60,444	87%	\$34
Indonesia	1,412	29,719	45%	\$48
Iran	508	18,681	64%	\$69
United Kingdom	206	18,042	18%	\$2,130
Russia	290	15,965	94%	\$15
Spain	600	15,593	95%	\$29
Ukraine	296	13,518	46%	\$36
United States	330	11,827	52%	\$805
Turkey	244	10,955	89%	\$24
Colombia	377	9,234	100%	\$1
Poland	262	8,084	71%	\$72
Romania	251	7,881	68%	\$37
Italy	254	7,189	92%	\$18
Argentina	248	6,523	97%	\$27
Cuba	90	5,403	100%	\$0
Germany	95	4,954	79%	\$91
Serbia	153	4,205	80%	\$44
Chile	123	4,010	72%	\$49
Mexico	134	3,872	91%	\$19
France	125	3,126	91%	\$114
Portugal	97	2,467	95%	\$11
Croatia	88	2,392	82%	\$98
Peru	72	2,315	93%	\$11
Iraq	55	2,307	23%	\$101
Norway	79	2,303	94%	\$47
Costa Rica	69	2,103	98%	\$1
China	18	2,086	38%	\$191
Pakistan	51	2,063	23%	\$171
Canada	95	2,062	97%	\$3
Ecuador	74	1,995	100%	\$0
Lithuania	72	1,732	62%	\$198
Malaysia	44	1,515	57%	\$109

Key Facts, OA Publishers

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	1,940	288,770			\$1,529	27%
Fee	842	244,117	85%	30%	\$1,809	-2%
No-fee	1,098	44,653	15%	-56%		
Biomed	768	101,784	35%	-5%	\$1,395	-13%
Fee	348	79,095	78%	2%	\$1,796	-15%
No-fee	420	22,689	22%	-6%		
STEM	503	161,112	56%	37%	\$1,807	29%
Fee	313	152,607	95%	23%	\$1,907	5%
No-fee	190	8,505	5%	-77%		
H&SS	669	25,874	9%	-60%	\$331	111%
Fee	181	12,415	48%	97%	\$691	7%
No-fee	488	13,459	52%	-31%		

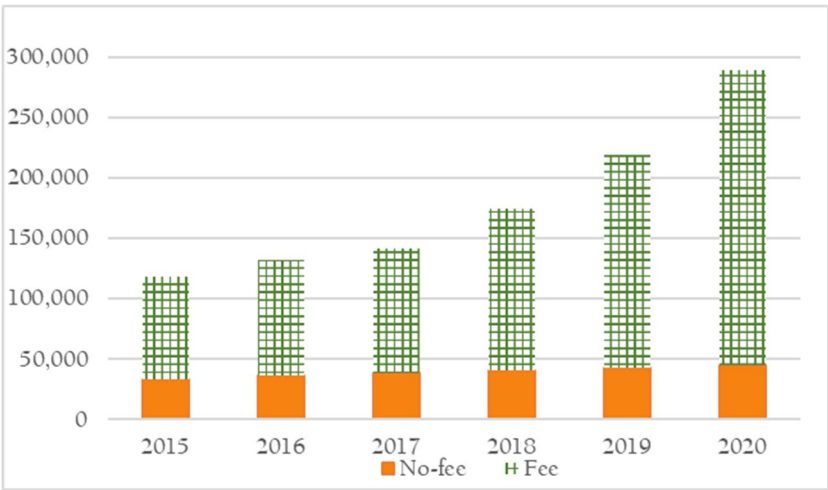
Heavy on fees and STEM; very light on H&SS, with a lot of biomed moved to traditional-publisher ownership.

Articles and Journals by Year, OA Publishers

	2020	2019	2018	2017	2016	2015
Journals	1,831	1,853	1,805	1,676	1,530	1,351
%No-fee	55%	56%	57%	57%	56%	56%
Articles	288,770	219,318	174,834	141,931	132,449	118,582
%No-fee	15%	20%	23%	27%	28%	28%
Change	32%	25%	23%	7%	12%	

Rapid growth since 2017 accelerated in 2020, as no-fee percentages continued to decline.

Fee and No-Fee Articles by Year, OA Publishers



Article Volume, OA Publishers

	Journals	Articles	%No-fee	\$/article
Largest: 600+	82	188,705	2%	\$2,015
Large: 150-599	183	41,847	24%	\$923
Med.: 60-149	458	32,017	45%	\$506
Small: 20-59	838	22,905	61%	\$268
Smallest: 0-19	379	3,296	75%	\$161

The largest journals dominate and charge very high fees (higher than last year, albeit in fewer journals still in this group).

Fee Level, OA Publishers

	Journals	%Fee	%All	Articles	%Fee	%All
\$1,400+	230	27%	12%	198,328	81%	69%
\$600-\$1.399	226	27%	12%	20,742	8%	7%
\$200-\$599	223	26%	11%	14,322	6%	5%
\$0.01-\$199	163	19%	8%	10,725	4%	4%
No fee	1,098		57%	44,653		15%

Still dominated by expensive journals, almost all with fees.

Starting Date, OA Publishers.



Here, the gold rush peaks in 2013-2014

Fees and Revenue, OA Publishers

	Articles	Revenue	\$/article
\$1,400+	198,328	\$414,234,538	\$2,089
\$600-\$1.399	20,742	\$21,214,465	\$1,023
\$200-\$599	14,322	\$5,133,650	\$358
\$0.20-\$199	10,725	\$1,082,772	\$101
No fee	44,653		
Total	288,770	\$441,665,425	\$1,529

Region, OA Publishers

Region	Journals	Articles	%No-fee	\$/article
Western Europe	729	188,111	6%	\$1,876
Pacific/English	233	45,560	11%	\$1,694
Asia	355	25,335	51%	\$236
Eastern Europe	307	16,620	45%	\$200
Middle East	172	7,539	74%	\$83
Africa	67	2,948	12%	\$521
Latin America	77	2,657	74%	\$51

Even with moves to traditional-publisher ownership, big OA publishers are mostly in Western Europe.

Growth and Shrinkage, OA Publishers

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	589	32.8%	
Even, $\pm 24.99\%$	943	52.6%	85.4%
Shrank 25%+	261	14.6%	
Total	1,793		

More than twice as many journals grew rapidly as shrank substantially—a much stronger showing than last year.

Country of Publication, OA Publishers, Partial

Of the 88 countries with OA-publisher journals, these 31 had at least 300 articles in 2020.

Country	Journals	Articles	%No-fee	\$/article
Switzerland	229	163,650	1%	\$2,053
United States	148	37,324	7%	\$1,727
India	230	19,107	56%	\$224
Germany	75	7,700	36%	\$557
United Kingdom	135	6,867	16%	\$1,401
Russia	103	6,698	68%	\$54
Turkey	133	6,404	78%	\$73
Canada	50	4,877	27%	\$1,706
Italy	97	3,685	48%	\$355
Australia	30	3,314	22%	\$1,322
South Africa	57	2,673	10%	\$563
Bulgaria	39	2,421	12%	\$494
Romania	36	2,037	16%	\$233
Poland	43	2,025	34%	\$257
China	19	1,968	9%	\$382
Spain	65	1,801	85%	\$52
Brazil	40	1,510	62%	\$44
Ukraine	35	1,382	60%	\$35
South Korea	12	1,032	24%	\$454
Malaysia	23	1,025	29%	\$225
Netherlands	14	968	50%	\$64
France	40	869	95%	\$5
Portugal	14	829	18%	\$816
Pakistan	13	776	70%	\$49
Indonesia	26	700	46%	\$39
Greece	12	668	34%	\$600
Iran	17	629	44%	\$171
Lithuania	10	587	15%	\$689
Colombia	8	332	100%	\$0
Estonia	9	325	20%	\$109
Chile	8	304	63%	\$225

Key Facts, Society Journals

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	1,443	111,688			\$886	-26%
Fee	371	69,271	62%	-5%	\$1,428	-23%
No-fee	1,072	42,417	38%	9%		
Biomed	412	32,837	29%	-21%	\$618	-62%
Fee	129	16,707	51%	-33%	\$1,215	-42%
No-fee	283	16,130	49%	106%		
STEM	470	60,875	55%	34%	\$1,274	-9%
Fee	187	49,076	81%	4%	\$1,580	-13%
No-fee	283	11,799	19%	-15%		
H&SS	561	17,976	16%	-27%	\$59	-62%
Fee	55	3,488	19%	-20%	\$305	-53%
No-fee	506	14,488	81%	7%		

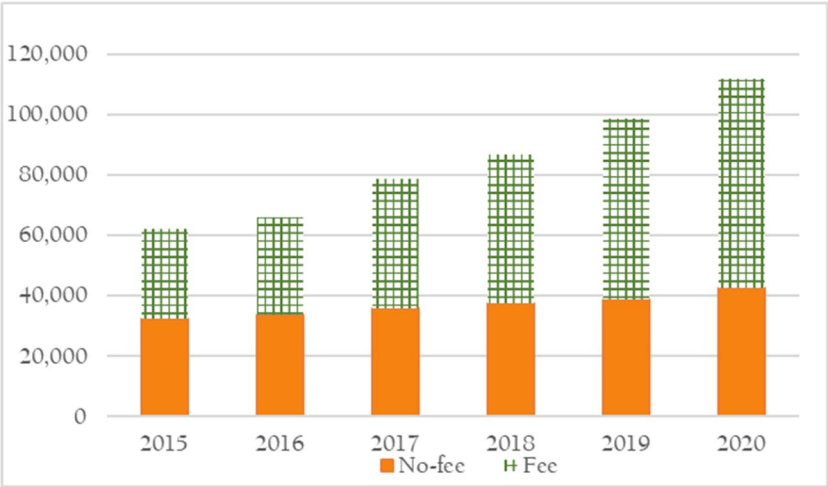
Strong in STEM, fairly strong in biomed, and unusual in that biomed is almost half no-fee. Includes a handful of government journals.

Articles and Journals by Year, Society Publishers

	2020	2019	2018	2017	2016	2015
Journals	1,359	1,377	1,371	1,336	1,262	1,179
%No-fee	73%	74%	75%	75%	75%	76%
Articles	111,688	98,868	86,749	78,901	66,046	62,022
%No-fee	38%	39%	43%	46%	51%	52%
Change	13%	14%	10%	19%	6%	

Active journals down a bit, article count up significantly—and the drift toward fee-based articles continues, albeit slowly.

Fee and No-Fee Articles by Year, Society Publishers



Article Volume, Society Publishers

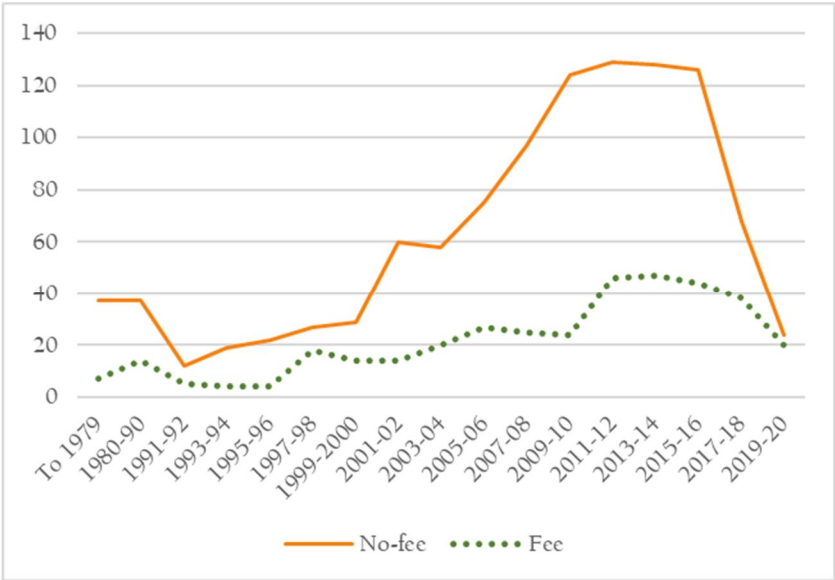
	Journals	Articles	%No-fee	\$/article
Largest: 600+	19	41,664	5%	\$1,641
Large: 150-599	114	23,361	32%	\$915
Med.: 60-149	336	23,841	60%	\$291
Small: 20-59	734	20,585	81%	\$103
Smallest: 0-19	240	2,237	85%	\$51

Fee Level, Society Publishers

	Journals	%Fee	%All	Articles	%Fee	%All
\$1,400+	77	21%	5%	38,036	55%	34%
\$600-\$1.399	51	14%	4%	13,386	19%	12%
\$200-\$599	108	29%	7%	10,029	14%	9%
\$0.01-\$199	135	36%	9%	7,820	11%	7%
No fee	1,072		74%	42,417		38%

While expensive journals have more articles than any other fee level, they're still outnumbered by no-fee articles—although the difference keeps falling.

Starting Date, Society Journals



Society journals started early and didn't have a single big peak.

Fees and Revenue, Society Publishers

	Articles	Revenue	\$/article
\$1,400+	38,036	\$80,774,812	\$2,124
\$600-\$1.399	13,386	\$13,711,228	\$1,024
\$200-\$599	10,029	\$3,766,066	\$376
\$0.20-\$199	7,820	\$650,552	\$83
No fee	42,417		
Total	111,688	\$98,902,658	\$886

A substantial revenue increase, and a significant increase in average cost.

Region, Society Publishers

Region	Journals	Articles	%No-fee	\$/article
Pacific/English	197	44,019	12%	\$1,777
Western Europe	363	23,038	50%	\$605
Latin America	298	17,334	71%	\$105
Asia	233	12,636	38%	\$267
Eastern Europe	235	9,502	63%	\$100
Middle East	89	4,097	50%	\$111
Africa	28	1,062	67%	\$140

Growth and Shrinkage, Society Journals

Change 2019-20	Count	Percent	Cum%
Grew 25%+	396	29.8%	
Even, $\pm 24.99\%$	753	56.6%	86.3%
Shrank 25%+	182	13.7%	
Total	1,331		

Another case where more than twice as many journals grew substantially as shrank significantly.

Country of Publication, Society Publishers

This table shows the 30 countries (out of 82 total) with at least 500 society/government articles.

Country	Journals	Articles	%no-fee	\$/article
United States	155	42,661	10%	\$1,829
Brazil	188	13,508	66%	\$131
United Kingdom	62	12,385	24%	\$914
South Korea	82	5,849	42%	\$291
Spain	91	3,222	84%	\$99
Iran	46	2,033	46%	\$147
Russia	29	1,811	85%	\$13
Italy	37	1,746	55%	\$708
Serbia	44	1,474	65%	\$103
Poland	29	1,364	36%	\$191
Turkey	35	1,338	75%	\$12
Argentina	43	1,335	88%	\$3
Romania	30	1,309	61%	\$77
China	10	1,225	24%	\$454
France	40	1,204	97%	\$8
Indonesia	48	1,149	44%	\$37
Pakistan	10	1,126	15%	\$115
Canada	30	1,036	74%	\$184
India	17	1,031	18%	\$207
Sweden	6	941	53%	\$905
Cuba	17	934	100%	\$0
Croatia	30	900	83%	\$119
Portugal	20	730	87%	\$11
Egypt	7	632	0%	\$223
Bulgaria	9	603	11%	\$222
Japan	19	597	25%	\$852
Nepal	12	566	90%	\$6
Ukraine	15	559	49%	\$19
Finland	25	542	91%	\$82
South Africa	13	513	70%	\$100

8. Country of Publication

The set of journals covered in this report comes from 122 different countries and named territorial entities. A table of those countries takes up four pages, and one table doesn't provide much information. This book includes a chapter on each region (and "region"), following this chapter. The book *Gold Open Access by Country 2015-2020* goes into more detail on each country's gold OA publishing.

Region, Overall

Region	Journals	Articles	%No-fee	\$/article
Western Europe	4,211	420,072	21%	\$1,612
Pacific/English	1,025	110,008	19%	\$1,495
Latin America	2,684	100,119	85%	\$42
Eastern Europe	2,417	92,234	68%	\$89
Asia	2,378	79,655	52%	\$173
Middle East	1,043	44,197	69%	\$80
Africa	180	7,733	37%	\$264

The order of regions from most prolific to least hasn't changed from 2018. The average cost per article in Latin America, already very low, continues to decrease.

The remainder of this chapter is three multipage tables: the first consisting of all 122 countries in alphabetic order; the second and third in decreasing number of 2020 articles and increasing cost per article (with the 37 all-no-fee countries sorted by decreasing article count) respectively. The second and third tables omit Kuwait and Palestine, each of which has a single gold OA journal with no 2020 articles. The new country for this report is the Åland Islands, an autonomous region of Finland with one OA journal publishing five articles in 2020.

Countries, Alphabetic Order

Country	Journals	Articles	%no-fee	\$/article
Åland Islands	1	5	100%	\$0
Albania	5	88	27%	\$144
Algeria	25	726	100%	\$0
Angola	3	71	100%	\$0
Argentina	298	8,014	96%	\$22
Armenia	3	87	36%	\$257
Australia	115	6,673	31%	\$1,321
Austria	57	1,470	77%	\$164
Azerbaijan	2	24	100%	\$0
Bahamas	1	12	100%	\$0
Bahrain	1	118	100%	\$0
Bangladesh	20	863	52%	\$49
Barbados	1	36	100%	\$0
Belarus	16	752	93%	\$10
Belgium	47	736	97%	\$30
Bolivia	6	122	100%	\$0
Bosnia and Herzegovina	26	886	72%	\$128
Brazil	1,515	75,660	83%	\$51
Bulgaria	73	3,985	28%	\$337
Cameroon	1	316	0%	\$208
Canada	176	8,040	51%	\$1,070
Chile	136	4,485	71%	\$62
China	133	12,344	50%	\$359
Colombia	397	10,047	99%	\$1
Costa Rica	71	2,141	98%	\$1
Croatia	125	3,511	83%	\$97
Cuba	108	6,339	100%	\$0
Cyprus	2	79	100%	\$0
Czechia	124	3,267	67%	\$166
Dem. Rep. Congo	1	67	100%	\$0
Denmark	28	446	95%	\$21

Country	Journals	Articles	%no-fee	\$/article
Dominican Republic	7	198	100%	\$0
Ecuador	76	2,040	100%	\$0
Egypt	34	2,213	14%	\$421
El Salvador	3	33	100%	\$0
Estonia	29	957	43%	\$154
Ethiopia	7	171	100%	\$0
Finland	50	1,409	83%	\$144
France	241	20,098	88%	\$184
Georgia	3	121	100%	\$0
Germany	276	23,801	59%	\$616
Ghana	6	119	61%	\$39
Greece	36	1,703	72%	\$237
Guam	1	1	0%	\$350
Guatemala	2	41	100%	\$0
Honduras	2	32	100%	\$0
Hong Kong	19	1,221	30%	\$1,000
Hungary	38	989	93%	\$71
Iceland	7	329	100%	\$0
India	297	22,374	56%	\$205
Indonesia	1,490	31,628	45%	\$48
Iran	583	21,861	60%	\$79
Iraq	56	2,351	22%	\$101
Ireland	17	668	43%	\$963
Israel	2	67	100%	\$0
Italy	413	13,633	72%	\$276
Japan	38	1,531	32%	\$954
Jordan	4	200	46%	\$96
Kazakhstan	4	173	68%	\$53
Kenya	5	290	18%	\$388
Kyrgyzstan	3	85	100%	\$0
Latvia	13	460	46%	\$399
Lebanon	2	114	14%	\$129

Country	Journals	Articles	%no-fee	\$/article
Libya	3	111	49%	\$180
Lithuania	84	2,320	51%	\$322
Luxembourg	3	26	100%	\$0
Malawi	1	38	100%	\$0
Malaysia	74	2,851	45%	\$155
Mali	1	24	0%	\$114
Malta	2	30	100%	\$0
Mexico	151	4,464	89%	\$20
Moldova	35	1,313	59%	\$38
Mongolia	4	84	55%	\$34
Montenegro	9	492	61%	\$73
Morocco	27	666	88%	\$18
Nepal	23	1,020	80%	\$19
Netherlands	255	32,821	23%	\$1,362
New Zealand	18	368	100%	\$0
Nicaragua	8	133	100%	\$0
Nigeria	9	753	6%	\$189
North Macedonia	11	348	70%	\$12
Norway	112	2,894	91%	\$79
Oman	6	291	100%	\$0
Pakistan	74	3,965	30%	\$131
Palestine	1	6	100%	\$0
Paraguay	21	432	100%	\$0
Peru	80	2,462	93%	\$10
Philippines	11	181	96%	\$4
Poland	653	19,938	58%	\$212
Portugal	131	4,026	78%	\$177
Puerto Rico	4	16	100%	\$0
Qatar	8	129	96%	\$39
Romania	335	11,655	59%	\$74
Russia	433	25,158	85%	\$33
Rwanda	1	30	100%	\$0

Country	Journals	Articles	%no-fee	\$/article
Saudi Arabia	15	2,194	33%	\$797
Serbia	200	5,756	75%	\$60
Singapore	18	574	48%	\$695
Slovakia	48	1,088	72%	\$53
Slovenia	57	1,516	93%	\$38
South Africa	109	4,399	25%	\$413
South Korea	132	9,024	39%	\$316
South Sudan	1	24	100%	\$0
Spain	787	25,294	88%	\$125
Sri Lanka	15	456	100%	\$0
Sweden	43	1,939	67%	\$553
Switzerland	356	213,601	1%	\$2,205
Syria	2	26	100%	\$0
Taiwan	31	1,550	49%	\$324
Thailand	27	909	83%	\$31
Tunisia	4	46	89%	\$15
Turkey	432	20,349	83%	\$38
Turkmenistan	1	8	100%	\$0
Ukraine	348	15,516	47%	\$37
United Arab Emirates	10	507	12%	\$190
United Kingdom	1,695	211,120	7%	\$2,190
United States	856	122,273	12%	\$1,734
Uruguay	28	677	100%	\$0
Venezuela	35	797	98%	\$9
Viet Nam	3	108	56%	\$19
Yemen	5	93	78%	\$32
Zimbabwe	1	46	100%	\$0

Countries, Decreasing Number of 2020 Articles

Country	Journals	Articles	%no-fee	\$/article
Switzerland	356	213,601	1%	\$2,205
United Kingdom	1,695	211,120	7%	\$2,190
United States	856	122,273	12%	\$1,734
Brazil	1,515	75,660	83%	\$51
Netherlands	255	32,821	23%	\$1,362
Indonesia	1,490	31,628	45%	\$48
Spain	787	25,294	88%	\$125
Russia	433	25,158	85%	\$33
Germany	276	23,801	59%	\$616
India	297	22,374	56%	\$205
Iran	583	21,861	60%	\$79
Turkey	432	20,349	83%	\$38
France	241	20,098	88%	\$184
Poland	653	19,938	58%	\$212
Ukraine	348	15,516	47%	\$37
Italy	413	13,633	72%	\$276
China	133	12,344	50%	\$359
Romania	335	11,655	59%	\$74
Colombia	397	10,047	99%	\$1
South Korea	132	9,024	39%	\$316
Canada	176	8,040	51%	\$1,070
Argentina	298	8,014	96%	\$22
Australia	115	6,673	31%	\$1,321
Cuba	108	6,339	100%	\$0
Serbia	200	5,756	75%	\$60
Chile	136	4,485	71%	\$62
Mexico	151	4,464	89%	\$20
South Africa	109	4,399	25%	\$413
Portugal	131	4,026	78%	\$177
Bulgaria	73	3,985	28%	\$337
Pakistan	74	3,965	30%	\$131

Country	Journals	Articles	%no-fee	\$/article
Croatia	125	3,511	83%	\$97
Czechia	124	3,267	67%	\$166
Norway	112	2,894	91%	\$79
Malaysia	74	2,851	45%	\$155
Peru	80	2,462	93%	\$10
Iraq	56	2,351	22%	\$101
Lithuania	84	2,320	51%	\$322
Egypt	34	2,213	14%	\$421
Saudi Arabia	15	2,194	33%	\$797
Costa Rica	71	2,141	98%	\$1
Ecuador	76	2,040	100%	\$0
Sweden	43	1,939	67%	\$553
Greece	36	1,703	72%	\$237
Taiwan	31	1,550	49%	\$324
Japan	38	1,531	32%	\$954
Slovenia	57	1,516	93%	\$38
Austria	57	1,470	77%	\$164
Finland	50	1,409	83%	\$144
Moldova	35	1,313	59%	\$38
Hong Kong	19	1,221	30%	\$1,000
Slovakia	48	1,088	72%	\$53
Nepal	23	1,020	80%	\$19
Hungary	38	989	93%	\$71
Estonia	29	957	43%	\$154
Thailand	27	909	83%	\$31
Bosnia and Herzegovina	26	886	72%	\$128
Bangladesh	20	863	52%	\$49
Venezuela	35	797	98%	\$9
Nigeria	9	753	6%	\$189
Belarus	16	752	93%	\$10
Belgium	47	736	97%	\$30
Algeria	25	726	100%	\$0

Country	Journals	Articles	%no-fee	\$/article
Uruguay	28	677	100%	\$0
Ireland	17	668	43%	\$963
Morocco	27	666	88%	\$18
Singapore	18	574	48%	\$695
United Arab Emirates	10	507	12%	\$190
Montenegro	9	492	61%	\$73
Latvia	13	460	46%	\$399
Sri Lanka	15	456	100%	\$0
Denmark	28	446	95%	\$21
Paraguay	21	432	100%	\$0
New Zealand	18	368	100%	\$0
North Macedonia	11	348	70%	\$12
Iceland	7	329	100%	\$0
Cameroon	1	316	0%	\$208
Oman	6	291	100%	\$0
Kenya	5	290	18%	\$388
Jordan	4	200	46%	\$96
Dominican Republic	7	198	100%	\$0
Philippines	11	181	96%	\$4
Kazakhstan	4	173	68%	\$53
Ethiopia	7	171	100%	\$0
Nicaragua	8	133	100%	\$0
Qatar	8	129	96%	\$39
Bolivia	6	122	100%	\$0
Georgia	3	121	100%	\$0
Ghana	6	119	61%	\$39
Bahrain	1	118	100%	\$0
Lebanon	2	114	14%	\$129
Libya	3	111	49%	\$180
Viet Nam	3	108	56%	\$19
Yemen	5	93	78%	\$32
Albania	5	88	27%	\$144

Country	Journals	Articles	%no-fee	\$/article
Armenia	3	87	36%	\$257
Kyrgyzstan	3	85	100%	\$0
Mongolia	4	84	55%	\$34
Cyprus	2	79	100%	\$0
Angola	3	71	100%	\$0
Dem. Rep. Congo	1	67	100%	\$0
Israel	2	67	100%	\$0
Tunisia	4	46	89%	\$15
Zimbabwe	1	46	100%	\$0
Guatemala	2	41	100%	\$0
Malawi	1	38	100%	\$0
Barbados	1	36	100%	\$0
El Salvador	3	33	100%	\$0
Honduras	2	32	100%	\$0
Malta	2	30	100%	\$0
Rwanda	1	30	100%	\$0
Luxembourg	3	26	100%	\$0
Syria	2	26	100%	\$0
Azerbaijan	2	24	100%	\$0
Mali	1	24	0%	\$114
South Sudan	1	24	100%	\$0
Puerto Rico	4	16	100%	\$0
Bahamas	1	12	100%	\$0
Turkmenistan	1	8	100%	\$0
Palestine	1	6	100%	\$0
Åland Islands	1	5	100%	\$0
Guam	1	1	0%	\$350

Countries, Increasing Average Fee per Article

Country	Journals	Articles	%no-fee	\$/article
Cuba	108	6,339	100%	\$0
Ecuador	76	2,040	100%	\$0
Algeria	25	726	100%	\$0
Uruguay	28	677	100%	\$0
Sri Lanka	15	456	100%	\$0
Paraguay	21	432	100%	\$0
New Zealand	18	368	100%	\$0
Iceland	7	329	100%	\$0
Oman	6	291	100%	\$0
Dominican Republic	7	198	100%	\$0
Ethiopia	7	171	100%	\$0
Nicaragua	8	133	100%	\$0
Bolivia	6	122	100%	\$0
Georgia	3	121	100%	\$0
Bahrain	1	118	100%	\$0
Kyrgyzstan	3	85	100%	\$0
Cyprus	2	79	100%	\$0
Angola	3	71	100%	\$0
Dem. Rep. Congo	1	67	100%	\$0
Israel	2	67	100%	\$0
Zimbabwe	1	46	100%	\$0
Guatemala	2	41	100%	\$0
Malawi	1	38	100%	\$0
Barbados	1	36	100%	\$0
El Salvador	3	33	100%	\$0
Honduras	2	32	100%	\$0
Malta	2	30	100%	\$0
Rwanda	1	30	100%	\$0
Luxembourg	3	26	100%	\$0
Syria	2	26	100%	\$0
Azerbaijan	2	24	100%	\$0

Country	Journals	Articles	%no-fee	\$/article
South Sudan	1	24	100%	\$0
Puerto Rico	4	16	100%	\$0
Bahamas	1	12	100%	\$0
Turkmenistan	1	8	100%	\$0
Palestine	1	6	100%	\$0
Åland Islands	1	5	100%	\$0
Costa Rica	71	2,141	98%	\$1
Colombia	397	10,047	99%	\$1
Philippines	11	181	96%	\$4
Venezuela	35	797	98%	\$9
Belarus	16	752	93%	\$10
Peru	80	2,462	93%	\$10
North Macedonia	11	348	70%	\$12
Tunisia	4	46	89%	\$15
Morocco	27	666	88%	\$18
Nepal	23	1,020	80%	\$19
Viet Nam	3	108	56%	\$19
Mexico	151	4,464	89%	\$20
Denmark	28	446	95%	\$21
Argentina	298	8,014	96%	\$22
Belgium	47	736	97%	\$30
Thailand	27	909	83%	\$31
Yemen	5	93	78%	\$32
Russia	433	25,158	85%	\$33
Mongolia	4	84	55%	\$34
Ukraine	348	15,516	47%	\$37
Moldova	35	1,313	59%	\$38
Slovenia	57	1,516	93%	\$38
Turkey	432	20,349	83%	\$38
Qatar	8	129	96%	\$39
Ghana	6	119	61%	\$39
Indonesia	1,490	31,628	45%	\$48

Country	Journals	Articles	%no-fee	\$/article
Bangladesh	20	863	52%	\$49
Brazil	1,515	75,660	83%	\$51
Slovakia	48	1,088	72%	\$53
Kazakhstan	4	173	68%	\$53
Serbia	200	5,756	75%	\$60
Chile	136	4,485	71%	\$62
Hungary	38	989	93%	\$71
Montenegro	9	492	61%	\$73
Romania	335	11,655	59%	\$74
Norway	112	2,894	91%	\$79
Iran	583	21,861	60%	\$79
Jordan	4	200	46%	\$96
Croatia	125	3,511	83%	\$97
Iraq	56	2,351	22%	\$101
Mali	1	24	0%	\$114
Spain	787	25,294	88%	\$125
Bosnia and Herzegovina	26	886	72%	\$128
Lebanon	2	114	14%	\$129
Pakistan	74	3,965	30%	\$131
Finland	50	1,409	83%	\$144
Albania	5	88	27%	\$144
Estonia	29	957	43%	\$154
Malaysia	74	2,851	45%	\$155
Austria	57	1,470	77%	\$164
Czechia	124	3,267	67%	\$166
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France	241	20,098	88%	\$184
Nigeria	9	753	6%	\$189
United Arab Emirates	10	507	12%	\$190
India	297	22,374	56%	\$205
Cameroon	1	316	0%	\$208

Country	Journals	Articles	%no-fee	\$/article
Poland	653	19,938	58%	\$212
Greece	36	1,703	72%	\$237
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Italy	413	13,633	72%	\$276
South Korea	132	9,024	39%	\$316
Lithuania	84	2,320	51%	\$322
Taiwan	31	1,550	49%	\$324
Bulgaria	73	3,985	28%	\$337
Guam	1	1	0%	\$350
China	133	12,344	50%	\$359
Kenya	5	290	18%	\$388
Latvia	13	460	46%	\$399
South Africa	109	4,399	25%	\$413
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Germany	276	23,801	59%	\$616
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Japan	38	1,531	32%	\$954
Ireland	17	668	43%	\$963
Hong Kong	19	1,221	30%	\$1,000
Canada	176	8,040	51%	\$1,070
Australia	115	6,673	31%	\$1,321
Netherlands	255	32,821	23%	\$1,362
United States	856	122,273	12%	\$1,734
United Kingdom	1,695	211,120	7%	\$2,190
Switzerland	356	213,601	1%	\$2,205

9. Africa

Key Facts, Africa

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	205	7,897			\$276	-77%
Fee	95	4,778	61%	-7%	\$455	-75%
No-fee	110	3,119	39%	13%		
Biomed	47	2,829	36%	-4%	\$349	-78%
Fee	26	2,194	78%	2%	\$450	-79%
No-fee	21	635	22%	-6%		
STEM	68	2,069	26%	-35%	\$122	-91%
Fee	20	677	33%	-58%	\$373	-80%
No-fee	48	1,392	67%	195%		
H&SS	90	2,999	38%	71%	\$312	98%
Fee	49	1,907	64%	161%	\$491	-24%
No-fee	41	1,092	36%	-52%		

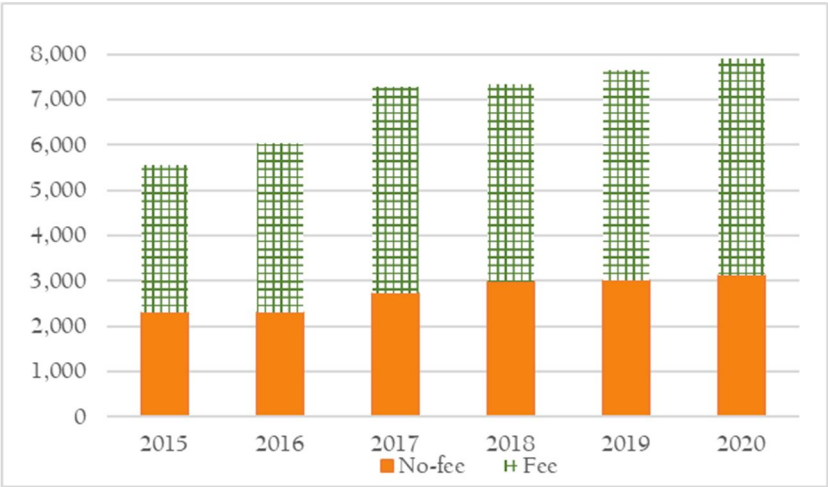
Relatively strong in H&SS, relatively light in STEM. Most H&SS articles involve fees, which is unusual. Africa excludes the Middle East.

Articles and Journals by Year, Africa

	2020	2019	2018	2017	2016	2015
Journals	194	199	190	188	178	165
%No-fee	53%	53%	53%	52%	52%	52%
Articles	7,897	7,646	7,348	7,292	6,048	5,558
%No-fee	39%	39%	41%	37%	38%	41%
Change	3%	4%	1%	21%	9%	

While there are slightly more no-fee than fee journals, fee-based articles are in the majority. Slow growth since 2017.

Fee and No-Fee Articles by Year, Africa



Article Volume, Africa

	Journals	Articles	%No-fee	\$/article
Largest: 600+	10	2,138	18%	\$300
Large: 150-599	37	2,167	41%	\$336
Med.: 60-149	114	3,173	49%	\$230
Small: 20-59	44	419	71%	\$187
Smallest: 0-19	205	7,897	39%	\$276

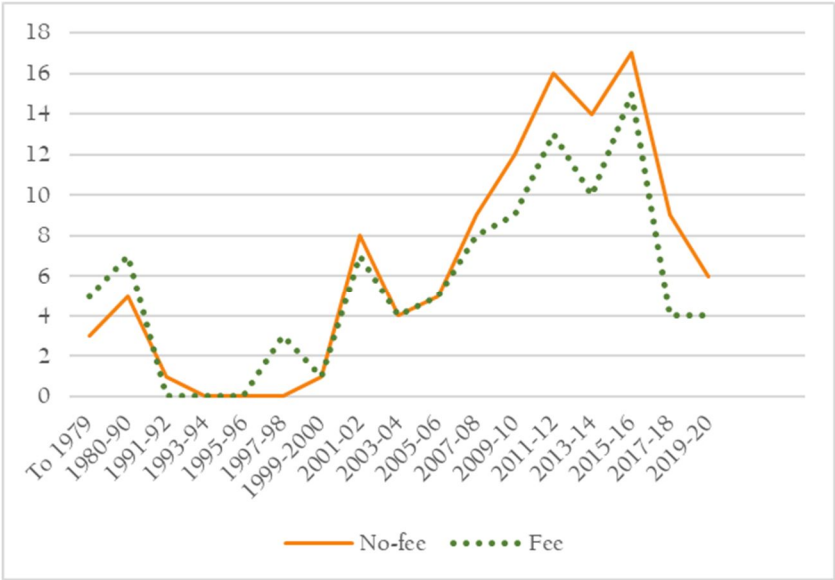
Very few largest journals—and a reminder that volume brackets are based on peak year volume (any year 2015 to 2020), not 2020 volume.

Fee Level, Africa

	Jour.	%Fee	%All	Articles	%Fee	%All
\$1,400+	1	1%	0%	6	0%	0%
\$600-\$1.399	41	43%	20%	1,752	37%	22%
\$200-\$599	23	24%	11%	2,074	43%	26%
\$0.01-\$199	30	32%	15%	946	20%	12%
No fee	110		54%	3,119		39%

Only one expensive journal, and a very small one at that. (The same comment applied last year.)

Starting Date, Africa



Fees and Revenue, Africa

	Articles	Revenue	\$/article
\$1,400+	6	\$9,000	\$1,500
\$600-\$1,399	1,752	\$1,409,351	\$804
\$200-\$599	2,074	\$640,039	\$309
\$0.20-\$199	946	\$117,461	\$124
No fee	3,119		
Total	7,897	\$2,175,851	\$276

Publisher Category, Africa

Category	Journals	Articles	%No-fee	\$/article
Univ/college	105	3,767	53%	\$116
Open Access	67	2,948	12%	\$521
Society/govt	28	1,062	67%	\$140
Traditional	5	120	48%	\$448

Universities take the lead—and traditional publishers are nearly absent.

Growth and Shrinkage, Africa

Change 2019-20	Count	Percent	Cum%
Grew 25%+	56	29.0%	
Even, $\pm 24.99\%$	101	52.3%	81.3%
Shrank 25%+	36	18.7%	
Total	193		

Country of Publication, Africa

Country	Journals	Articles	%no-fee	\$/article
South Africa	109	4,399	25%	\$413
Nigeria	9	753	6%	\$189
Algeria	25	726	100%	\$0
Morocco	27	666	88%	\$18
Cameroon	1	316	0%	\$208
Kenya	5	290	18%	\$388
Ethiopia	7	171	100%	\$0
Ghana	6	119	61%	\$39
Libya	3	111	49%	\$180
Angola	3	71	100%	\$0
Dem. Rep. Congo	1	67	100%	\$0
Tunisia	4	46	89%	\$15
Zimbabwe	1	46	100%	\$0
Malawi	1	38	100%	\$0
Rwanda	1	30	100%	\$0
Mali	1	24	0%	\$114
South Sudan	1	24	100%	\$0

Moved so that all subjects would fit on one page.

Subjects, Africa

Subject	Jour.	Articles	%No-fee	\$/article
Medicine	43	2,667	23%	\$361
Religion	10	601	0%	\$665
Economics	15	436	61%	\$227
Earth Sciences	6	423	90%	\$5
Education	11	392	28%	\$297
Other Sciences	7	343	100%	\$0
Ecology	13	300	60%	\$119
Language & Literature	11	284	52%	\$210
Anthropology	4	283	17%	\$181
Law	8	261	54%	\$84
Miscellany	8	235	80%	\$137
Agriculture	10	215	78%	\$45
Engineering	9	212	67%	\$144
Sociology	7	206	26%	\$289
Biology	4	162	12%	\$156
Technology	3	157	15%	\$156
Chemistry	6	155	64%	\$289
Political Science	6	123	40%	\$476
Zoology	4	115	0%	\$549
Computer Science	4	62	15%	\$519
Mathematics	4	57	79%	\$147
History	3	49	35%	\$87
Psychology	2	45	0%	\$704
Arts & Architecture	2	41	100%	\$0
Physics	2	30	0%	\$46
Philosophy	1	25	100%	\$0
Library Science	2	18	28%	\$88

Unusual: the subjects with the highest average cost per article are in H&SS (psychology and religion).

10. Asia

Key Facts, Asia

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	2,412	90,768			\$198	-84%
Fee	938	46,985	52%	-20%	\$383	-79%
No-fee	1,474	43,783	48%	38%		
Biomed	637	41,460	46%	23%	\$271	-83%
Fee	260	21,116	51%	-33%	\$532	-75%
No-fee	377	20,344	49%	106%		
STEM	696	26,382	29%	-28%	\$203	-86%
Fee	310	15,552	59%	-24%	\$344	-81%
No-fee	386	10,830	41%	80%		
H&SS	1,079	22,926	25%	14%	\$62	-60%
Fee	368	10,317	45%	85%	\$138	-79%
No-fee	711	12,609	55%	-27%		

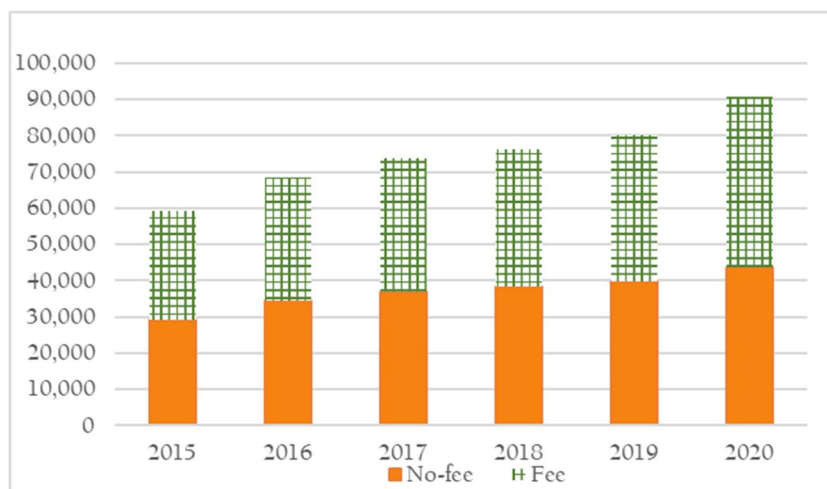
Very low costs across the board. Strong in biomed, weaker in STEM.

Articles and Journals by Year, Asia

	2020	2019	2018	2017	2016	2015
Journals	2,265	2,320	2,278	2,165	1,888	1,645
%No-fee	60%	61%	61%	61%	61%	60%
Articles	90,768	80,106	76,213	73,788	68,260	59,272
%No-fee	48%	50%	50%	50%	51%	49%
Change	13%	5%	3%	8%	15%	

Up considerably after two nearly-flat years

Fee and No-Fee Articles by Year, Asia



Article Volume, Asia

	Journals	Articles	%No-fee	\$/article
Largest: 600+	8	5,911	19%	\$456
Large: 150-599	112	22,104	32%	\$409
Med.: 60-149	341	23,518	52%	\$173
Small: 20-59	1,252	31,027	55%	\$66
Smallest: 0-19	699	8,208	75%	\$22

Fee Level, Asia

	Jour.	%Fee	%All	Articles	%Fee	%All
\$1,400+	23	2%	1%	2,871	6%	3%
\$600-\$1,399	52	6%	2%	6,344	14%	7%
\$200-\$599	145	15%	6%	15,510	33%	17%
\$0.01-\$199	718	77%	30%	22,260	47%	25%
No fee	1,474		61%	43,783		48%

Most growth appears to be in midpriced journals (\$200-\$1,399).

Starting Date, Asia



Fees and Revenue, Asia

	Articles	Revenue	\$/article
\$1,400+	2,871	\$5,360,191	\$1,867
\$600-\$1.399	6,344	\$5,741,600	\$905
\$200-\$599	15,510	\$5,422,653	\$350
\$0.20-\$199	22,260	\$1,483,191	\$67
No fee	43,783		
Total	90,768	\$18,007,635	\$198

Somewhat unusual: the top three levels of fees bring in nearly the same total revenues.

Publisher Category, Asia

Category	Journals	Articles	%No-fee	\$/article
Univ/college	1,679	41,404	47%	\$76
Open Access	355	25,335	51%	\$236
Society/govt	233	12,636	38%	\$267
Traditional	145	11,393	59%	\$482

Growth and Shrinkage, Asia

Change 2019-20	Count	Percent	Cum%
Grew 25%+	563	25.3%	
Even, $\pm 24.99\%$	1,414	63.6%	88.9%
Shrank 25%+	248	11.1%	
Total	2,225		

A common situation for 2020, rare in earlier reports: more than twice as many journals growing rapidly as are shrinking substantially.

Subjects, Asia

Medicine is the largest subject, which is not at all unusual—and Technology is the only subject averaging more than \$360, which is more unusual.

Subject	Journ.	Articles	%No-fee	\$/article
Medicine	579	39,231	50%	\$270
Economics	214	5,435	50%	\$131
Education	225	5,070	38%	\$54
Engineering	102	4,226	42%	\$206
Agriculture	111	3,997	23%	\$232
Ecology	62	3,297	38%	\$234
Language & Literature	133	2,794	54%	\$34
Earth Sciences	59	2,742	70%	\$146
Zoology	57	2,560	16%	\$359
Religion	144	2,256	63%	\$37
Biology	58	2,229	34%	\$275
Computer Science	90	2,207	51%	\$40
Technology	36	1,663	40%	\$511
Physics	38	1,642	41%	\$169
Other Sciences	46	1,531	62%	\$76
Law	74	1,438	67%	\$24
Mathematics	64	1,409	46%	\$37
Anthropology	48	1,293	68%	\$56
Chemistry	31	1,108	44%	\$75
Sociology	46	915	68%	\$20
Political Science	48	890	73%	\$79
Miscellany	23	783	60%	\$12
Arts & Architecture	25	518	83%	\$10
Psychology	34	503	53%	\$63
Media & Communications	26	422	58%	\$42
Library Science	17	278	91%	\$5
History	15	219	75%	\$20
Philosophy	7	112	100%	\$0

Country of Publication, Asia

Country	Journals	Articles	%No-fee	\$/article
Indonesia	1,490	31,628	45%	\$48
India	297	22,374	56%	\$205
China	133	12,344	50%	\$359
South Korea	132	9,024	39%	\$316
Pakistan	74	3,965	30%	\$131
Malaysia	74	2,851	45%	\$155
Taiwan	31	1,550	49%	\$324
Japan	38	1,531	32%	\$954
Hong Kong	19	1,221	30%	\$1,000
Nepal	23	1,020	80%	\$19
Thailand	27	909	83%	\$31
Bangladesh	20	863	52%	\$49
Singapore	18	574	48%	\$695
Sri Lanka	15	456	100%	\$0
Philippines	11	181	96%	\$4
Viet Nam	3	108	56%	\$19
Kyrgyzstan	3	85	100%	\$0
Mongolia	4	84	55%	\$34

Indonesia excels at small, inexpensive journals, with almost two-thirds of all *DOAJ*-listed journals in the region (61.8%) but only 35% of the articles. Japan and Hong Kong stand out for relatively expensive articles (compared to other Asian countries, that is).

11. Eastern Europe

Key Facts, Eastern Europe

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	2,677	100,487			\$106	-91%
Fee	578	34,735	35%	-47%	\$305	-83%
No-fee	2,099	65,752	65%	88%		
Biomed	396	20,063	20%	-46%	\$153	-90%
Fee	119	7,615	38%	-50%	\$403	-81%
No-fee	277	12,448	62%	161%		
STEM	888	35,045	35%	-14%	\$158	-89%
Fee	225	13,198	38%	-51%	\$421	-77%
No-fee	663	21,847	62%	173%		
H&SS	1,393	45,379	45%	104%	\$44	-72%
Fee	234	13,922	31%	26%	\$143	-78%
No-fee	1,159	31,457	69%	-8%		

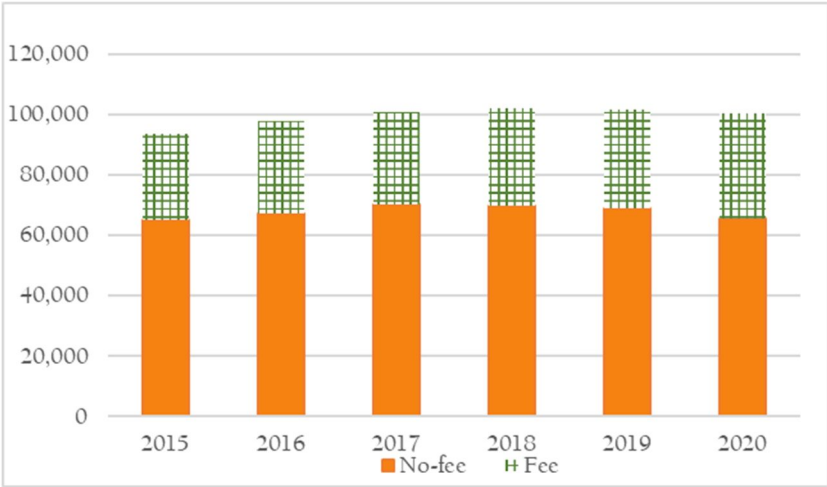
Low fees, two-thirds no-fee articles. Very strong in H&SS; somewhat lean in STEM and quite lean in biomed.

Articles and Journals by Year, Eastern Europe

	2020	2019	2018	2017	2016	2015
Journals	2,428	2,554	2,539	2,442	2,334	2,139
%No-fee	77%	78%	79%	79%	80%	80%
Articles	100,487	101,780	101,933	100,922	98,017	93,774
%No-fee	65%	68%	69%	70%	68%	69%
Change	-1%	0%	1%	3%	5%	

9% more articles than in GOA5 because there are 11% more journals; articles for *this* set of journals essentially flat since 2016.

Fee and No-Fee Articles by Year, Eastern Europe



Article Volume, Eastern Europe

	Journals	Articles	%No-fee	\$/article
Largest: 600+	10	3,399	22%	\$72
Large: 150-599	130	18,170	43%	\$211
Med.: 60-149	652	38,972	63%	\$117
Small: 20-59	1,445	36,511	80%	\$51
Smallest: 0-19	440	3,435	91%	\$30

Only large journals average more than \$200.

Fee Level, Eastern Europe

	Journals	%Fee	%All	Articles	%Fee	%All
\$1,400+	5	1%	0%	414	1%	0%
\$600-\$1.399	66	11%	2%	5,371	15%	5%
\$200-\$599	160	28%	6%	10,123	29%	10%
\$0.01-\$199	347	60%	13%	18,827	54%	19%
No fee	2,099		78%	65,752		65%

Almost no expensive articles; most fee articles cost nominal amounts.

Starting Date, Eastern Europe



Rapid growth starting 2005, peaking 2013-2014.

Fees and Revenue, Eastern Europe

	Articles	Revenue	\$/article
\$1,400+	414	\$846,556	\$2,045
\$600-\$1.399	5,371	\$4,858,062	\$904
\$200-\$599	10,123	\$3,556,078	\$351
\$0.20-\$199	18,827	\$1,344,002	\$71
No fee	65,752		
Total	100,487	\$10,604,698	\$106

Very little revenue from expensive journals, most from the two mid-range categories.

Publisher Category, Eastern Europe

Category	Journals	Articles	%No-fee	\$/article
Univ/college	1,742	63,879	72%	\$49
Open Access	307	16,620	45%	\$200
Traditional	391	10,444	58%	\$305
Society/govt	235	9,502	63%	\$100

Universities and colleges dominate, which isn't unusual.

Growth and Shrinkage, Eastern Europe

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	494	20.6%	
Even, $\pm 24.99\%$	1,492	62.1%	82.7%
Shrank 25%+	416	17.3%	
Total	2,402		

Even in this region, more journals grew substantially than shrank substantially, but the difference is much smaller than for some regions.

Subjects, Eastern Europe

As was also true in GOA4 and GOA5, even medicine is inexpensive—but not as cheap as last year. Only zoology averages more than \$250 per article.

Subject	Jour.	Articles	%No-fee	\$/article
Medicine	332	17,532	64%	\$150
Economics	275	9,469	49%	\$86
Agriculture	131	6,543	60%	\$144
Engineering	142	6,183	57%	\$187
Language & Literature	189	5,280	90%	\$15
Anthropology	142	4,910	52%	\$65
Sociology	95	4,351	62%	\$35
Political Science	124	4,220	84%	\$9
Earth Sciences	130	3,489	82%	\$72
History	94	3,206	81%	\$37
Computer Science	88	3,088	83%	\$66
Ecology	89	3,070	46%	\$221
Education	90	2,760	62%	\$45
Biology	64	2,531	48%	\$171
Mathematics	88	2,495	79%	\$135
Other Sciences	34	2,464	38%	\$184
Law	80	2,288	85%	\$15
Zoology	54	2,233	38%	\$323
Philosophy	71	2,191	90%	\$27
Technology	55	2,135	67%	\$83
Chemistry	45	2,022	60%	\$241
Arts & Architecture	64	1,748	78%	\$47
Miscellany	38	1,464	60%	\$24
Psychology	43	1,440	69%	\$37
Physics	32	1,323	85%	\$109
Religion	30	959	87%	\$68
Media & Communications	30	611	87%	\$12
Library Science	28	482	97%	\$1

Country of Publication, Eastern Europe

Country	Journals	Articles	%No-fee	\$/article
Russia	433	25,158	85%	\$33
Poland	653	19,938	58%	\$212
Ukraine	348	15,516	47%	\$37
Romania	335	11,655	59%	\$74
Serbia	200	5,756	75%	\$60
Bulgaria	73	3,985	28%	\$337
Croatia	125	3,511	83%	\$97
Czechia	124	3,267	67%	\$166
Lithuania	84	2,320	51%	\$322
Slovenia	57	1,516	93%	\$38
Moldova	35	1,313	59%	\$38
Slovakia	48	1,088	72%	\$53
Hungary	38	989	93%	\$71
Estonia	29	957	43%	\$154
Bosnia and Herzegovina	26	886	72%	\$128
Belarus	16	752	93%	\$10
Montenegro	9	492	61%	\$73
Latvia	13	460	46%	\$399
North Macedonia	11	348	70%	\$12
Kazakhstan	4	173	68%	\$53
Georgia	3	121	100%	\$0
Albania	5	88	27%	\$144
Armenia	3	87	36%	\$257
Cyprus	2	79	100%	\$0
Azerbaijan	2	24	100%	\$0
Turkmenistan	1	8	100%	\$0

12. Latin America

Key Facts, Latin America

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	2,951	118,182			\$38	-97%
Fee	171	15,231	13%	-80%	\$295	-84%
No-fee	2,780	102,951	87%	150%		
Biomed	379	24,750	21%	-44%	\$98	-94%
Fee	46	5,529	22%	-71%	\$437	-79%
No-fee	333	19,221	78%	226%		
STEM	590	24,188	20%	-50%	\$73	-95%
Fee	97	7,612	31%	-59%	\$232	-87%
No-fee	493	16,576	69%	200%		
H&SS	1,982	69,244	59%	164%	\$4	-97%
Fee	28	2,090	3%	-88%	\$146	-77%
No-fee	1,954	67,154	97%	28%		

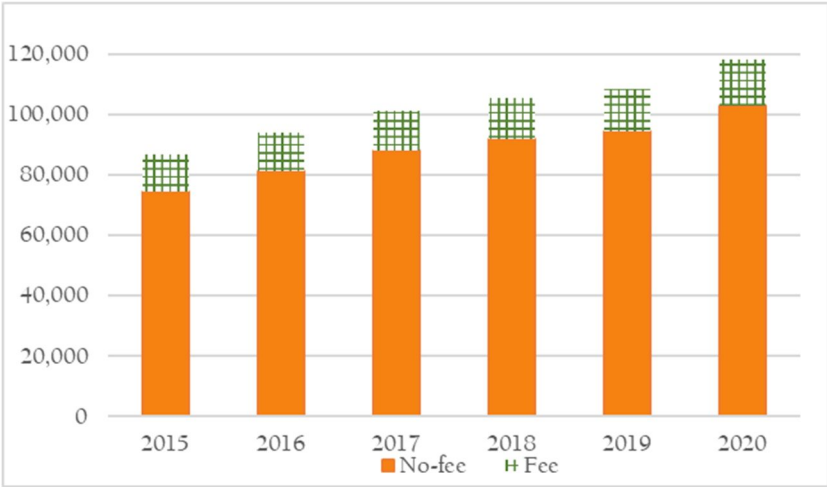
Very strong in H&SS. That “-97%” in the top right corner almost tells the Latin America OA story by itself: fees are rare and low.

Articles and Journals by Year, Latin America

	2020	2019	2018	2017	2016	2015
Journals	2,793	2,881	2,869	2,819	2,726	2,586
%No-fee	94%	94%	94%	94%	94%	94%
Articles	118,182	108,626	105,527	101,218	93,894	86,860
%No-fee	87%	87%	87%	87%	87%	86%
Change	9%	3%	4%	8%	8%	

Growth is improving after two slow years.

Fee and No-Fee Articles by Year, Latin America



Article Volume, Latin America

	Journals	Articles	%No-fee	\$/article
Largest: 600+	4	2,637	43%	\$116
Large: 150-599	99	17,430	64%	\$133
Med.: 60-149	634	42,913	86%	\$34
Small: 20-59	1,821	50,966	97%	\$8
Smallest: 0-19	393	4,236	99%	\$2

Large journals have the highest fees—but relatively few articles and still 64% no-fee.

Fee Level, Latin America

	Journals	%Fee	%All	Articles	%Fee	%All
\$1,400+	5	3%	0%	554	4%	0%
\$600-\$1.399	11	6%	0%	1,581	10%	1%
\$200-\$599	55	32%	2%	4,719	31%	4%
\$0.01-\$199	100	58%	3%	8,377	55%	7%
No fee	2,780		94%	102,951		87%

So little publishing at significant fees that little comment is needed.

Starting Date, Latin America



Fees and Revenue, Latin America

	Articles	Revenue	\$/article
\$1,400+	554	\$964,100	\$1,740
\$600-\$1.399	1,581	\$1,111,223	\$703
\$200-\$599	4,719	\$1,681,136	\$356
\$0.20-\$199	8,377	\$732,230	\$87
No fee	102,951		
Total	118,182	\$4,488,689	\$38

Most article growth has been no-fee (\$200-\$599 actually declined from GOA5 to this report, as did the average cost per article in other brackets). Average cost per article overall, not surprisingly, is much lower than for any other region and \$4 lower than in GOA5.

Publisher Category, Latin America

Category	Journals	Articles	%No-fee	\$/article
Univ./college	2,567	97,844	90%	\$26
Society/govt	298	17,334	71%	\$105
Open Access	77	2,657	74%	\$51
Traditional	4	245	100%	\$0

Very little done by OA publishers, even less by traditional publishers.

Growth and Shrinkage, Latin America

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	785	28.3%	
Even, $\pm 24.99\%$	1,649	59.4%	87.6%
Shrank 25%+	344	12.4%	
Total	2,778		

Considerably more than twice as much growth as shrinkage.

Subjects, Latin America

A number of interesting items: low costs across the board, with only chemistry breaking the \$200 mark and *seven* subjects—including two of the biggest—with no fees at all. Note that sociology and arts & architecture do have some fee articles, but so few that the average fee per article is less than \$0.50 (\$0.40 and \$0.15 respectively).

Subject	Jrn	Articles	%No-fee	\$/article
Medicine	349	22,995	79%	\$90
Education	281	14,247	98%	\$5
Language & Literature	199	7,477	100%	\$0
Agriculture	133	6,231	51%	\$121
Sociology	192	5,811	99%	\$0
Anthropology	171	5,534	92%	\$12
Economics	202	4,909	99%	\$2
Law	155	4,627	100%	\$0
History	130	4,493	100%	\$0
Miscellany	86	4,151	76%	\$19
Earth Sciences	96	4,044	84%	\$15
Political Science	141	3,923	98%	\$7
Media & Communications	92	3,471	100%	\$0
Ecology	84	2,892	76%	\$25
Arts & Architecture	93	2,883	98%	\$0
Zoology	51	2,741	33%	\$186
Philosophy	87	2,705	99%	\$19
Psychology	82	2,662	97%	\$2
Engineering	79	2,634	85%	\$36
Biology	30	1,755	59%	\$192
Other Sciences	45	1,752	87%	\$8
Library Science	40	1,375	100%	\$0
Mathematics	35	1,355	95%	\$4
Religion	31	976	100%	\$0
Technology	23	798	95%	\$1
Chemistry	16	745	32%	\$279
Computer Science	18	521	100%	\$0
Physics	10	475	75%	\$96

Country of Publication, Latin America

Country	Journals	Articles	%no-fee	\$/article
Brazil	1,515	75,660	83%	\$51
Colombia	397	10,047	99%	\$1
Argentina	298	8,014	96%	\$22
Cuba	108	6,339	100%	\$0
Chile	136	4,485	71%	\$62
Mexico	151	4,464	89%	\$20
Peru	80	2,462	93%	\$10
Costa Rica	71	2,141	98%	\$1
Ecuador	76	2,040	100%	\$0
Venezuela	35	797	98%	\$9
Uruguay	28	677	100%	\$0
Paraguay	21	432	100%	\$0
Dominican Republic	7	198	100%	\$0
Nicaragua	8	133	100%	\$0
Bolivia	6	122	100%	\$0
Guatemala	2	41	100%	\$0
Barbados	1	36	100%	\$0
El Salvador	3	33	100%	\$0
Honduras	2	32	100%	\$0
Puerto Rico	4	16	100%	\$0
Bahamas	1	12	100%	\$0
Guam	1	1	0%	\$350

Brazil dominates; only two other countries with more than five articles have less than 93% no-fee publishing—and, to be sure, thirteen are entirely no-fee.

13. Middle East

Key Facts, Middle East

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	1,161	50,519			\$110	-91%
Fee	293	17,897	35%	-46%	\$311	-83%
No-fee	868	32,622	65%	85%		
Biomed	402	20,677	41%	10%	\$122	-92%
Fee	79	5,838	28%	-63%	\$434	-79%
No-fee	323	14,839	72%	202%		
STEM	328	14,470	29%	-29%	\$130	-91%
Fee	90	5,922	41%	-47%	\$317	-83%
No-fee	238	8,548	59%	159%		
H&SS	431	15,372	30%	37%	\$75	-52%
Fee	124	6,137	40%	64%	\$188	-71%
No-fee	307	9,235	60%	-21%		

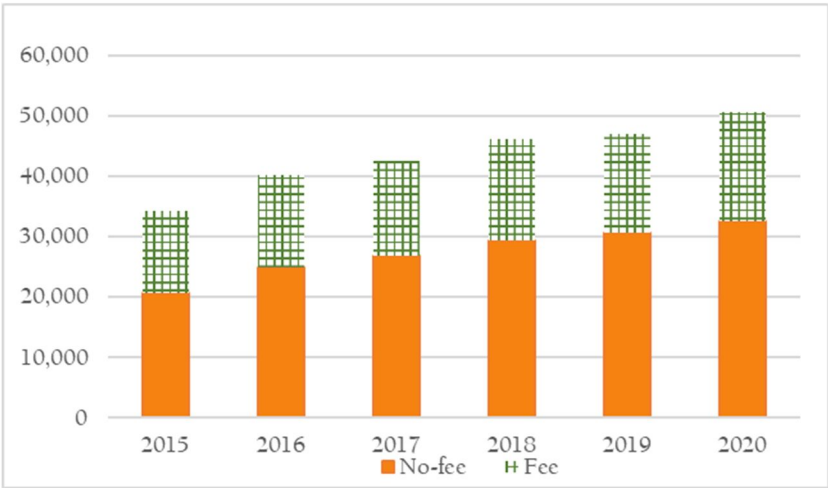
Two-thirds no-fee, low on STEM; biomed nearly three-quarters no-fee.

Articles and Journals by Year, Middle East

	2020	2019	2018	2017	2016	2015
Journals	1,116	1,125	1,113	1,065	996	890
%No-fee	75%	74%	74%	74%	74%	73%
Articles	50,519	47,032	46,175	42,508	40,298	34,175
%No-fee	65%	65%	64%	63%	62%	61%
Change	7%	2%	9%	5%	18%	

Mild growth after almost-flat 2019.

Fee and No-Fee Articles by Year, Middle East



Article Volume, Middle East

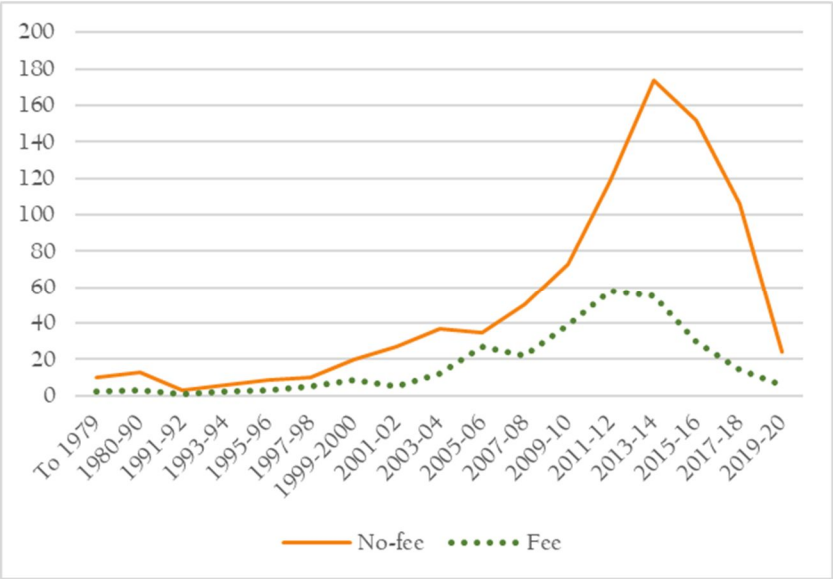
	Journals	Articles	%No-fee	\$/article
Largest: 600+	2	723	29%	\$284
Large: 150-599	59	11,172	31%	\$320
Med.: 60-149	250	17,329	70%	\$71
Small: 20-59	712	19,840	78%	\$27
Smallest: 0-19	138	1,455	91%	\$13

Fee Level, Middle East

	Journals	%Fee	%All	Articles	%Fee	%All
\$1,400+	2	1%	0%	103	1%	0%
\$600-\$1.399	18	6%	2%	2,812	16%	6%
\$200-\$599	57	19%	5%	4,684	26%	9%
\$0.01-\$199	216	74%	19%	10,298	58%	20%
No fee	868		75%	32,622		65%

Very few very large or expensive journals.

Starting Date, Middle East



Slow to start and until 2000 or so, peaking in 2013-2014.

Fees and Revenue, Middle East

	Articles	Revenue	\$/article
\$1,400+	103	\$187,573	\$1,821
\$600-\$1.399	2,812	\$2,870,396	\$1,021
\$200-\$599	4,684	\$1,660,654	\$355
\$0.20-\$199	10,298	\$841,367	\$82
No fee	32,622		
Total	50,519	\$5,559,991	\$110

While the most expensive group lost articles and revenue, the next group increased sharply—nearly doubling in articles and revenue (up 89% and 86% respectively). The third group, \$200-\$599, also increased substantially in article count and revenue.

Publisher Category, Middle East

Category	Journals	Articles	%No-fee	\$/article
Univ./college	850	33,641	68%	\$57
Open Access	172	7,539	74%	\$83
Traditional	50	5,242	39%	\$489
Society/govt	89	4,097	50%	\$111

Growth and Shrinkage, Middle East

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	277	25.2%	
Even, $\pm 24.99\%$	667	60.6%	85.8%
Shrank 25%+	156	14.2%	
Total	1,100		

Country of Publication, Middle East

Country	Journals	Articles	%No-fee	\$/article
Iran	583	21,861	60%	\$79
Turkey	432	20,349	83%	\$38
Iraq	56	2,351	22%	\$101
Egypt	34	2,213	14%	\$421
Saudi Arabia	15	2,194	33%	\$797
United Arab Emirates	10	507	12%	\$190
Oman	6	291	100%	\$0
Jordan	4	200	46%	\$96
Qatar	8	129	96%	\$39
Bahrain	1	118	100%	\$0
Lebanon	2	114	14%	\$129
Yemen	5	93	78%	\$32
Israel	2	67	100%	\$0
Syria	2	26	100%	\$0
Palestine	1	6	100%	\$0

Subjects, Middle East

Subject	Journ.	Articles	%No-fee	\$/article
Medicine	377	19,418	74%	\$89
Engineering	52	3,293	66%	\$205
Agriculture	59	2,940	46%	\$38
Economics	70	2,702	40%	\$163
Education	68	2,443	81%	\$30
Anthropology	39	1,759	36%	\$160
Zoology	36	1,753	36%	\$92
Other Sciences	25	1,396	37%	\$470
Biology	25	1,259	33%	\$634
Language & Literature	40	1,229	72%	\$27
Ecology	36	1,190	58%	\$23
Sociology	33	1,188	66%	\$33
Arts & Architecture	21	1,136	23%	\$171
Religion	41	1,003	86%	\$8
Earth Sciences	32	958	84%	\$14
Chemistry	22	828	60%	\$185
Mathematics	28	742	97%	\$5
History	20	709	80%	\$15
Law	17	701	42%	\$30
Miscellany	14	672	82%	\$26
Technology	11	593	91%	\$2
Computer Science	18	546	73%	\$127
Psychology	19	528	53%	\$20
Political Science	19	511	76%	\$24
Library Science	10	301	94%	\$10
Media & Communications	13	294	78%	\$10
Physics	9	231	91%	\$11
Philosophy	7	196	78%	\$12

Only two subjects average more than \$205.

14. Pacific/English

Key Facts, Pacific/English

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	1,165	137,354			\$1,671	39%
Fee	443	115,702	84%	29%	\$1,983	7%
No-fee	722	21,652	16%	-55%		
Biomed	380	56,879	41%	11%	\$1,990	24%
Fee	261	50,726	89%	17%	\$2,232	6%
No-fee	119	6,153	11%	-55%		
STEM	229	65,693	48%	18%	\$1,724	23%
Fee	135	61,249	93%	21%	\$1,849	2%
No-fee	94	4,444	7%	-70%		
H&SS	556	14,782	11%	-51%	\$205	30%
Fee	47	3,727	25%	3%	\$812	26%
No-fee	509	11,055	75%	-1%		

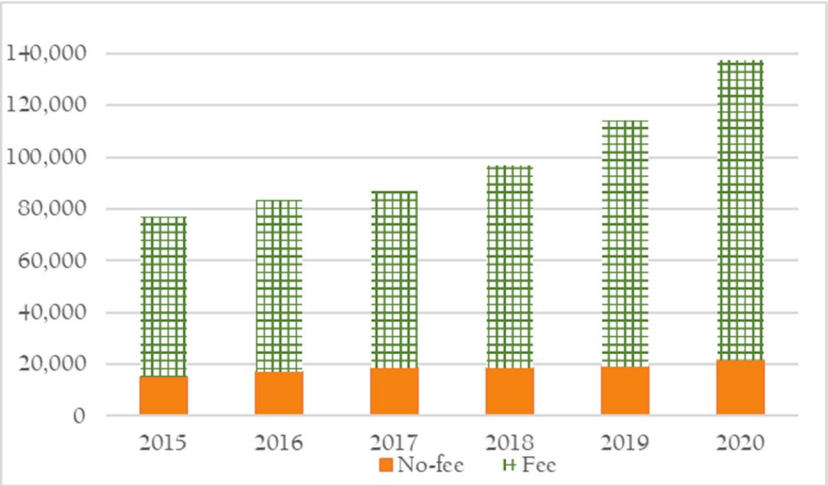
This “region” consists of Australia, Canada, New Zealand and the US.

Articles and Journals by Year, Pacific/English

	2020	2019	2018	2017	2016	2015
Journals	1,072	1,072	1,016	973	884	809
%No-fee	60%	62%	64%	65%	67%	69%
Articles	137,354	114,126	96,592	86,979	83,189	77,185
%No-fee	16%	17%	19%	22%	20%	19%
Change	20%	18%	11%	5%	8%	

Continuing strong growth, continuing decline in no-fee percentage.

Fee and No-Fee Articles by Year, Pacific/English



Article Volume, Pacific/English

	Journals	Articles	%No-fee	\$/article
Largest: 600+	33	75,702	2%	\$1,947
Large: 150-599	122	29,464	13%	\$1,868
Med.: 60-149	223	17,237	37%	\$1,173
Small: 20-59	476	12,432	65%	\$515
Smallest: 0-19	311	2,519	86%	\$152

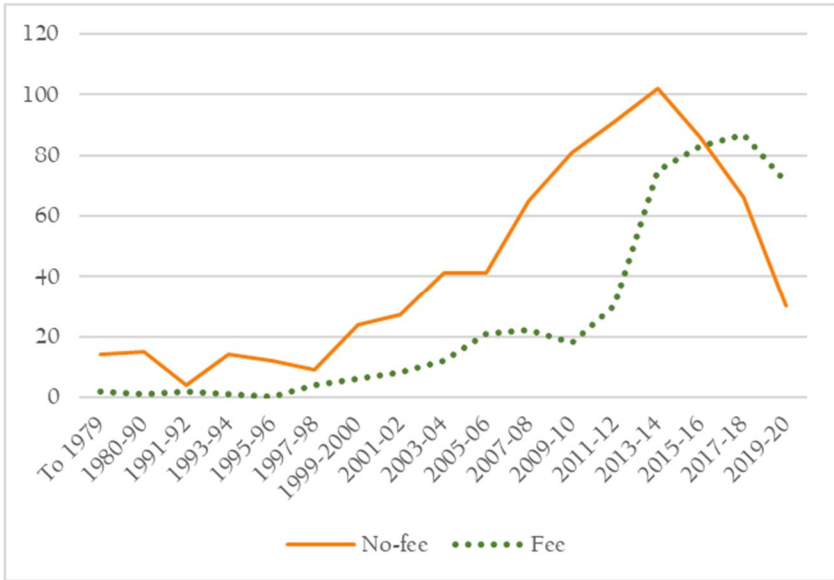
More than half of all articles are in large journals.

Fee Level, Pacific/English

	Journals	%Fee	%All	Articles	%Fee	%All
\$1,400+	280	63%	24%	96,039	83%	70%
\$600-\$1.399	76	17%	7%	15,158	13%	11%
\$200-\$599	59	13%	5%	3,576	3%	3%
\$0.01-\$199	28	6%	2%	929	1%	1%
No fee	722		62%	21,652		16%

More than half of all fee-charging journals are at the highest fee levels, and those journals account for six out of seven fee articles.

Starting Date, Pacific/English



Fees and Revenue, Pacific/English

	Articles	Revenue	\$/article
\$1,400+	96,039	\$212,068,427	\$2,208
\$600-\$1,399	15,158	\$15,852,390	\$1,046
\$200-\$599	3,576	\$1,441,334	\$403
\$0.20-\$199	929	\$101,276	\$109
No fee	21,652		
Total	137,354	\$229,463,428	\$1,671

\$178 increase in average cost in the most expensive tier and 21,000 more articles yields \$58 million more potential revenue.

Publisher Category, Pacific/English

Category	Journals	Articles	%No-fee	\$/article
Open Access	233	45,560	11%	\$1,694
Society/govt	197	44,019	12%	\$1,777
Traditional	251	32,712	7%	\$1,973
Univ./college	484	15,063	62%	\$632

Growth and Shrinkage, Pacific/English

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	365	35.8%	
Even, $\pm 24.99\%$	492	48.2%	84.0%
Shrank 25%+	163	16.0%	
Total	1,020		

Unusual in that less than half the journals stayed roughly even—and typical in that more than twice as many grew substantially as shrank.

Country of Publication, Pacific/English

Country	Journals	Articles	%No-fee	\$/article
United States	856	122,273	12%	\$1,734
Canada	176	8,040	51%	\$1,070
Australia	115	6,673	31%	\$1,321
New Zealand	18	368	100%	\$0

This pseudo-region is three or four very different stories: one very large set of journals, rapidly growing, with 88% fee-based articles at high prices (up from 84% in GOA5, and average cost is up from \$1,565 to \$1,734); two modest sets at fairly typical prices with either a bare majority of no-fee articles or a strong majority of fee articles—and New Zealand, with very little publishing and no fees at all.

Subjects, Pacific/English

As usual, medicine is most prevalent—but the next four stand out for having very few no-fee articles (1% for engineering to 7% for physics. Three of those four and medicine also have the highest average costs, with three exceeding the \$2,000-per-article mark. At the other extreme, history, library science, political science and religion continue to be entirely no-fee.

Subject	Journ.	Articles	%No-fee	\$/article
Medicine	329	47,075	12%	\$1,961
Other Sciences	17	22,076	1%	\$2,001
Engineering	22	18,765	1%	\$1,752
Biology	51	9,804	4%	\$2,130
Physics	21	6,469	7%	\$2,212
Computer Science	35	4,576	24%	\$1,097
Chemistry	9	4,517	10%	\$1,192
Education	105	2,837	89%	\$49
Mathematics	26	2,224	49%	\$443
Ecology	39	2,181	25%	\$1,130
Anthropology	40	1,879	35%	\$644
Zoology	9	1,649	5%	\$1,802
Sociology	58	1,622	62%	\$347
Earth Sciences	19	1,494	13%	\$1,233
Language & Literature	68	1,444	80%	\$46
Economics	37	1,267	86%	\$39
Agriculture	23	1,225	5%	\$1,829
Philosophy	35	800	95%	\$3
Political Science	29	799	100%	\$0
Media & Communications	34	768	94%	\$9
Miscellany	13	738	24%	\$611
Library Science	29	646	100%	\$0
Arts & Architecture	29	578	76%	\$170
Technology	9	517	8%	\$1,855
Psychology	16	484	43%	\$832
History	33	471	100%	\$0
Law	19	265	87%	\$141
Religion	11	184	100%	\$0

15. Western Europe

Key Facts, Western Europe

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	4,557	556,049			\$1,811	50%
Fee	2,067	455,590	82%	26%	\$2,210	20%
No-fee	2,490	100,459	18%	-48%		
Biomed	1,402	228,252	41%	10%	\$2,198	37%
Fee	1,101	207,918	91%	20%	\$2,413	14%
No-fee	301	20,334	9%	-63%		
STEM	1,092	263,157	47%	17%	\$1,812	29%
Fee	720	228,389	87%	12%	\$2,088	15%
No-fee	372	34,768	13%	-42%		
H&SS	2,063	64,640	12%	-48%	\$436	177%
Fee	246	19,283	30%	22%	\$1,461	127%
No-fee	1,817	45,357	70%	-7%		

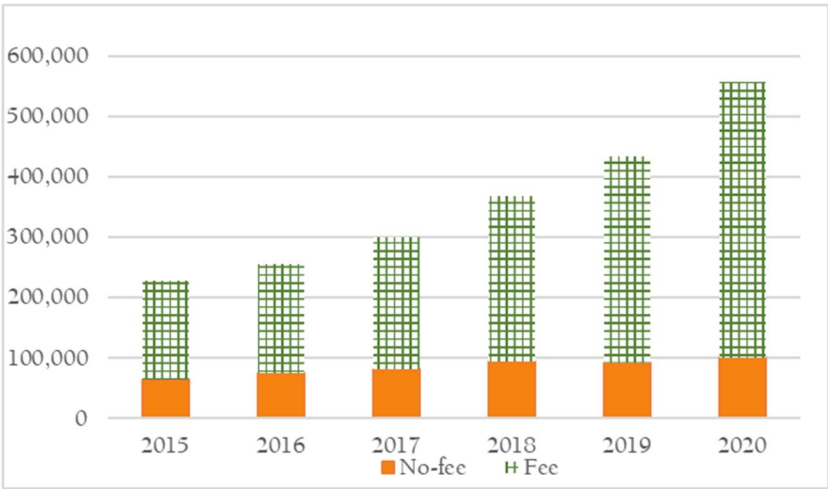
By far the most journals and more than half of all articles. Very lean (and expensive) in H&SS, somewhat rich in STEM. The only region with an *average* fee of more than \$2,000 for all fee articles.

Articles and Journals by Year, Western Europe

	2020	2019	2018	2017	2016	2015
Journals	4,307	4,346	4,165	3,986	3,738	3,475
%No-fee	53%	55%	56%	56%	56%	56%
Articles	556,049	434,738	367,868	299,319	256,025	228,440
%No-fee	18%	21%	25%	27%	29%	28%
Change	28%	18%	23%	17%	12%	

Strong growth each of the last four years, as no-fee percentages continue to decline (although no-fee *numbers* continue to grow).

Fee and No-Fee Articles by Year, Western Europe



Article Volume, Western Europe

	Journals	Articles	%No-fee	\$/article
Largest: 600+	172	316,722	8%	\$2,171
Large: 150-599	457	111,911	11%	\$1,856
Med.: 60-149	843	62,711	31%	\$1,240
Small: 20-59	2,142	56,271	64%	\$551
Smallest: 0-19	943	8,434	74%	\$333

More than half of the articles are in the largest journals.

Fee Level, Western Europe

	Journals	%Fee	%All	Articles	%Fee	%All
\$1,400+	1,267	61%	28%	398,598	87%	72%
\$600-\$1.399	603	29%	13%	46,180	10%	8%
\$200-\$599	146	7%	3%	8,029	2%	1%
\$0.01-\$199	51	2%	1%	2,783	1%	1%
No fee	2,490		55%	100,459		18%

More than six-sevenths of all fee articles and nearly three-quarters of all Western Europe articles are in the most expensive journals.

Starting Date, Western Europe



Another region where the gold rush continues.

Fees and Revenue, Western Europe

	Articles	Revenue	\$/article
\$1,400+	398,598	\$956,566,550	\$2,400
\$600-\$1.399	46,180	\$46,669,005	\$1,011
\$200-\$599	8,029	\$3,323,798	\$414
\$0.20-\$199	2,783	\$274,924	\$99
No fee	100,459		
Total	556,049	\$1,006,834,277	\$1,811

Revenues for the most expensive journals are up by more than 50% from GOA5—and nearly 79% of all OA revenues are in Western Europe (with Pacific/English another 18% and *the rest of the world* about 3.2%).

Publisher Category, Western Europe

Category	Journals	Articles	%No-fee	\$/article
Traditional	1,789	285,578	13%	\$2,098
Open Access	729	188,111	6%	\$1,876
Univ./college	1,676	59,322	69%	\$687
Society/govt	363	23,038	50%	\$605

Now mostly traditional, given imprint reassignments.

Growth and Shrinkage, Western Europe

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	1,602	38.2%	
Even, $\pm 24.99\%$	1,986	47.3%	85.5%
Shrank 25%+	609	14.5%	
Total	4,197		

Another case with slightly less than half even, and more than twice as much growth as shrinkage.

Country of Publication, Western Europe

Two giants of essentially all-fee OA at the top, both with very high average costs. Switzerland added another 73,000+ articles, growing more than 50% from GOA5 and taking over first place in volume and average pricing. Switzerland also stands out as the purest “show me the money” country, with only 1% no-fee articles (down from 2% in GOA5).

Country	Journals	Articles	%No-fee	\$/article
Switzerland	356	213,601	1%	\$2,205
United Kingdom	1,695	211,120	7%	\$2,190
Netherlands	255	32,821	23%	\$1,362
Spain	787	25,294	88%	\$125
Germany	276	23,801	59%	\$616
France	241	20,098	88%	\$184
Italy	413	13,633	72%	\$276
Portugal	131	4,026	78%	\$177
Norway	112	2,894	91%	\$79
Sweden	43	1,939	67%	\$553
Greece	36	1,703	72%	\$237
Austria	57	1,470	77%	\$164
Finland	50	1,409	83%	\$144
Belgium	47	736	97%	\$30
Ireland	17	668	43%	\$963
Denmark	28	446	95%	\$21
Iceland	7	329	100%	\$0
Malta	2	30	100%	\$0
Luxembourg	3	26	100%	\$0
Åland Islands	1	5	100%	\$0

Subjects, Western Europe

Revising subject assignments and substantial growth move Ecology into the third-largest spot (and the only one of the top four with under-\$2,000 average cost and more than 10% no-fee publishing).

Subject	Journ.	Articles	%No-fee	\$/article
Medicine	1,215	180,284	10%	\$2,126
Biology	187	47,968	3%	\$2,470
Ecology	149	47,803	22%	\$1,639
Other Sciences	46	46,629	2%	\$2,441
Chemistry	74	46,201	7%	\$1,854
Physics	98	30,299	26%	\$1,457
Engineering	109	22,386	5%	\$1,852
Earth Sciences	164	18,981	14%	\$1,703
Agriculture	101	15,994	11%	\$1,830
Computer Science	143	10,599	27%	\$1,291
Mathematics	75	9,555	9%	\$1,747
Zoology	86	9,041	12%	\$1,751
Language & Literature	344	7,205	91%	\$47
Anthropology	219	6,403	66%	\$442
Psychology	72	6,204	15%	\$2,121
Education	194	6,058	72%	\$261
Technology	47	5,669	41%	\$1,002
Sociology	147	5,027	71%	\$377
History	200	4,757	95%	\$18
Arts & Architecture	171	4,478	77%	\$248
Miscellany	59	4,378	73%	\$337
Economics	128	3,868	50%	\$580
Media & Communications	118	3,659	80%	\$157
Law	117	3,475	86%	\$173
Political Science	114	3,143	80%	\$227
Religion	51	2,656	47%	\$363
Philosophy	85	2,138	86%	\$229
Library Science	44	1,191	91%	\$95

16. Biology and Medicine

Key Facts, Biomed

	Journals	Articles	Art%	\$/Art
Biomed	3,643	394,910		\$1,608
Fee	1,892	300,936	76%	\$2,111
No-fee	1,751	93,974	24%	

Articles and Journals by Year, Biomed

	2020	2019	2018	2017	2016	2015
Journals	3,485	3,496	3,390	3,261	3,024	2,782
%No-fee	47%	48%	48%	49%	49%	49%
Articles	394,910	313,592	276,126	243,435	226,423	214,306
%No-fee	24%	26%	29%	33%	33%	33%
Change	26%	14%	13%	8%	6%	

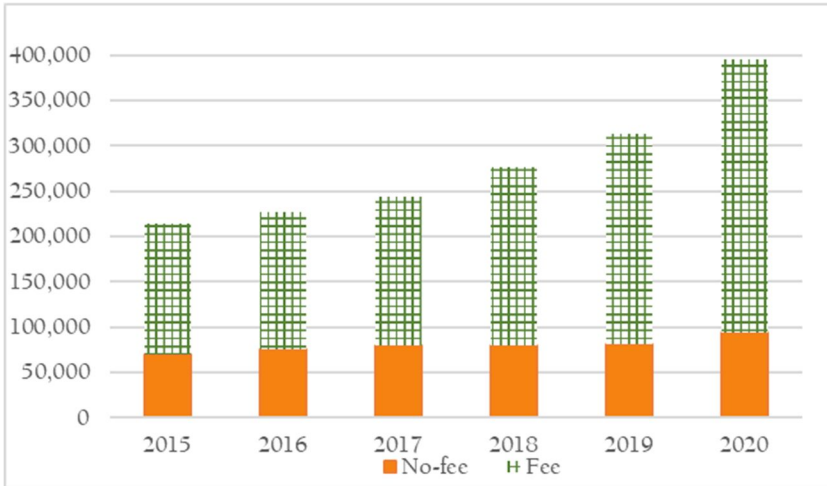
Fast article growth, with no-fee share dropping below one quarter.

Article Volume, Biomed

	Journals	Articles	%No-fee	\$/article
Largest: 600+	115	143,165	6%	\$2,352
Large: 150-599	530	122,173	16%	\$1,689
Med.: 60-149	1,068	80,587	46%	\$830
Small: 20-59	1,540	45,485	58%	\$514
Smallest: 0-19	390	3,500	56%	\$531

The largest journals published an astonishing 46% more articles in 2020 than the equivalent GOA5 group (93 journals) in 2019—the second year with largest journals growing by more than 40%.

Fee and No-Fee Articles by Year, Biomed



Fee Level, Biomed

	Journals	%Fee	%All	Articles	%Fee	%All
\$1,400+	1,024	54%	28%	235,005	78%	60%
\$600-\$1.399	361	19%	10%	29,846	10%	8%
\$200-\$599	225	12%	6%	20,229	7%	5%
\$0.01-\$199	282	15%	8%	15,856	5%	4%
No fee	1,751		48%	93,974		24%

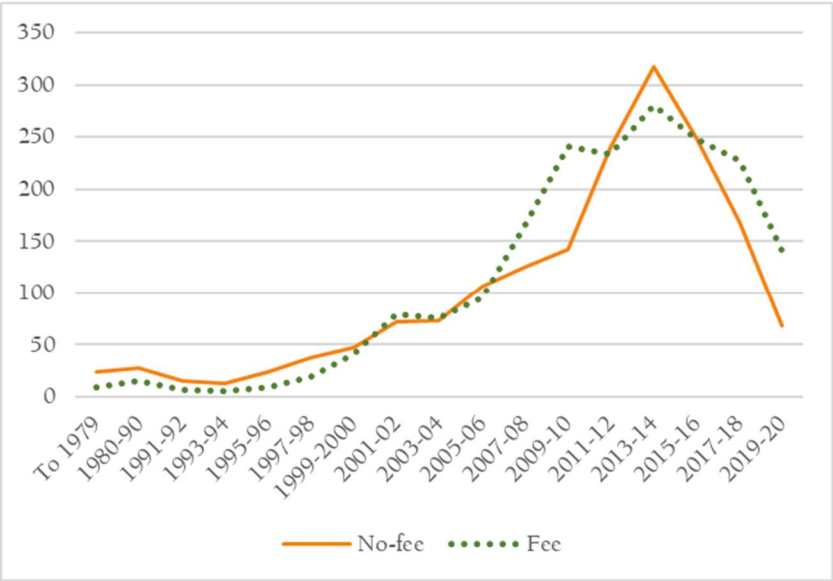
Three-fifths of *all* articles are in the most expensive journals.

Fees and Revenue, Biomed

	Articles	Revenue	\$/article
\$1,400+	235,005	\$598,265,116	\$2,546
\$600-\$1.399	29,846	\$28,240,460	\$946
\$200-\$599	20,229	\$7,188,049	\$355
\$0.20-\$199	15,856	\$1,461,152	\$92
No fee	93,974		
Total	394,910	\$635,154,778	\$1,608

The top row's gone up just over \$200 million dollars.

Starting Date, Biomed



Region, Biomed

Region	Journals	Articles	%No-fee	\$/article
Western Europe	1,402	228,252	9%	\$2,198
Pacific/English	380	56,879	11%	\$1,990
Asia	637	41,460	49%	\$271
Latin America	379	24,750	78%	\$98
Middle East	402	20,677	72%	\$122
Eastern Europe	396	20,063	62%	\$153
Africa	47	2,829	22%	\$349

Publisher Category, Biomed

Category	Journals	Articles	%No-fee	\$/article
Traditional	1,363	193,529	10%	\$2,201
Open Access	768	101,784	22%	\$1,395
Univ./college	1,099	66,727	53%	\$703
Society/govt	412	32,837	49%	\$618

Traditional publishers now account for not quite half of all articles, having taken over OA's lead (and some OA publishers).

Growth and Shrinkage, Biomed

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	1,247	36.5%	
Even, $\pm 24.99\%$	1,787	52.3%	88.7%
Shrank 25%+	386	11.3%	
Total	3,420		

More than three times as much growth as shrinkage.

Subjects, Biomed

Subject	Journals	Articles	%No-fee	\$/article	Page
Biology	419	65,708	8%	\$2,154	153
Medicine	3,224	329,202	27%	\$1,499	195

Biology articles are much less likely to be no-fee and have much higher average fees. “Page” refers to the starting page of the subject chapter (subject chapters are in alphabetic order following Chapter 18).

Country of Publication, Biomed

This table shows the 30 countries with at least 560 biomed articles in 2020. (There are another 66 countries with fewer biomed articles.) Of this group, the UK stands out for article volume, although Switzerland manages to have even higher average costs; neither has enough no-fee articles to be significant.

At the other extreme, Turkey, Cuba and Colombia have single-digit cost averages, and for Cuba that digit is zero. (Also true for countries with fewer articles, such as Peru, Portugal, Mexico, Croatia, and 33 others.)

Country	Journals	Articles	%No-fee	\$/article
United Kingdom	913	117,359	4%	\$2,396
Switzerland	131	72,215	1%	\$2,430
United States	298	48,937	10%	\$2,017
Netherlands	111	19,399	12%	\$1,734
India	240	19,224	56%	\$214
Brazil	189	16,453	69%	\$131
Iran	249	11,798	64%	\$115
Russia	104	6,953	92%	\$35
Turkey	112	6,409	97%	\$7
Spain	71	6,316	71%	\$380
South Korea	83	5,623	53%	\$248
China	49	5,418	41%	\$496
Poland	103	4,627	42%	\$357
Australia	41	4,569	12%	\$1,767
Indonesia	158	4,228	37%	\$53
Germany	44	3,756	60%	\$970
Italy	61	3,326	25%	\$919
Canada	40	3,323	22%	\$1,941
Ukraine	55	2,613	49%	\$47
Cuba	39	2,597	100%	\$0
Pakistan	22	2,263	13%	\$151
Colombia	46	1,602	96%	\$4
Romania	32	1,592	43%	\$127
South Africa	27	1,370	19%	\$494
Saudi Arabia	7	1,301	32%	\$793
Bulgaria	16	1,222	20%	\$267
France	7	1,133	89%	\$192
Hong Kong	10	1,072	24%	\$1,111
Norway	7	1,055	98%	\$7
Argentina	20	965	82%	\$178

17. Science, Technology, Engineering and Math

Key Facts, STEM

	Journals	Articles	Art%	\$/Art
STEM	3,891	431,004		\$1,404
Fee	1,597	332,599	77%	\$1,819
No-fee	2,294	98,405	23%	

Articles and Journals by Year, STEM

	2020	2019	2018	2017	2016	2015
Journals	3,676	3,713	3,582	3,436	3,211	2,959
%No-fee	58%	59%	61%	61%	62%	62%
Articles	431,004	356,920	309,070	265,383	233,680	203,473
%No-fee	23%	26%	31%	31%	33%	33%
Change	21%	15%	16%	14%	15%	

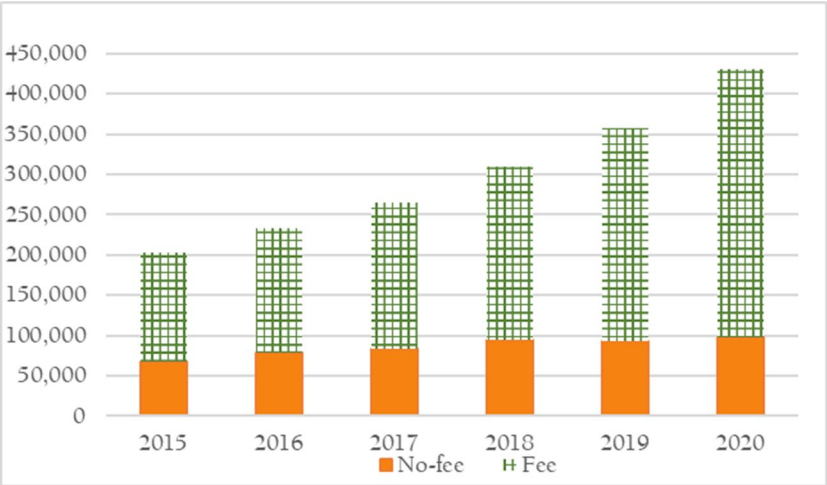
Robust growth every year, recent drop in no-fee percentages.

Article Volume, STEM

	Journals	Articles	%No-fee	\$/article
Largest: 600+	95	248,523	8%	\$1,959
Large: 150-599	306	65,052	24%	\$1,019
Med.: 60-149	887	60,142	44%	\$587
Small: 20-59	1,915	50,882	63%	\$301
Smallest: 0-19	688	6,405	75%	\$170

As was true in GOA5, the largest journals have *by far* the most articles, more than all others combined, at least partly due to megajournals.

Fee and No-Fee Articles by Year, STEM



Fee Level, STEM

	Journals	%Fee	%All	Articles	%Fee	%All
\$1,400+	499	31%	13%	255,039	77%	59%
\$600-\$1.399	358	22%	9%	38,278	12%	9%
\$200-\$599	246	15%	6%	18,366	6%	4%
\$0.01-\$199	494	31%	13%	20,916	6%	5%
No fee	2,294		59%	98,405		23%

Nearly three in five articles are in expensive journals.

Fees and Revenue, STEM

	Articles	Revenue	\$/article
\$1,400+	255,039	\$557,816,552	\$2,187
\$600-\$1.399	38,278	\$38,828,022	\$1,014
\$200-\$599	18,366	\$6,762,612	\$368
\$0.20-\$199	20,916	\$1,560,334	\$75
No fee	98,405		
Total	431,004	\$604,967,520	\$1,404

Potential revenues are up about \$189 million from GOA5.

Starting Date, STEM



Region, STEM

Region	Journals	Articles	%No-fee	\$/article
Western Europe	1,092	263,157	13%	\$1,812
Pacific/English	229	65,693	7%	\$1,724
Eastern Europe	888	35,045	62%	\$158
Asia	696	26,382	41%	\$203
Latin America	590	24,188	69%	\$73
Middle East	328	14,470	59%	\$130
Africa	68	2,069	67%	\$122

Growth and Shrinkage, STEM

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	1,028	28.7%	
Even, $\pm 24.99\%$	2,032	56.8%	85.5%
Shrank 25%+	520	14.5%	
Total	3,580		

Table moved for layout reasons.

Publisher Category, STEM

Category	Journals	Articles	%No-fee	\$/article
Open Access	503	161,112	5%	\$1,807
Traditional	859	131,685	20%	\$1,722
Univ./college	2,056	77,281	67%	\$123
Society/govt	470	60,875	19%	\$1,274

Open access still outnumbers traditional—but by 22%, not 108%.

Subjects, STEM

Subject	Journals	Articles	%No-fee	\$/article	Page
Agriculture	568	37,145	31%	\$922	144
Chemistry	203	55,576	11%	\$1,656	156
Computer Science	396	21,599	40%	\$884	159
Earth Sciences	506	32,131	38%	\$1,086	162
Ecology	472	60,733	27%	\$1,357	165
Engineering	515	57,699	19%	\$1,337	174
Mathematics	320	17,837	37%	\$1,014	189
Other Sciences	220	76,191	7%	\$2,090	202
Physics	210	40,469	26%	\$1,456	208
Technology	184	11,532	50%	\$667	223
Zoology	297	20,092	19%	\$1,054	226

“Other sciences”—read megajournals—has the most articles and highest costs, as well as the lowest no-fee percentage. Page numbers show where individual subject chapters start.

Country of Publication, STEM

This table lists countries with more than 1,000 STEM articles in 2019; another 69 have at least one STEM article. The high costs and extremely low no-fee percentages for Switzerland, the United Kingdom and United States may not be surprising. While Cuba is the only 100% no-fee country among the 32 most prolific, there are 35 other no-fee countries among the 71 with fewer articles.

Country	Journals	Articles	%no-fee	\$/article
Switzerland	169	131,318	0%	\$2,118
United Kingdom	458	83,439	6%	\$2,074
United States	191	63,353	6%	\$1,748
Germany	121	16,413	59%	\$639
Brazil	290	15,995	58%	\$98
France	59	14,190	84%	\$245
Netherlands	79	11,082	29%	\$949
Indonesia	429	10,146	35%	\$78
Russia	133	7,191	81%	\$32
Poland	229	7,096	50%	\$296
China	77	6,570	54%	\$265
Iran	172	5,828	66%	\$26
Ukraine	120	4,746	69%	\$16
Turkey	88	4,467	82%	\$11
Romania	100	3,489	72%	\$104
Serbia	73	2,803	60%	\$107
Italy	61	2,505	69%	\$246
India	34	2,296	42%	\$209
Bulgaria	38	2,208	23%	\$455
Colombia	87	2,146	98%	\$3
Spain	67	1,969	83%	\$98
Malaysia	35	1,714	38%	\$190
South Korea	22	1,691	13%	\$471
Egypt	20	1,677	10%	\$483
Canada	24	1,442	19%	\$1,284
Iraq	31	1,404	23%	\$103
Croatia	33	1,360	60%	\$241
Czechia	37	1,293	44%	\$244
Mexico	31	1,269	64%	\$70
Cuba	34	1,264	100%	\$0
Argentina	50	1,064	86%	\$6
Lithuania	22	1,019	28%	\$543

18. Humanities & Social Sciences

Key Facts, H&SS

	Journals	Articles	Art%	\$/Art
H&SS	7,594	235,342		\$157
Fee	1,096	57,383	24%	\$645
No-fee	6,498	177,959	76%	

Articles and Journals by Year, H&SS

	2020	2019	2018	2017	2016	2015
Journals	7,014	7,288	7,198	6,941	6,509	5,968
%No-fee	85%	86%	86%	86%	86%	87%
Articles	235,342	223,542	216,460	203,208	185,628	167,485
%No-fee	76%	78%	78%	80%	80%	79%
Change	5%	3%	7%	9%	11%	

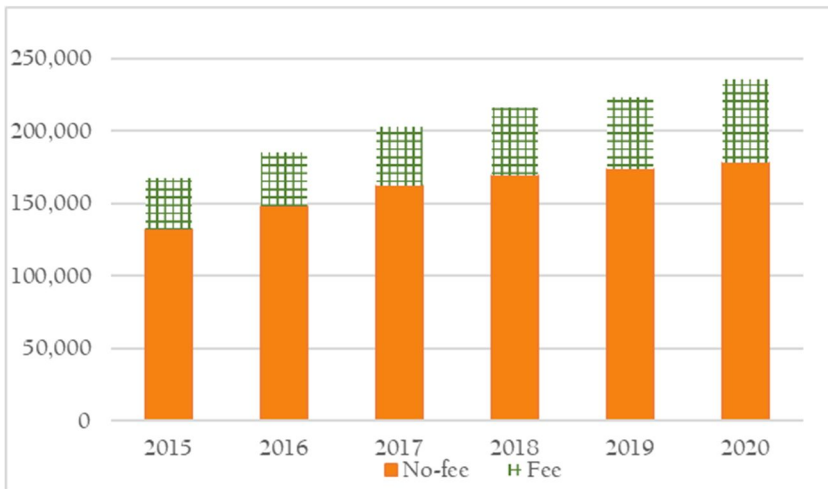
Continued slow growth, and still more than three-quarters no-fee.

Article Volume, H&SS

	Journals	Articles	%No-fee	\$/article
Largest: 600+	19	13,406	22%	\$1,097
Large: 150-599	153	25,164	42%	\$379
Med.: 60-149	1,025	64,118	77%	\$122
Small: 20-59	4,507	113,853	86%	\$38
Smallest: 0-19	1,890	18,801	89%	\$34

Most of the growth from GOA5 is in medium and small journals.

Fee and No-Fee Articles by Year, H&SS



Fee Level, H&SS

	Journals	%Fee	%All	Articles	%Fee	%All
\$1,400+	61	6%	1%	8,551	15%	4%
\$600-\$1.399	148	14%	2%	11,074	19%	5%
\$200-\$599	174	16%	2%	10,120	18%	4%
\$0.01-\$199	713	65%	9%	27,638	48%	12%
No fee	6,498		86%	177,959		76%

Not only do 76% of articles have no fee at all, nearly half of those with fees have nominal fees.

Fees and Revenue, H&SS

	Articles	Revenue	\$/article
\$1,400+	8,551	\$19,921,416	\$2,330
\$600-\$1.399	11,074	\$11,443,545	\$1,033
\$200-\$599	10,120	\$3,775,032	\$373
\$0.20-\$199	27,638	\$1,872,279	\$68
No fee	177,959		
Total	235,342	\$37,012,271	\$157

Average cost in the most expensive journals is *higher* than in STEM—but *total* revenue is smaller than the single top STEM journal.

Starting Date, H&SS



Region, H&SS

Region	Journals	Articles	%No-fee	\$/article
Latin America	1,982	69,244	97%	\$4
Western Europe	2,063	64,640	70%	\$436
Eastern Europe	1,393	45,379	69%	\$44
Asia	1,079	22,926	55%	\$62
Middle East	431	15,372	60%	\$75
Pacific/English	556	14,782	75%	\$205
Africa	90	2,999	36%	\$312

The lowest-cost region, Latin America, continues to be the most productive for H&SS; its average cost is less than half what it was in GOA5.

Publisher Category, H&SS

Category	Journals	Articles	%No-fee	\$/article
Univ./college	5,948	170,912	83%	\$29
Open Access	669	25,874	52%	\$331
Traditional	413	20,520	37%	\$1,088
Society/govt	561	17,976	81%	\$59

University and college publishers continue to dominate H&SS publishing. Although the average cost is up \$3 from GOA5, it's still very low.

Growth and Shrinkage, H&SS

Change 2019-2020	Count	Percent	Cum%
Grew 25%+	1,867	27.0%	
Even, $\pm 24.99\%$	3,982	57.6%	84.6%
Shrank 25%+	1,066	15.4%	
Total	6,915		

Subjects, H&SS

Subject	Journ	Articles	%No-fee	\$/article	Page
Anthropology	663	22,061	64%	\$219	147
Arts & Architecture	405	11,382	77%	\$131	150
Economics	941	28,086	59%	\$155	168
Education	974	33,807	78%	\$70	171
History	495	13,904	92%	\$16	177
Language & Literature	984	25,713	87%	\$26	180
Law	470	13,055	86%	\$57	183
Library Science	170	4,291	96%	\$28	186
Media & Communications	313	9,225	88%	\$66	192
Miscellany	241	12,421	69%	\$169	199
Philosophy	293	8,167	92%	\$74	205
Political Science	481	13,609	87%	\$68	211
Psychology	268	11,866	44%	\$1,154	214
Religion	318	8,635	64%	\$176	217
Sociology	578	19,120	76%	\$143	220

As in Chapters 16 and 17, this table is alphabetic. Psychology stands out as the only H&SS subject with four-figure average article cost, with Anthropology the only other one above \$200.

Country of Publication

This table includes the 33 countries with at least 1,200 H&SS articles in 2020 (another 76 have fewer articles).

Switzerland stands out for its high average costs—now more than twice as much as runner-up United Kingdom and nearly four times as much as third-place South Africa.

Brazil continues to have the most journals and the most articles, and the average cost has gone from \$14 in *GOA5* down to \$4 this time around.

Colombia, Argentina, Cuba, Ecuador and Costa Rica stand out for having no fee-based H&SS articles at all (Mexico has \$0 average cost, but it has one H&SS journal with fees), but that's also true of 45 other countries with fewer articles.

Country	Journals	Articles	%no-fee	\$/article
Brazil	1,036	43,212	98%	\$4
Indonesia	903	17,254	53%	\$28
Spain	649	17,009	94%	\$33
Russia	196	11,014	84%	\$33
United Kingdom	324	10,322	42%	\$773
Switzerland	56	10,068	15%	\$1,738
United States	367	9,983	68%	\$260
Turkey	232	9,473	74%	\$72
Poland	321	8,215	74%	\$58
Ukraine	173	8,157	33%	\$47
Italy	291	7,802	93%	\$12
Romania	203	6,574	55%	\$46
Colombia	264	6,299	100%	\$0
Argentina	228	5,985	100%	\$0
France	175	4,775	99%	\$3
Iran	162	4,235	42%	\$55
Germany	111	3,632	60%	\$148
Chile	103	3,289	71%	\$38
Canada	112	3,275	94%	\$93
Portugal	100	2,904	69%	\$245
Mexico	104	2,659	99%	\$0
Cuba	35	2,478	100%	\$0
Netherlands	65	2,340	78%	\$242
Serbia	104	2,197	95%	\$5
South Africa	60	2,133	13%	\$436
Norway	97	1,748	89%	\$92
South Korea	27	1,710	18%	\$389
Croatia	78	1,649	98%	\$8
Czechia	77	1,608	95%	\$17
Ecuador	48	1,323	100%	\$0
Australia	64	1,270	74%	\$99
Costa Rica	45	1,264	100%	\$0
Lithuania	57	1,226	67%	\$158

19. Agriculture

Key Facts, Agriculture

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	568	37,145			\$922	-23%
Fee	244	25,699	69%	6%	\$1,333	-28%
No-fee	324	11,446	31%	-12%		

Relatively inexpensive for STEM; a little heavy on fee-based articles.

Articles and Journals by Year, Agriculture

	2020	2019	2018	2017	2016	2015
Journals	545	550	534	519	496	465
%No-fee	57%	57%	58%	58%	58%	59%
Articles	37,145	30,611	26,755	24,349	23,295	20,921
%No-fee	31%	35%	40%	45%	45%	45%
Change	21%	14%	10%	5%	11%	

Strong growth every year except 2017; continuing recent shift to fees.

Article Volume, Agriculture

	Journals	Articles	%No-fee	\$/article
Largest: 600+	7	10,594	0%	\$2,186
Large: 150-599	37	7,669	23%	\$760
Med.: 60-149	164	10,664	44%	\$355
Small: 20-59	274	7,340	60%	\$192
Smallest: 0-19	86	878	74%	\$89

The largest journals are *by far* the most expensive. (Also true in GOA5.)

Fees and Revenue, Agriculture

	Journals	Articles	Revenue	\$/article
\$1,400+	43	14,091	\$30,637,165	\$2,174
\$600-\$1,399	33	2,437	\$2,139,793	\$878
\$200-\$599	45	3,029	\$1,034,463	\$342
\$0.20-\$199	123	6,142	\$445,922	\$73
No fee	324	11,446		
Total	568	37,145	\$34,257,343	\$922

Region, Agriculture

Region	Journals	Articles	%No-fee	\$/article
Western Europe	101	15,994	11%	\$1,830
Eastern Europe	131	6,543	60%	\$144
Latin America	133	6,231	51%	\$121
Asia	111	3,997	23%	\$232
Middle East	59	2,940	46%	\$38
Pacific/English	23	1,225	5%	\$1,829
Africa	10	215	78%	\$45

Typical: Western Europe is the largest and most expensive. Atypical: While Pacific/English is expensive, it's not very active in this field.

Publisher Category, Agriculture

Category	Journals	Articles	%No-fee	\$/article
Univ./college	357	14,462	59%	\$89
Open Access	50	11,284	7%	\$1,586
Traditional	86	7,282	16%	\$1,742
Society/govt	75	4,117	23%	\$580

Universities publish more articles than OA publishers at less than one-seventeenth the average cost per article.

Country of Publication, Agriculture, >200 articles in 2020

Country	Journals	Articles	%no-fee	\$/article
Switzerland	14	11,209	0%	\$2,137
Brazil	66	4,143	40%	\$154
United Kingdom	35	2,789	10%	\$1,765
Indonesia	76	1,628	26%	\$49
Turkey	24	1,551	58%	\$11
Russia	21	1,538	65%	\$52
Romania	17	1,379	75%	\$28
United States	23	1,225	5%	\$1,829
Iran	27	873	39%	\$28
China	8	705	32%	\$738
Ukraine	14	649	67%	\$62
Poland	30	632	56%	\$313
Czechia	12	621	30%	\$315
Italy	15	496	53%	\$337
Malaysia	2	438	5%	\$320
Germany	8	427	90%	\$45
Argentina	16	414	70%	\$8
Colombia	14	373	97%	\$3
Bulgaria	4	372	17%	\$687
Cuba	10	356	100%	\$0
India	5	352	18%	\$17
Bangladesh	6	325	0%	\$58
Mexico	6	320	19%	\$158
France	7	313	100%	\$0
Spain	9	303	100%	\$0
Estonia	3	295	21%	\$271

31 more countries with fewer articles. Three countries, all predictable, average more than \$1,500 per article; most others average two-digit or very low three-digit prices. Cuba, France and Spain are entirely no-fee, as are 21 countries with fewer than 200 articles.

20. Anthropology

Key Facts, Anthropology

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	663	22,061			\$219	-82%
Fee	114	7,935	36%	-45%	\$609	-67%
No-fee	549	14,126	64%	83%		

Almost the flip side of agriculture, with 64% no-fee and low costs. Includes archaeology and sports sciences.

Articles and Journals by Year, Anthropology

	2020	2019	2018	2017	2016	2015
Journals	624	642	629	611	581	541
%No-fee	82%	83%	83%	84%	84%	84%
Articles	22,061	21,108	20,112	19,340	16,696	15,258
%No-fee	64%	65%	65%	67%	71%	70%
Change	5%	5%	4%	16%	9%	

Slow growth the past three years.

Article Volume, Anthropology

	Journals	Articles	%No-fee	\$/article
Largest: 600+	3	1,839	0%	\$943
Large: 150-599	16	2,838	18%	\$467
Med.: 60-149	92	5,544	64%	\$190
Small: 20-59	398	10,178	85%	\$57
Smallest: 0-19	154	1,662	86%	\$88

Most articles are in small journals, which is not unusual for H&SS.

Fees and Revenue, Anthropology

	Journals	Articles	Revenue	\$/article
\$1,400+	13	1,044	\$1,961,853	\$1,879
\$600-\$1,399	18	1,898	\$2,180,554	\$1,149
\$200-\$599	22	1,428	\$420,230	\$294
\$0.20-\$199	61	3,565	\$271,458	\$76
No fee	549	14,126		
Total	663	22,061	\$4,834,094	\$219

As was true in GOA5, the most revenue is in the \$600-\$1,399 range.

Region, Anthropology

Region	Journals	Articles	%No-fee	\$/article
Western Europe	219	6,403	66%	\$442
Latin America	171	5,534	92%	\$12
Eastern Europe	142	4,910	52%	\$65
Pacific/English	40	1,879	35%	\$644
Middle East	39	1,759	36%	\$160
Asia	48	1,293	68%	\$56
Africa	4	283	17%	\$181

Latin America is very active with almost no fees.

Publisher Category, Anthropology

Category	Journals	Articles	%No-fee	\$/article
Univ./college	493	15,030	72%	\$79
Open Access	59	2,728	35%	\$447
Traditional	47	2,581	29%	\$932
Society/govt	63	1,698	90%	\$9

Universities dominate, which is typical for H&SS.

Country of Publication, Anthropology, >110 articles in 2020

33 countries; another 28 with fewer articles.

Country	Journals	Articles	%no-fee	\$/article
Brazil	82	3,254	87%	\$20
Spain	79	2,119	86%	\$37
United States	28	1,626	27%	\$741
Poland	37	1,584	47%	\$69
Romania	28	1,316	32%	\$86
Turkey	20	1,128	49%	\$191
Switzerland	8	929	1%	\$1,391
United Kingdom	30	890	25%	\$1,350
Indonesia	36	775	54%	\$36
Argentina	29	753	97%	\$1
Ukraine	14	566	22%	\$51
France	23	538	100%	\$0
Iran	15	499	17%	\$98
Italy	22	475	100%	\$0
Colombia	15	365	100%	\$0
Germany	11	340	80%	\$226
Cuba	6	311	100%	\$0
Mexico	12	298	100%	\$0
Netherlands	5	295	48%	\$577
Russia	6	286	74%	\$177
South Africa	3	271	13%	\$189
Portugal	12	256	80%	\$35
Serbia	15	227	100%	\$0
Norway	9	207	100%	\$0
Malaysia	4	185	100%	\$0
Chile	9	184	100%	\$0
Finland	10	184	100%	\$0
Czechia	12	183	100%	\$0
Canada	9	181	96%	\$18
China	1	177	100%	\$0
Croatia	7	139	100%	\$0
Moldova	4	121	100%	\$0
Montenegro	3	121	50%	\$107

21. Arts & Architecture

Key Facts, Arts & Architecture

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	405	11,382			\$131	-89%
Fee	45	2,575	23%	-65%	\$578	-69%
No-fee	360	8,807	77%	122%		

Three-quarters no-fee and moderate fees when they do exist.

Articles and Journals by Year, Art & Architecture

	2020	2019	2018	2017	2016	2015
Journals	375	392	384	362	344	299
%No-fee	89%	89%	90%	90%	90%	91%
Articles	11,382	11,177	10,870	9,565	8,616	7,137
%No-fee	77%	78%	77%	83%	86%	88%
Change	2%	3%	14%	11%	21%	

Article Volume, Arts & Architecture

	Journals	Articles	%No-fee	\$/article
Large: 150-599	8	1,493	25%	\$469
Med.: 60-149	51	3,204	75%	\$126
Small: 20-59	233	5,597	90%	\$63
Smallest: 0-19	113	1,088	93%	\$30

No largest journals, but the usual size/expense correlation (that is, larger journals tend to have more and higher fees, despite economies of scale). Most articles are in small journals.

Fees and Revenue, Arts & Architecture

	Journals	Articles	Revenue	\$/article
\$1,400+	5	402	\$626,086	\$1,557
\$600-\$1,399	9	518	\$551,855	\$1,065
\$200-\$599	12	686	\$226,541	\$330
\$0.20-\$199	19	969	\$84,395	\$87
No fee	360	8,807		
Total	405	11,382	\$1,488,878	\$131

Few expensive journals, and they're only borderline expensive.

Region, Arts & Architecture

Region	Journals	Articles	%No-fee	\$/article
Western Europe	171	4,478	77%	\$248
Latin America	93	2,883	98%	\$0
Eastern Europe	64	1,748	78%	\$47
Middle East	21	1,136	23%	\$171
Pacific/English	29	578	76%	\$170
Asia	25	518	83%	\$10
Africa	2	41	100%	\$0

Latin America and Eastern Europe, with almost no fees, publish more articles combined than Western Europe (also mostly no-fee, to be sure).

Publisher Category, Arts & Humanities

Category	Journals	Articles	%No-fee	\$/article
Univ./college	310	8,466	85%	\$39
Open Access	50	1,342	42%	\$586
Society/govt	25	936	74%	\$103
Traditional	20	638	52%	\$430

Dominated by university publishers, as you'd expect.

Country of Publication, Arts & Architecture, 50+ 2020 articles

33 countries with more than 50 articles in 2020, including 13 with no fees. Another 22 countries have fewer than 50 articles—and *none* of those have any article fees.

Country	Journals	Articles	%no-fee	\$/article
Brazil	44	1,773	99%	\$0
Spain	56	1,350	100%	\$0
Italy	38	1,090	92%	\$16
United Kingdom	25	563	52%	\$514
Russia	9	531	62%	\$119
United States	23	457	81%	\$38
Portugal	12	427	47%	\$362
Switzerland	3	393	3%	\$1,381
Turkey	12	368	57%	\$28
Ukraine	9	360	85%	\$4
Argentina	17	358	100%	\$0
Indonesia	20	358	75%	\$14
United Arab Emirates	1	341	0%	\$150
Egypt	2	253	5%	\$379
Poland	10	237	78%	\$61
Colombia	8	224	100%	\$0
Chile	9	183	81%	\$2
Ecuador	6	167	100%	\$0
Romania	8	163	100%	\$0
Serbia	10	159	100%	\$0
Iran	4	154	12%	\$240
France	7	131	100%	\$0
Norway	9	122	83%	\$219
Netherlands	6	113	67%	\$504
Greece	3	93	100%	\$0
China	1	79	100%	\$0
Moldova	2	71	0%	\$44
Slovenia	5	71	100%	\$0
Australia	2	65	17%	\$1,246
Mexico	3	61	100%	\$0
Croatia	6	57	100%	\$0
Canada	3	56	100%	\$0
Germany	3	53	60%	\$392

22. Biology

Key Facts, Biology

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	419	65,708			\$2,154	79%
Fee	278	60,386	92%	41%	\$2,344	27%
No-fee	141	5,322	8%	-77%		

More expensive than medicine, with very few no-fee articles,

Articles and Journals by Year, Biology

	2020	2019	2018	2017	2016	2015
Journals	392	395	386	375	343	315
%No-fee	32%	33%	33%	33%	33%	34%
Articles	65,708	51,530	42,798	36,610	33,615	33,192
%No-fee	8%	9%	10%	11%	12%	12%
Change	28%	20%	17%	9%	1%	

Healthy and accelerating growth since 2016.

Article Volume, Biology

	Journals	Articles	%No-fee	\$/article
Largest: 600+	30	40,706	2%	\$2,511
Large: 150-599	63	14,158	6%	\$1,992
Med.: 60-149	88	5,959	26%	\$1,253
Small: 20-59	172	4,273	38%	\$780
Smallest: 0-19	66	612	50%	\$540

The dominance of the largest journals is growing (as is the average cost): now more than three out of five articles are in 7% of the journals.

Fees and Revenue, Biology

	Journals	Articles	Revenue	\$/article
\$1,400+	163	52,360	\$135,767,999	\$2,593
\$600-\$1.399	46	4,741	\$5,115,438	\$1,079
\$200-\$599	26	1,357	\$504,685	\$372
\$0.20-\$199	43	1,928	\$167,476	\$87
No fee	141	5,322		
Total	419	65,708	\$141,555,597	\$2,154

The most expensive journals dominate the field, with very high fees, and 50% more revenue than in GOA5.

Region, Biology

Region	Journals	Articles	%No-fee	\$/article
Western Europe	187	47,968	3%	\$2,470
Pacific/English	51	9,804	4%	\$2,130
Eastern Europe	64	2,531	48%	\$171
Asia	58	2,229	34%	\$275
Latin America	30	1,755	59%	\$192
Middle East	25	1,259	33%	\$634
Africa	4	162	12%	\$156

Western Europe, with by far the highest fees and almost no no-fee publishing, dominates the subject.

Publisher Category, Biology

Category	Journals	Articles	%No-fee	\$/article
Traditional	168	29,970	5%	\$2,598
Open Access	87	23,837	2%	\$1,969
Univ./college	116	6,933	35%	\$1,217
Society/govt	48	4,968	17%	\$1,673

Shifts and acquisitions mean that traditional publishers now outpublish OA publishers (at a higher average fee).

Country of Publication, Biology, 50+ 2020 articles

Another 21 countries publish fewer articles. No surprises at the top.

Country	Journals	Articles	%no-fee	\$/article
Switzerland	32	24,244	0%	\$2,397
United Kingdom	114	19,427	2%	\$2,572
United States	43	9,381	4%	\$2,146
Netherlands	17	2,703	1%	\$3,516
Brazil	15	1,360	47%	\$248
France	2	928	100%	\$0
India	10	724	39%	\$292
Russia	12	594	74%	\$18
Ukraine	12	589	35%	\$30
Saudi Arabia	1	575	0%	\$1,250
Indonesia	26	564	31%	\$59
Iran	16	539	56%	\$140
Bulgaria	9	537	14%	\$326
Poland	17	384	40%	\$581
Australia	5	353	7%	\$2,130
Germany	9	343	45%	\$1,909
Pakistan	3	296	5%	\$284
China	6	288	52%	\$578
South Korea	3	168	27%	\$349
Serbia	4	147	100%	\$0
Finland	2	138	0%	\$854
Colombia	5	125	100%	\$0
Kenya	1	119	0%	\$190
Italy	7	114	35%	\$228
Turkey	5	102	100%	\$0
Romania	4	94	100%	\$0
Malaysia	3	92	34%	\$73
Ecuador	1	78	100%	\$0
Peru	2	78	100%	\$0
Austria	2	68	0%	\$1,356
Argentina	3	66	100%	\$0
New Zealand	1	50	100%	\$0

23. Chemistry

Key Facts, Chemistry

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	203	55,576			\$1,656	38%
Fee	107	49,581	89%	37%	\$1,856	0%
No-fee	96	5,995	11%	-69%		

Articles and Journals by Year, Chemistry

	2020	2019	2018	2017	2016	2015
Journals	194	192	174	168	157	146
%No-fee	46%	48%	52%	51%	52%	51%
Articles	55,576	42,449	33,719	26,924	16,315	13,944
%No-fee	11%	14%	16%	17%	26%	30%
Change	31%	26%	25%	65%	17%	

Solid growth every year, with extreme growth in 2017. Including reassignments and added journals, article count is up 59% from GOA5.

Article Volume, Chemistry

	Journals	Articles	%No-fee	\$/article
Largest: 600+	14	44,265	3%	\$1,893
Large: 150-599	21	4,851	33%	\$870
Med.: 60-149	58	4,041	39%	\$814
Small: 20-59	81	2,176	56%	\$287
Smallest: 0-19	29	243	67%	\$423

Nearly four of five articles appear in 14 very large journals.

Fees and Revenue, Chemistry

	Journals	Articles	Revenue	\$/article
\$1,400+	46	36,561	\$79,864,753	\$2,184
\$600-\$1,399	22	10,170	\$11,246,508	\$1,106
\$200-\$599	15	1,949	\$844,991	\$434
\$0.20-\$199	24	901	\$72,522	\$80
No fee	96	5,995		
Total	203	55,576	\$92,028,774	\$1,656

Two-thirds of articles are in very expensive journals—and revenues are *double* those for 2019 in GOA5.

Region, Chemistry

Region	Journals	Articles	%No-fee	\$/article
Western Europe	74	46,201	7%	\$1,854
Pacific/English	9	4,517	10%	\$1,192
Eastern Europe	45	2,022	60%	\$241
Asia	31	1,108	44%	\$75
Middle East	22	828	60%	\$185
Latin America	16	745	32%	\$279
Africa	6	155	64%	\$289

Publisher Category, Chemistry

Category	Journals	Articles	%No-fee	\$/article
Open Access	40	34,164	1%	\$2,120
Society/govt	36	12,977	24%	\$767
Traditional	54	5,810	12%	\$1,644
Univ./college	73	2,625	67%	\$41

OA publishers still dominate chemistry.

Country of Publication, Chemistry, >25 2020 articles

Switzerland publishes almost two-thirds of chemistry. In addition to these 31 countries, 21 more published 25 articles or fewer in 2020

Country	Journals	Articles	%no-fee	\$/article
Switzerland	30	34,959	0%	\$2,175
United Kingdom	29	8,895	24%	\$881
United States	7	4,467	9%	\$1,205
Netherlands	5	1,118	25%	\$925
Germany	6	1,069	40%	\$643
Indonesia	22	686	24%	\$109
Poland	15	641	33%	\$623
Iran	16	591	67%	\$36
Brazil	7	589	13%	\$353
Serbia	6	323	59%	\$106
Russia	5	303	100%	\$0
Ukraine	7	229	73%	\$5
India	3	206	84%	\$9
Croatia	5	189	100%	\$0
Romania	2	172	27%	\$250
China	3	148	82%	\$34
Saudi Arabia	1	104	0%	\$1,250
Turkey	3	102	100%	\$0
France	2	94	100%	\$0
Hungary	2	89	100%	\$0
South Africa	2	76	26%	\$589
Italy	1	56	0%	\$1,082
Kazakhstan	2	56	0%	\$164
Canada	2	50	100%	\$0
Cuba	2	50	100%	\$0
Ethiopia	1	44	100%	\$0
Pakistan	1	42	0%	\$31
Colombia	2	36	100%	\$0
Morocco	2	35	100%	\$0
Ecuador	1	34	100%	\$0
Iraq	1	30	0%	\$60

24. Computer Science

Key Facts, Computer Science

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	396	21,599			\$884	-27%
Fee	169	13,020	60%	-7%	\$1,467	-21%
No-fee	227	8,579	40%	14%		

Relatively inexpensive for science.

Articles and Journals by Year, Computer Science

	2020	2019	2018	2017	2016	2015
Journals	364	371	360	345	311	284
%No-fee	57%	58%	60%	61%	61%	61%
Articles	21,599	18,872	17,862	15,098	14,003	11,846
%No-fee	40%	45%	46%	52%	51%	48%
Change	14%	6%	18%	8%	18%	

Article Volume, Computer Science

	Journals	Articles	%No-fee	\$/article
Largest: 600+	3	3,212	38%	\$542
Large: 150-599	31	7,233	17%	\$1,518
Med.: 60-149	78	5,449	48%	\$760
Small: 20-59	210	5,087	61%	\$411
Smallest: 0-19	74	618	65%	\$234

Unusual for STEM: most articles are in the three middle sizes and the largest journals are less expensive than large or medium journals.

Fees and Revenue, Computer Science

	Journals	Articles	Revenue	\$/article
\$1,400+	62	7,622	\$15,839,513	\$2,078
\$600-\$1,399	45	3,474	\$2,974,482	\$856
\$200-\$599	16	551	\$219,430	\$398
\$0.20-\$199	46	1,373	\$64,718	\$47
No fee	227	8,579		
Total	396	21,599	\$19,098,143	\$884

Region, Computer Science

Region	Journals	Articles	%No-fee	\$/article
Western Europe	143	10,599	27%	\$1,291
Pacific/English	35	4,576	24%	\$1,097
Eastern Europe	88	3,088	83%	\$66
Asia	90	2,207	51%	\$40
Middle East	18	546	73%	\$127
Latin America	18	521	100%	\$0
Africa	4	62	15%	\$519

Publisher Category, Computer Science

Category	Journals	Articles	%No-fee	\$/article
Traditional	94	8,294	12%	\$1,462
Univ./college	201	7,438	72%	\$184
Open Access	51	4,204	25%	\$1,131
Society/govt	50	1,663	69%	\$507

Country of Publication, Computer Science, 40+ 2020 articles

In addition to these 33 countries, 21 others published at least one but fewer than 40 articles in 2020. Fifteen of those had no fees, as did 18 of the 33 most active countries.

Country	Journals	Articles	%no-fee	\$/article
United Kingdom	68	4,092	3%	\$1,864
United States	26	3,390	22%	\$1,011
Switzerland	24	2,540	1%	\$1,472
Germany	14	1,994	80%	\$263
Indonesia	69	1,667	38%	\$37
Canada	6	894	6%	\$1,781
Russia	16	811	100%	\$0
Netherlands	6	794	14%	\$1,876
Ukraine	14	755	70%	\$6
Poland	19	742	85%	\$115
France	7	568	63%	\$533
Romania	16	309	61%	\$197
Australia	2	291	100%	\$0
Iran	11	283	83%	\$12
Cuba	3	272	100%	\$0
China	5	240	100%	\$0
Spain	7	166	100%	\$0
Brazil	7	147	100%	\$0
Finland	2	143	100%	\$0
Saudi Arabia	1	131	100%	\$0
Serbia	5	131	100%	\$0
Belgium	8	121	100%	\$0
Belarus	3	100	100%	\$0
India	3	92	100%	\$0
Austria	1	68	100%	\$0
Portugal	3	64	100%	\$0
Egypt	1	63	0%	\$1,000
Latvia	2	63	30%	\$796
South Africa	3	60	12%	\$537
Pakistan	2	50	100%	\$0
Singapore	2	49	100%	\$0
Georgia	1	40	100%	\$0
Malaysia	2	40	100%	\$0

25. Earth Sciences

Key Facts, Earth Sciences

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	506	32,131			\$1,086	-10%
Fee	150	19,886	62%	-5%	\$1,754	-5%
No-fee	356	12,245	38%	9%		

Articles and Journals by Year, Earth Sciences

	2020	2019	2018	2017	2016	2015
Journals	484	492	488	472	450	414
%No-fee	70%	70%	71%	71%	72%	72%
Articles	32,131	26,915	24,232	20,052	18,758	16,947
%No-fee	38%	43%	45%	52%	54%	53%
Change	19%	11%	21%	7%	11%	

Article Volume, Earth Sciences

	Journals	Articles	%No-fee	\$/article
Largest: 600+	8	10,880	0%	\$2,274
Large: 150-599	34	6,648	36%	\$808
Med.: 60-149	96	6,449	56%	\$486
Small: 20-59	268	7,216	75%	\$215
Smallest: 0-19	100	938	85%	\$97

Note the sharp price differential between largest and other journals—2.8 to 1.

Fees and Revenue, Earth Sciences

	Journals	Articles	Revenue	\$/article
\$1,400+	44	13,829	\$30,687,771	\$2,219
\$600-\$1.399	48	3,544	\$3,737,388	\$1,055
\$200-\$599	22	788	\$319,559	\$406
\$0.20-\$199	36	1,725	\$142,349	\$83
No fee	356	12,245		
Total	506	32,131	\$34,887,067	\$1,086

Region, Earth Sciences

Region	Journals	Articles	%No-fee	\$/article
Western Europe	164	18,981	14%	\$1,703
Latin America	96	4,044	84%	\$15
Eastern Europe	130	3,489	82%	\$72
Asia	59	2,742	70%	\$146
Pacific/English	19	1,494	13%	\$1,233
Middle East	32	958	84%	\$14
Africa	6	423	90%	\$5

The cost variations among regions could scarcely be starker.

Publisher Category, Earth Sciences

Category	Journals	Articles	%No-fee	\$/article
Open Access	64	12,290	8%	\$1,774
Univ./college	265	8,730	82%	\$73
Traditional	96	7,539	36%	\$1,332
Society/govt	80	3,554	40%	\$678

OA publishers charge 24 times as much as university publishers.

Country of Publication, Earth Sciences, 80+ 2020 articles

Note the startling contrasts among the top six of 31 countries. Another 30 countries with fewer articles, including 19 with no fees

Country	Journals	Articles	%no-fee	\$/article
Switzerland	17	11,553	0%	\$2,239
Brazil	60	3,024	81%	\$18
United Kingdom	43	2,636	3%	\$1,644
Germany	33	2,251	30%	\$632
China	17	1,818	83%	\$46
Russia	31	1,520	97%	\$3
United States	15	1,400	10%	\$1,315
Netherlands	10	655	69%	\$501
France	12	654	63%	\$379
Poland	28	650	52%	\$316
Iran	20	572	74%	\$23
Ukraine	15	476	65%	\$7
Indonesia	25	466	59%	\$52
Spain	17	389	100%	\$0
Italy	10	380	88%	\$106
Colombia	9	337	100%	\$0
Turkey	10	280	100%	\$0
South Africa	2	266	100%	\$0
Mexico	5	228	65%	\$36
Serbia	9	201	100%	\$0
Argentina	9	158	95%	\$1
Cuba	5	158	100%	\$0
Japan	4	156	6%	\$1,512
Romania	15	148	100%	\$0
Portugal	4	126	100%	\$0
Egypt	2	106	100%	\$0
South Korea	3	101	22%	\$364
Austria	5	95	18%	\$441
Croatia	6	95	100%	\$0
Chile	4	85	100%	\$0
Slovenia	3	80	100%	\$0

26. Ecology

Key Facts, Ecology

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	472	60,733			\$1,357	13%
Fee	206	44,092	73%	12%	\$1,869	1%
No-fee	266	16,641	27%	-21%		

Articles and Journals by Year, Ecology

	2020	2019	2018	2017	2016	2015
Journals	449	449	421	398	369	337
%No-fee	55%	57%	59%	59%	59%	59%
Articles	60,733	43,886	33,917	24,155	20,340	16,840
%No-fee	27%	30%	34%	32%	35%	32%
Change	38%	29%	40%	19%	21%	

Very strong growth since 2017.

Article Volume, Ecology

	Journals	Articles	%No-fee	\$/article
Largest: 600+	10	38,871	22%	\$1,660
Large: 150-599	36	7,484	12%	\$1,317
Med.: 60-149	96	6,660	37%	\$675
Small: 20-59	244	6,941	57%	\$477
Smallest: 0-19	86	777	76%	\$286

The lowest no-fee percentage is in large rather than largest journals, but the largest journals charge the most (as usual).

Fees and Revenue, Ecology

	Journals	Articles	Revenue	\$/article
\$1,400+	77	35,210	\$77,052,281	\$2,188
\$600-\$1.399	51	4,322	\$4,324,882	\$1,001
\$200-\$599	29	2,500	\$868,611	\$347
\$0.20-\$199	49	2,060	\$158,173	\$77
No fee	266	16,641		
Total	472	60,733	\$82,403,947	\$1,357

The priciest journals yield more than half of articles and 93% of revenue.

Region, Ecology

Region	Journals	Articles	%No-fee	\$/article
Western Europe	149	47,803	22%	\$1,639
Asia	62	3,297	38%	\$234
Eastern Europe	89	3,070	46%	\$221
Latin America	84	2,892	76%	\$25
Pacific/English	39	2,181	25%	\$1,130
Middle East	36	1,190	58%	\$23
Africa	13	300	60%	\$119

Western Europe dominates, with three-quarters of all articles.

Publisher Category, Ecology

Category	Journals	Articles	%No-fee	\$/article
Open Access	72	29,051	3%	\$1,981
Traditional	137	21,495	48%	\$1,043
Univ./college	210	7,621	56%	\$202
Society/govt	52	2,546	43%	\$353

Unusual: almost half of traditional-publisher articles are no-fee.

Country of Publication, Ecology, 90+ 2020 articles

Another set of extremes in the top six of 30 countries shown. 30 more countries with fewer articles, including 23 with no fees at all,

Country	Journals	Articles	%no-fee	\$/article
Switzerland	20	26,586	0%	\$2,171
France	8	8,900	100%	\$5
United Kingdom	75	7,937	5%	\$2,075
Germany	15	2,622	16%	\$946
Brazil	50	1,997	66%	\$34
United States	31	1,882	27%	\$1,125
Indonesia	23	1,229	16%	\$214
Netherlands	13	1,131	25%	\$1,350
Iran	31	1,093	56%	\$24
Poland	27	927	42%	\$203
China	12	669	78%	\$182
India	6	609	17%	\$474
Russia	12	561	89%	\$52
Lithuania	4	393	0%	\$770
Italy	6	333	61%	\$92
Taiwan	2	327	26%	\$223
Mexico	6	260	88%	\$23
Ukraine	9	254	22%	\$54
Canada	6	232	17%	\$698
Spain	7	219	65%	\$339
Romania	9	193	83%	\$6
Bulgaria	9	183	9%	\$338
Serbia	5	183	43%	\$227
Costa Rica	3	176	100%	\$0
Montenegro	1	134	0%	\$171
Colombia	8	127	100%	\$0
Croatia	3	109	52%	\$163
South Korea	3	101	34%	\$110
Malaysia	5	93	100%	\$0
Nigeria	2	90	20%	\$73

27. Economics

Key Facts, Economics

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	941	28,086			\$155	-87%
Fee	235	11,472	41%	-37%	\$381	-79%
No-fee	706	16,614	59%	70%		

More fee articles than most H&SS subjects.

Articles and Journals by Year, Economics

	2020	2019	2018	2017	2016	2015
Journals	869	903	889	868	806	733
%No-fee	74%	75%	75%	75%	75%	75%
Articles	28,086	25,962	25,244	24,460	22,914	20,524
%No-fee	59%	62%	62%	65%	63%	66%
Change	8%	3%	3%	7%	12%	

Article Volume, Economics

	Journals	Articles	%No-fee	\$/article
Largest: 600+	2	1,539	0%	\$317
Large: 150-599	28	4,570	22%	\$366
Med.: 60-149	113	6,268	59%	\$218
Small: 20-59	531	12,902	74%	\$61
Smallest: 0-19	267	2,807	86%	\$16

Not unusual for H&SS: most articles are in small journals.

Fees and Revenue, Economics

	Journals	Articles	Revenue	\$/article
\$1,400+	8	553	\$974,608	\$1,762
\$600-\$1.399	24	1,683	\$1,620,565	\$963
\$200-\$599	39	3,263	\$1,367,102	\$419
\$0.20-\$199	164	5,973	\$403,877	\$68
No fee	706	16,614		
Total	941	28,086	\$4,366,153	\$155

More revenue from midpriced journals than expensive ones.

Region, Economics

Region	Journals	Articles	%No-fee	\$/article
Eastern Europe	275	9,469	49%	\$86
Asia	214	5,435	50%	\$131
Latin America	202	4,909	99%	\$2
Western Europe	128	3,868	50%	\$580
Middle East	70	2,702	40%	\$163
Pacific/English	37	1,267	86%	\$39
Africa	15	436	61%	\$227

Distinctive, with relatively few articles in higher-priced regions.

Publisher Category, Economics

Category	Journals	Articles	%No-fee	\$/article
Univ./college	708	18,668	65%	\$45
Open Access	89	4,062	45%	\$353
Traditional	88	2,799	50%	\$528
Society/govt	56	2,557	48%	\$245

Two-thirds of articles are from universities and colleges.

Country of Publication, Economics, 120+ 2019 articles

Of these 32, seven have no fees. Of 38 others with at least one 2020 article (those with empty journals are omitted), 28 have no fees.

Country	Journals	Articles	%no-fee	\$/article
Indonesia	185	3,606	56%	\$34
Brazil	96	2,858	99%	\$0
Ukraine	35	2,650	11%	\$93
Turkey	35	1,756	43%	\$214
United Kingdom	43	1,663	34%	\$829
Romania	57	1,624	51%	\$32
Russia	31	1,436	90%	\$12
Poland	58	1,365	59%	\$92
South Korea	8	1,204	4%	\$489
Colombia	46	895	100%	\$0
Canada	10	833	100%	\$0
Iran	31	815	37%	\$54
Switzerland	7	688	9%	\$1,144
Serbia	23	459	91%	\$18
Spain	28	440	93%	\$77
Pakistan	9	425	100%	\$0
Lithuania	11	417	14%	\$416
United States	19	357	52%	\$138
Mexico	14	323	100%	\$0
Croatia	17	310	87%	\$43
Sweden	5	268	85%	\$34
Argentina	16	241	100%	\$0
Bulgaria	5	209	29%	\$45
Netherlands	8	207	98%	\$1
Czechia	12	195	67%	\$128
Venezuela	5	194	92%	\$37
Morocco	6	163	83%	\$17
Latvia	3	160	11%	\$755
Italy	8	151	81%	\$27
Montenegro	2	148	100%	\$0
South Africa	6	142	0%	\$676
Ecuador	6	121	100%	\$0

28. Education

Key Facts, Education

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	974	33,807			\$70	-94%
Fee	182	7,301	22%	-67%	\$325	-82%
No-fee	792	26,506	78%	125%		

Even more no-fee and lower priced than H&SS as a whole.

Articles and Journals by Year, Education

	2020	2019	2018	2017	2016	2015
Journals	914	937	923	894	821	743
%No-fee	81%	81%	81%	82%	83%	84%
Articles	33,807	31,746	29,582	27,020	24,153	20,379
%No-fee	78%	80%	80%	81%	82%	83%
Change	6%	7%	9%	12%	19%	

Modest growth every year since 2017.

Article Volume, Education

	Journals	Articles	%No-fee	\$/article
Largest: 600+	1	0		
Large: 150-599	25	5,027	63%	\$269
Med.: 60-149	182	12,275	80%	\$32
Small: 20-59	555	14,196	82%	\$40
Smallest: 0-19	211	2,309	84%	\$25

Most articles are in small and medium-sized journals.

Fees and Revenue, Education

	Journals	Articles	Revenue	\$/article
\$1,400+	4	482	\$717,970	\$1,490
\$600-\$1,399	15	764	\$718,595	\$941
\$200-\$599	26	1,921	\$714,529	\$372
\$0.20-\$199	137	4,134	\$223,008	\$54
No fee	792	26,506		
Total	974	33,807	\$2,374,103	\$70

Oddly even revenue in three higher fee brackets,

Region, Education

Region	Journals	Articles	%No-fee	\$/article
Latin America	281	14,247	98%	\$5
Western Europe	194	6,058	72%	\$261
Asia	225	5,070	38%	\$54
Pacific/English	105	2,837	89%	\$49
Eastern Europe	90	2,760	62%	\$45
Middle East	68	2,443	81%	\$30
Africa	11	392	28%	\$297

In GOA5, there were *no* fees in Latin American journals. Still very few.

Publisher Category, Education

Category	Journals	Articles	%No-fee	\$/article
Univ./college	787	27,570	80%	\$29
Open Access	73	2,533	66%	\$291
Society/govt	79	2,423	87%	\$41
Traditional	35	1,281	45%	\$568

Mostly universities (four out of five articles), as you might expect.

Country of Publication, Education, 140+ 2020 articles

The US stands out among the seven largest because it has fees averaging more than \$32. (But not *much* more.) Of the 33 listed, 12 have no fees; of 35 others, 29 are entirely fee-free.

Country	Journals	Articles	%no-fee	\$/article
Brazil	165	9,739	97%	\$6
Indonesia	197	4,259	36%	\$32
United States	68	1,906	86%	\$68
Spain	71	1,884	98%	\$8
Turkey	45	1,738	95%	\$16
Cuba	15	1,661	100%	\$0
Colombia	32	990	100%	\$0
United Kingdom	37	972	68%	\$291
Germany	14	938	38%	\$370
Ukraine	21	854	28%	\$22
Switzerland	2	676	0%	\$1,265
Canada	22	541	100%	\$0
Russia	9	507	55%	\$110
Iran	17	506	52%	\$58
Argentina	17	480	100%	\$0
Poland	16	417	74%	\$108
Italy	14	413	100%	\$0
Costa Rica	7	378	100%	\$0
Norway	18	359	79%	\$192
South Africa	9	359	21%	\$325
Pakistan	7	274	30%	\$299
Australia	11	268	80%	\$29
Mexico	13	255	100%	\$0
Peru	6	189	69%	\$31
Czechia	8	182	89%	\$12
Romania	10	181	91%	\$10
Chile	7	150	100%	\$0
France	6	147	100%	\$0
Serbia	8	147	100%	\$0
Ecuador	5	142	100%	\$0
Iraq	2	140	0%	\$120
Lithuania	4	140	100%	\$0
Netherlands	3	140	93%	\$50

29. Engineering

Key Facts, Engineering

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	515	57,699			\$1,337	11%
Fee	193	46,648	81%	24%	\$1,654	-11%
No-fee	322	11,051	19%	-45%		

Articles and Journals by Year, Engineering

	2020	2019	2018	2017	2016	2015
Journals	477	487	465	439	403	370
%No-fee	60%	63%	66%	67%	67%	67%
Articles	57,699	51,559	37,746	27,484	22,253	17,907
%No-fee	19%	23%	31%	40%	44%	50%
Change	12%	37%	37%	24%	24%	

Good growth after four years of strong to very strong growth.

Article Volume, Engineering

	Journals	Articles	%No-fee	\$/article
Largest: 600+	14	34,342	1%	\$1,849
Large: 150-599	37	7,419	23%	\$872
Med.: 60-149	128	8,725	49%	\$592
Small: 20-59	247	6,384	65%	\$305
Smallest: 0-19	89	829	80%	\$112

Most articles are in the largest and most expensive journals.

Fees and Revenue, Engineering

	Journals	Articles	Revenue	\$/article
\$1,400+	59	36,428	\$71,046,296	\$1,950
\$600-\$1.399	43	4,720	\$4,651,377	\$985
\$200-\$599	40	3,689	\$1,334,572	\$362
\$0.20-\$199	51	1,811	\$129,745	\$72
No fee	322	11,051		
Total	515	57,699	\$77,161,990	\$1,337

11% of journals take in 92% of revenues, publish 63% of articles.

Region, Engineering

Region	Journals	Articles	%No-fee	\$/article
Western Europe	109	22,386	5%	\$1,852
Pacific/English	22	18,765	1%	\$1,752
Eastern Europe	142	6,183	57%	\$187
Asia	102	4,226	42%	\$206
Middle East	52	3,293	66%	\$205
Latin America	79	2,634	85%	\$36
Africa	9	212	67%	\$144

Publisher Category, Engineering

Category	Journals	Articles	%No-fee	\$/article
Society/govt	45	19,990	3%	\$1,652
Traditional	123	14,030	10%	\$1,537
Open Access	48	11,964	5%	\$1,819
Univ./college	298	11,702	72%	\$70

Country of Publication, Engineering, 130+ 2020 articles

33 countries listed, of which nine have no fees. Another 32 with fewer articles, 25 of them with no fees.

Country	Journals	Articles	%no-fee	\$/article
United States	14	18,505	0%	\$1,753
Switzerland	13	10,713	0%	\$2,147
United Kingdom	58	8,184	3%	\$1,932
Netherlands	12	2,368	10%	\$975
China	14	1,669	32%	\$388
Brazil	21	1,272	69%	\$74
Indonesia	61	1,224	53%	\$27
Poland	39	1,193	33%	\$374
Turkey	14	1,116	100%	\$0
Serbia	18	1,010	54%	\$94
Iran	23	922	89%	\$11
Malaysia	13	831	22%	\$223
Egypt	2	741	0%	\$860
Croatia	6	638	22%	\$486
Colombia	26	615	100%	\$0
Russia	13	594	92%	\$8
Ukraine	17	565	60%	\$11
Romania	17	553	79%	\$8
Greece	2	343	37%	\$215
Lithuania	5	316	2%	\$744
Iraq	8	309	8%	\$93
Czechia	6	276	72%	\$125
Germany	9	270	49%	\$220
Bosnia and Herzegovina	3	236	100%	\$0
Australia	5	207	18%	\$2,064
Italy	1	196	100%	\$0
France	5	161	0%	\$1,154
Hungary	4	155	100%	\$0
Slovenia	2	154	84%	\$36
India	3	149	100%	\$0
Belarus	3	141	100%	\$0
South Korea	2	137	100%	\$0
Costa Rica	3	133	100%	\$0

30. History

Key Facts, History

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	495	13,904			\$16	-99%
Fee	26	1,076	8%	-88%	\$207	-89%
No-fee	469	12,828	92%	164%		

Extremely low costs and high no-fee percentage, even for H&SS.

Articles and Journals by Year, History

	2020	2019	2018	2017	2016	2015
Journals	453	478	475	462	429	399
%No-fee	95%	95%	95%	95%	95%	95%
Articles	13,904	13,199	13,324	12,954	12,306	12,083
%No-fee	92%	92%	92%	92%	91%	91%
Change	5%	-1%	3%	5%	2%	

Article Volume, History

	Journals	Articles	%No-fee	\$/article
Largest: 600+	1	120	100%	\$0
Large: 150-599	8	883	61%	\$122
Med.: 60-149	62	3,909	89%	\$9
Small: 20-59	297	7,880	97%	\$3
Smallest: 0-19	127	1,112	96%	\$49

Most articles are in small journals (as is common for H&SS).

Fees and Revenue, History

	Journals	Articles	Revenue	\$/article
\$1,400+	1	15	\$48,825	\$3,255
\$200-\$599	5	377	\$128,720	\$341
\$0.20-\$199	20	684	\$45,187	\$66
No fee	469	12,828		

In GOA5, there were no \$1,400+ journals. Now there's one—but none charging \$600-\$1,399.

Region, History

Region	Journals	Articles	%No-fee	\$/article
Western Europe	200	4,757	95%	\$18
Latin America	130	4,493	100%	\$0
Eastern Europe	94	3,206	81%	\$37
Middle East	20	709	80%	\$15
Pacific/English	33	471	100%	\$0
Asia	15	219	75%	\$20
Africa	3	49	35%	\$87

No other subject has less than \$45 as average Western Europe fee.

Publisher Category, History

Category	Journals	Articles	%No-fee	\$/article
Univ./college	418	11,333	93%	\$15
Society/govt	38	1,308	98%	\$2
Open Access	33	1,126	74%	\$46
Traditional	6	137	100%	\$0

Universities dominate; almost no traditional involvement, all of it free.

Country of Publication, History, 50+ 2020 articles

Of 31 countries listed, 20 have no fees. Another 16 countries had one to 49 articles in 2020, 14 of the 16 with no fees.

Country	Journals	Articles	%no-fee	\$/article
Brazil	63	2,729	100%	\$0
Spain	79	1,977	97%	\$5
Russia	21	1,292	73%	\$84
Argentina	33	859	100%	\$0
Italy	34	727	89%	\$7
France	24	685	100%	\$0
Ukraine	14	589	65%	\$14
Turkey	14	478	100%	\$0
United States	21	362	100%	\$0
Colombia	13	312	100%	\$0
Portugal	13	306	100%	\$0
Serbia	9	288	100%	\$0
United Kingdom	14	282	83%	\$217
Mexico	8	277	100%	\$0
Netherlands	5	242	100%	\$0
Chile	10	240	100%	\$0
Romania	9	212	95%	\$2
Poland	14	198	100%	\$0
Norway	6	151	100%	\$0
Indonesia	11	135	78%	\$17
Croatia	7	131	100%	\$0
Iran	5	128	70%	\$23
Finland	5	112	100%	\$0
Czechia	5	110	100%	\$0
Iraq	1	103	0%	\$75
Austria	7	102	100%	\$0
Germany	6	92	55%	\$102
Hungary	2	82	100%	\$0
Moldova	2	79	34%	\$10
Canada	7	75	100%	\$0
Bulgaria	2	52	100%	\$0

31. Language & Literature

Key Facts, Language & Literature

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	984	25,713			\$26	-98%
Fee	105	3,231	13%	-81%	\$207	-89%
No-fee	879	22,482	87%	151%		

Low-cost and mostly no-fee even by H&SS standards.

Articles and Journals by Year, Language & Literature

	2020	2019	2018	2017	2016	2015
Journals	895	943	937	903	857	807
%No-fee	89%	89%	89%	90%	90%	91%
Articles	25,713	25,432	24,827	24,415	22,190	19,476
%No-fee	87%	88%	86%	86%	87%	88%
Change	1%	2%	2%	10%	14%	

Very slow growth since 2017.

Article Volume, Language & Literature

	Journals	Articles	%No-fee	\$/article
Large: 150-599	11	1,153	54%	\$65
Med.: 60-149	129	7,749	91%	\$37
Small: 20-59	569	14,357	88%	\$18
Smallest: 0-19	275	2,454	91%	\$24

No very large journals, and most articles are in small journals.

Fees and Revenue, Language & Literature

	Journals	Articles	Revenue	\$/article
\$600-\$1,399	7	221	\$224,809	\$1,017
\$200-\$599	18	743	\$291,376	\$392
\$0.20-\$199	80	2,267	\$153,192	\$68
No fee	879	22,482		
Total	984	25,713	\$669,378	\$26

No really expensive journals and very little revenue overall. The average cost has *declined* slightly from GOA5.

Region, Language & Literature

Region	Journals	Articles	%No-fee	\$/article
Latin America	199	7,477	100%	\$0
Western Europe	344	7,205	91%	\$47
Eastern Europe	189	5,280	90%	\$15
Asia	133	2,794	54%	\$34
Pacific/English	68	1,444	80%	\$46
Middle East	40	1,229	72%	\$27
Africa	11	284	52%	\$210

Africa (with very few articles) has the only average \$50 or higher.

Publisher Category, Language & Literature

Category	Journals	Articles	%No-fee	\$/article
Univ./college	797	21,835	89%	\$11
Society/govt	60	1,602	90%	\$26
Open Access	85	1,584	69%	\$167
Traditional	41	674	74%	\$180

Universities dominate, which is frequently the case in H&SS.

Country of Publication, Language & Literature, 130+ 2020 articles

Brazil has more than twice as many articles as Spain, neither with any fees. Of 33 countries listed, 18 have no fees. Another 29 countries published at least one 2020 article; only one of them had any fees, and that one—Switzerland with 101 articles—has *by far* the highest average fees.

Country	Journals	Articles	%no-fee	\$/article
Brazil	131	5,716	100%	\$0
Spain	109	2,426	100%	\$0
Indonesia	111	2,242	48%	\$28
Italy	64	1,938	87%	\$14
Russia	31	1,783	92%	\$12
Poland	51	1,221	95%	\$26
United States	47	981	84%	\$42
France	58	892	100%	\$0
Argentina	23	675	100%	\$0
Turkey	17	672	94%	\$26
United Kingdom	28	540	46%	\$381
Romania	21	515	74%	\$28
Iran	21	482	37%	\$34
Colombia	17	410	100%	\$0
Ukraine	14	387	45%	\$36
Czechia	12	328	100%	\$0
Australia	10	273	51%	\$90
Slovenia	11	244	100%	\$0
Germany	16	227	99%	\$3
Norway	17	223	100%	\$0
Mexico	9	220	100%	\$0
Lithuania	12	196	100%	\$0
Portugal	11	194	100%	\$0
Chile	7	193	100%	\$0
Croatia	9	191	100%	\$0
Canada	11	190	100%	\$0
Belgium	10	182	100%	\$0
India	6	181	100%	\$0
South Africa	7	167	19%	\$358
Malaysia	4	166	37%	\$190
Netherlands	10	158	87%	\$57
Estonia	6	138	100%	\$0
Sweden	6	130	100%	\$0

32. Law

Key Facts, Law

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	470	13,055			\$57	-95%
Fee	54	1,884	14%	-78%	\$398	-78%
No-fee	416	11,171	86%	145%		

Few fee articles even by H&SS standards.

Articles and Journals by Year, Law

	2020	2019	2018	2017	2016	2015
Journals	435	445	436	420	390	357
%No-fee	88%	89%	89%	89%	90%	90%
Articles	13,055	12,412	12,336	11,375	10,720	9,542
%No-fee	86%	86%	88%	88%	88%	87%
Change	5%	1%	8%	6%	12%	

Modest growth since 2016.

Article Volume, Law

	Journals	Articles	%No-fee	\$/article
Large: 150-599	6	997	78%	\$7
Med.: 60-149	62	3,737	84%	\$113
Small: 20-59	286	7,158	87%	\$42
Smallest: 0-19	116	1,163	88%	\$18

No very large journals. Most articles in small journals.

Fees and Revenue, Law

	Journals	Articles	Revenue	\$/article
\$1,400+	5	265	\$418,852	\$1,581
\$600-\$1,399	5	219	\$200,752	\$917
\$200-\$599	6	116	\$40,722	\$351
\$0.20-\$199	38	1,284	\$88,813	\$69
No fee	416	11,171		
Total	470	13,055	\$749,139	\$57

Five expensive journals with 2% of articles earn 56% of the revenue.

Region, Law

Region	Journals	Articles	%No-fee	\$/article
Latin America	155	4,627	100%	\$0
Western Europe	117	3,475	86%	\$173
Eastern Europe	80	2,288	85%	\$15
Asia	74	1,438	67%	\$24
Middle East	17	701	42%	\$30
Pacific/English	19	265	87%	\$141
Africa	8	261	54%	\$84

Another H&SS field where Latin America leads, with no fees at all.

Publisher Category, Law

Category	Journals	Articles	%No-fee	\$/article
Univ./college	374	10,251	89%	\$15
Society/govt	37	1,253	74%	\$24
Open Access	40	985	86%	\$119
Traditional	19	566	39%	\$783

Unsurprisingly, universities dominate.

Country of Publication, Law, 60+ 2019 articles

Four of the top five countries have essentially no fees. Netherlands stands out as the only four-digit average cost. Of 31 countries listed, 17 have no fees; of 23 with fewer articles, only one has fees.

Country	Journals	Articles	%no-fee	\$/article
Brazil	83	2,834	100%	\$0
Indonesia	68	1,333	64%	\$26
Spain	37	1,167	100%	\$0
Italy	23	860	100%	\$0
Colombia	35	719	100%	\$0
United Kingdom	25	700	74%	\$372
Russia	16	647	91%	\$4
Turkey	5	381	41%	\$18
Poland	17	353	84%	\$25
Argentina	8	336	100%	\$0
Ukraine	10	333	50%	\$40
Serbia	9	289	100%	\$0
Netherlands	6	253	12%	\$1,046
Chile	9	222	100%	\$0
Iran	8	211	48%	\$18
Croatia	8	208	100%	\$0
South Africa	6	167	29%	\$131
Germany	6	163	100%	\$0
Peru	6	162	100%	\$0
Romania	6	162	61%	\$61
Australia	8	138	100%	\$0
United States	8	112	69%	\$333
Switzerland	5	104	69%	\$328
Lithuania	4	92	100%	\$0
Ecuador	4	91	100%	\$0
Algeria	1	81	100%	\$0
Norway	6	81	77%	\$311
Iraq	1	72	0%	\$150
France	3	69	100%	\$0
Slovakia	3	62	100%	\$0
Venezuela	1	60	100%	\$0

33. Library Science

Key Facts, Library Science

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	170	4,291			\$28	-98%
Fee	9	176	4%	-94%	\$677	-63%
No-fee	161	4,115	96%	175%		

Very few fee articles.

Articles and Journals by Year, Library Science

	2020	2019	2018	2017	2016	2015
Journals	155	160	163	155	148	141
%No-fee	94%	94%	94%	94%	94%	94%
Articles	4,291	4,132	4,311	4,153	3,713	3,296
%No-fee	96%	95%	95%	96%	95%	96%
Change	4%	-4%	4%	12%	13%	

Essentially flat since 2018.

Article Volume, Library Science

	Journals	Articles	%No-fee	\$/article
Large: 150-599	2	244	100%	\$0
Med.: 60-149	21	1,377	96%	\$60
Small: 20-59	99	2,232	95%	\$15
Smallest: 0-19	48	438	96%	\$7

Typical H&SS: most articles are in small journals.

Fees and Revenue, Library Science

	Journals	Articles	Revenue	\$/article
\$1,400+	1	55	\$81,981	\$1,491
\$600-\$1,399	1	24	\$22,800	\$950
\$200-\$599	2	25	\$8,270	\$331
\$0.01-\$199	5	72	\$6,159	\$86
No fee	161	4,115		
Total	170	4,291	\$119,210	\$28

Almost no revenue overall.

Region, Library Science

Region	Journals	Articles	%No-fee	\$/article
Latin America	40	1,375	100%	\$0
Western Europe	44	1,191	91%	\$95
Pacific/English	29	646	100%	\$0
Eastern Europe	28	482	97%	\$1
Middle East	10	301	94%	\$10
Asia	17	278	91%	\$5
Africa	2	18	28%	\$88

Unusual: Pacific/English is entirely no-fee.

Publisher Category, Library Science

Category	Journals	Articles	%No-fee	\$/article
Univ./college	122	2,927	98%	\$2
Society/govt	23	738	100%	\$0
Open Access	23	586	86%	\$154
Traditional	2	40	40%	\$570

Country of Publication, Library Science, 23+ 2020 articles

Brazil being tops in an H&SS subject with no fees isn't unusual. The US being second, *also* with no fees: that's unusual. Of the 32 countries listed, only three have fees. Of 15 countries with fewer articles, three have fees.

Country	Journals	Articles	%no-fee	\$/article
Brazil	26	948	100%	\$0
United States	26	521	100%	\$0
Ukraine	8	248	94%	\$1
United Kingdom	12	238	89%	\$35
Colombia	2	158	100%	\$0
Germany	4	158	100%	\$0
Iran	5	155	100%	\$0
Netherlands	3	145	100%	\$0
Spain	10	139	100%	\$0
Italy	4	135	100%	\$0
Canada	3	125	100%	\$0
Poland	11	120	100%	\$0
Indonesia	6	115	83%	\$6
Turkey	2	97	100%	\$0
Portugal	3	89	100%	\$0
Switzerland	3	85	7%	\$1,233
Sweden	1	72	100%	\$0
Austria	1	66	100%	\$0
Cuba	2	66	100%	\$0
Argentina	2	57	100%	\$0
Finland	1	40	100%	\$0
Mexico	1	40	100%	\$0
Uruguay	1	40	100%	\$0
South Korea	2	38	100%	\$0
China	1	34	100%	\$0
Taiwan	3	33	100%	\$0
Costa Rica	2	31	100%	\$0
India	1	30	100%	\$0
Lithuania	2	26	100%	\$0
Norway	2	24	100%	\$0
Croatia	2	23	100%	\$0
Slovakia	1	23	100%	\$0

34. Mathematics

Key Facts, Mathematics

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	320	17,837			\$1,014	-16%
Fee	98	11,253	63%	-3%	\$1,607	-13%
No-fee	222	6,584	37%	6%		

Articles and Journals by Year, Mathematics

	2020	2019	2018	2017	2016	2015
Journals	305	307	302	285	260	234
%No-fee	69%	69%	69%	69%	70%	70%
Articles	17,837	13,365	12,034	10,316	9,529	10,517
%No-fee	37%	45%	48%	55%	53%	44%
Change	33%	11%	17%	8%	-9%	

Very rapid growth in 2020.

Article Volume, Mathematics

	Journals	Articles	%No-fee	\$/article
Largest: 600+	4	6,595	0%	\$2,052
Large: 150-599	13	2,532	25%	\$927
Med.: 60-149	44	3,313	60%	\$420
Small: 20-59	165	4,446	73%	\$158
Smallest: 0-19	94	951	75%	\$118

The average-cost discrepancy between largest and large is growing.

Fees and Revenue, Mathematics

	Journals	Articles	Revenue	\$/article
\$1,400+	21	8,122	\$16,088,756	\$1,981
\$600-\$1,399	32	2,011	\$1,911,182	\$950
\$200-\$599	5	83	\$30,623	\$369
\$0.20-\$199	40	1,037	\$56,701	\$55
No fee	222	6,584		
Total	320	17,837	\$18,087,262	\$1,014

In GOA5, priciest journals were two-thirds of revenue. Now: 89%.

Region, Mathematics

Region	Journals	Articles	%No-fee	\$/article
Western Europe	75	9,555	9%	\$1,747
Eastern Europe	88	2,495	79%	\$135
Pacific/English	26	2,224	49%	\$443
Asia	64	1,409	46%	\$37
Latin America	35	1,355	95%	\$4
Middle East	28	742	97%	\$5
Africa	4	57	79%	\$147

Publisher Category, Mathematics

Category	Journals	Articles	%No-fee	\$/article
Traditional	70	7,180	10%	\$1,765
Univ./college	189	5,415	81%	\$41
Open Access	37	4,621	20%	\$1,119
Society/govt	24	621	96%	\$30

OA publishers charge more than three times average cost of Traditional.

Country of Publication, Mathematics, 30+ 2020 articles

Of 33 countries listed, 20 have no fees. Of another 14 with fewer articles in 2020, 11 have no fees.

Country	Journals	Articles	%no-fee	\$/article
United Kingdom	34	6,035	2%	\$2,015
Switzerland	9	2,711	1%	\$1,643
United States	22	1,847	38%	\$533
Brazil	22	1,084	94%	\$5
Indonesia	52	1,068	31%	\$47
Poland	34	924	58%	\$352
Ukraine	15	465	85%	\$3
Russia	10	435	91%	\$4
Iran	15	403	100%	\$0
Turkey	11	316	100%	\$0
Australia	1	248	100%	\$0
Spain	8	186	73%	\$214
France	7	168	74%	\$257
Germany	4	164	100%	\$0
Lithuania	6	152	90%	\$22
Italy	8	149	81%	\$13
Romania	9	142	100%	\$0
India	2	133	84%	\$9
Pakistan	4	126	100%	\$0
Czechia	4	108	100%	\$0
Colombia	5	107	100%	\$0
Hungary	1	91	100%	\$0
Canada	1	80	100%	\$0
Serbia	3	65	100%	\$0
Finland	1	61	100%	\$0
Argentina	3	56	100%	\$0
Croatia	3	53	100%	\$0
New Zealand	2	49	100%	\$0
Austria	1	41	100%	\$0
Morocco	2	41	100%	\$0
Belarus	1	36	100%	\$0
Peru	1	35	100%	\$0
Mexico	1	30	100%	\$0

35. Media & Communications

Key Facts, Media & Communications

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	313	9,225			\$66	-95%
Fee	24	1,109	12%	-82%	\$550	-70%
No-fee	289	8,116	88%	152%		

High no-fee percentage and low average cost.

Articles and Journals by Year, Media & Communications

	2020	2019	2018	2017	2016	2015
Journals	291	296	296	287	276	256
%No-fee	92%	92%	92%	92%	92%	93%
Articles	9,225	8,593	8,494	8,236	7,324	6,721
%No-fee	88%	88%	90%	91%	92%	93%
Change	7%	1%	3%	12%	9%	

Essentially flat since 2017, with some growth in 2020.

Article Volume, Media & Communications

	Journals	Articles	%No-fee	\$/article
Large: 150-599	5	953	54%	\$421
Med.: 60-149	39	2,381	89%	\$54
Small: 20-59	205	5,245	93%	\$14
Smallest: 0-19	64	646	91%	\$15

No largest journals, most articles in small journals: typical H&SS.

Fees and Revenue, Media & Communications

	Journals	Articles	Revenue	\$/article
\$600-\$1.399	6	613	\$561,137	\$915
\$200-\$599	2	10	\$3,027	\$303
\$0.20-\$199	16	486	\$46,112	\$95
No fee	289	8,116		
Total	313	9,225	\$610,276	\$66

Region, Media & Communications

Region	Journals	Articles	%No-fee	\$/article
Western Europe	118	3,659	80%	\$157
Latin America	92	3,471	100%	\$0
Pacific/English	34	768	94%	\$9
Eastern Europe	30	611	87%	\$12
Asia	26	422	58%	\$42
Middle East	13	294	78%	\$10

Publisher Category, Media & Communications

Category	Journals	Articles	%No-fee	\$/article
Univ./college	248	7,017	93%	\$21
Society/govt	30	1,042	92%	\$7
Open Access	25	686	65%	\$282
Traditional	10	480	36%	\$547

Predominantly university publishers; the few traditional are highest-cost.

Country of Publication, Media & Communications. 40+ 2020

No four-digit costs, and only four countries with three-digit averages. The 30 listed include 18 with no fees. Thirteen more with fewer articles include eleven with no fees.

Country	Journals	Articles	%no-fee	\$/article
Brazil	56	2,256	100%	\$0
Spain	41	1,288	85%	\$68
Argentina	12	550	100%	\$0
Portugal	13	464	61%	\$396
United States	19	425	92%	\$13
United Kingdom	15	409	55%	\$359
Indonesia	23	362	60%	\$43
Italy	13	320	100%	\$0
Turkey	11	263	83%	\$6
Switzerland	2	229	47%	\$506
France	8	192	91%	\$4
Germany	6	192	73%	\$212
Colombia	8	190	100%	\$0
Austria	4	188	100%	\$0
Canada	6	187	100%	\$0
Romania	9	183	100%	\$0
Chile	4	120	100%	\$0
Poland	5	120	100%	\$0
Peru	4	104	100%	\$0
Australia	8	100	91%	\$14
Cuba	2	97	100%	\$0
Netherlands	3	95	100%	\$0
Denmark	4	84	100%	\$0
Russia	4	79	43%	\$88
Ukraine	3	78	54%	\$7
Norway	4	75	100%	\$0
Ecuador	1	58	100%	\$0
Ireland	2	58	100%	\$0
Croatia	3	56	100%	\$0
New Zealand	1	56	100%	\$0

36. Medicine

Key Facts, Medicine

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	3,224	329,202			\$1,499	25%
Fee	1,614	240,550	73%	12%	\$2,052	11%
No-fee	1,610	88,652	27%	-23%		

By far the largest subject.

Articles and Journals by Year, Medicine

	2020	2019	2018	2017	2016	2015
Journals	3,093	3,101	3,004	2,886	2,681	2,467
%No-fee	49%	49%	50%	51%	51%	51%
Articles	329,202	262,062	233,328	206,825	192,808	181,114
%No-fee	27%	29%	32%	36%	37%	37%
Change	26%	12%	13%	7%	6%	

In GOA5 I said “likely to pass a quarter million in 2020.” With added journals in GOA6, that milestone happened in 2019.

Article Volume, Medicine

	Journals	Articles	%No-fee	\$/article
Largest: 600+	85	102,459	8%	\$2,289
Large: 150-599	467	108,015	18%	\$1,649
Med.: 60-149	980	74,628	47%	\$796
Small: 20-59	1,368	41,212	61%	\$487
Smallest: 0-19	324	2,888	57%	\$529

The biggest journals are *very* expensive.

Fees and Revenue, Medicine

	Journals	Articles	Revenue	\$/article
\$1,400+	861	182,645	\$462,497,118	\$2,532
\$600-\$1,399	315	25,105	\$23,125,023	\$921
\$200-\$599	199	18,872	\$6,683,364	\$354
\$0.20-\$199	239	13,928	\$1,293,676	\$93
No fee	1,610	88,652		
Total	3,224	329,202	\$493,599,180	\$1,499

The high-priced journals are 27% of journals, publish 55% of articles, and account for 94% of revenue.

Region, Medicine

Region	Journals	Articles	%No-fee	\$/article
Western Europe	1,215	180,284	10%	\$2,126
Pacific/English	329	47,075	12%	\$1,961
Asia	579	39,231	50%	\$270
Latin America	349	22,995	79%	\$90
Middle East	377	19,418	74%	\$89
Eastern Europe	332	17,532	64%	\$150
Africa	43	2,667	23%	\$361

Pretty much what you'd expect.

Publisher Category, Medicine

Category	Journals	Articles	%No-fee	\$/article
Traditional	1,195	163,559	11%	\$2,128
Open Access	681	77,947	28%	\$1,220
Univ./college	983	59,794	55%	\$643
Society/govt	364	27,869	55%	\$430

Country of Publication, Medicine, 100+ 2019 articles

A two-page list of 67 countries (15 with no fees) that's still far from complete (21 *more* countries, 16 with no fees). The top three in volume and average price are as expected.

Country	Journals	Articles	%no-fee	\$/article
United Kingdom	799	97,932	5%	\$2,361
Switzerland	99	47,971	2%	\$2,446
United States	255	39,556	11%	\$1,986
India	230	18,500	57%	\$210
Netherlands	94	16,696	14%	\$1,445
Brazil	174	15,093	71%	\$120
Iran	233	11,259	64%	\$113
Russia	92	6,359	94%	\$37
Spain	69	6,313	71%	\$380
Turkey	107	6,307	97%	\$7
South Korea	80	5,455	54%	\$244
China	43	5,130	40%	\$491
Poland	86	4,243	42%	\$337
Australia	36	4,216	12%	\$1,737
Indonesia	132	3,664	38%	\$53
Germany	35	3,413	61%	\$876
Canada	38	3,303	22%	\$1,952
Italy	54	3,212	25%	\$943
Cuba	38	2,595	100%	\$0
Ukraine	43	2,024	53%	\$51
Pakistan	19	1,967	15%	\$131
Romania	28	1,498	40%	\$135
Colombia	41	1,477	95%	\$5
South Africa	26	1,360	18%	\$498
Norway	7	1,055	98%	\$7
Hong Kong	8	1,051	22%	\$1,134
Sweden	6	943	47%	\$1,050
Portugal	20	910	100%	\$0
Argentina	17	899	81%	\$191
Nepal	15	883	76%	\$22
Greece	12	860	75%	\$371
Peru	14	853	100%	\$0
Saudi Arabia	6	726	57%	\$431

Country	Journals	Articles	%no-fee	\$/article
Bulgaria	7	685	25%	\$220
Taiwan	8	660	63%	\$407
Serbia	19	609	61%	\$54
Chile	12	549	70%	\$148
Mexico	15	507	100%	\$0
Croatia	14	502	100%	\$0
Nigeria	3	448	0%	\$268
Japan	10	437	24%	\$1,153
Ireland	4	352	13%	\$1,474
Czechia	9	350	25%	\$569
Iraq	12	349	16%	\$116
Cameroon	1	316	0%	\$208
Singapore	4	296	5%	\$1,277
Bosnia and Herzegovina	8	289	38%	\$368
Malaysia	6	285	28%	\$157
Bangladesh	8	278	100%	\$0
Costa Rica	7	266	100%	\$0
Sri Lanka	6	266	100%	\$0
Paraguay	11	253	100%	\$0
Oman	2	213	100%	\$0
France	5	205	38%	\$1,059
Iceland	1	200	100%	\$0
Uruguay	6	200	100%	\$0
Egypt	7	192	57%	\$71
Thailand	5	183	80%	\$20
United Arab Emirates	4	166	37%	\$273
Kenya	2	166	28%	\$542
Ecuador	7	149	100%	\$0
Finland	4	141	94%	\$16
Slovenia	4	139	57%	\$344
North Macedonia	2	136	100%	\$0
Moldova	2	134	0%	\$297
Belarus	1	112	100%	\$0
Slovakia	5	104	100%	\$0

37. Miscellany

Key Facts, Miscellany

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	241	12,421			\$169	-86%
Fee	40	3,811	31%	-53%	\$551	-70%
No-fee	201	8,610	69%	99%		

Little to say about this mixed lot.

Articles and Journals by Year, Miscellany

	2020	2019	2018	2017	2016	2015
Journals	220	226	224	218	202	181
%No-fee	82%	84%	85%	85%	85%	84%
Articles	12,421	11,205	10,425	9,031	7,642	6,572
%No-fee	69%	76%	80%	78%	72%	65%
Change	11%	7%	15%	18%	16%	

Article Volume, Miscellany

	Journals	Articles	%No-fee	\$/article
Largest: 600+	4	3,071	69%	\$24
Large: 150-599	12	2,476	49%	\$544
Med.: 60-149	45	3,037	64%	\$184
Small: 20-59	141	3,421	87%	\$34
Smallest: 0-19	39	416	89%	\$13

Fees and Revenue, Miscellany

	Journals	Articles	Revenue	\$/article
\$1,400+	3	289	\$478,693	\$1,656
\$600-\$1,399	9	1,482	\$1,475,883	\$996
\$200-\$599	1	10	\$4,248	\$425
\$0.20-\$199	27	2,030	\$142,767	\$70
No fee	201	8,610	\$0	\$0
Total	241	12,421	\$2,101,592	\$169

Region, Miscellany

Region	Journals	Articles	%No-fee	\$/article
Western Europe	59	4,378	73%	\$337
Latin America	86	4,151	76%	\$19
Eastern Europe	38	1,464	60%	\$24
Asia	23	783	60%	\$12
Pacific/English	13	738	24%	\$611
Middle East	14	672	82%	\$26
Africa	8	235	80%	\$137

Publisher Category, Miscellany

Category	Journals	Articles	%No-fee	\$/article
Univ./college	191	7,223	77%	\$17
Traditional	18	3,006	47%	\$569
Open Access	19	1,780	79%	\$145
Society/govt	13	412	60%	\$29

Country of Publication, Miscellany, 60+ 2020 articles

29 listed, 15 of which have no fees. An additional 24 with fewer articles includes 21 with no fees.

Country	Journals	Articles	%no-fee	\$/article
Brazil	38	1,919	95%	\$4
United Kingdom	18	1,260	19%	\$997
Switzerland	4	1,248	88%	\$176
France	9	1,174	100%	\$0
Chile	5	967	8%	\$74
United States	9	660	15%	\$684
Turkey	7	412	100%	\$0
Russia	5	374	37%	\$30
Colombia	15	365	100%	\$0
Ecuador	8	362	100%	\$0
Indonesia	11	358	25%	\$25
Spain	14	334	100%	\$0
India	3	281	84%	\$1
Poland	7	277	23%	\$51
Romania	5	192	100%	\$0
Ukraine	3	155	56%	\$25
Peru	6	132	100%	\$0
Mexico	4	111	100%	\$0
Costa Rica	2	106	100%	\$0
Portugal	3	105	100%	\$0
Italy	4	104	100%	\$0
Slovenia	3	99	100%	\$0
Lebanon	1	98	0%	\$150
Moldova	2	87	84%	\$3
Iraq	3	85	100%	\$0
Venezuela	2	80	100%	\$0
Algeria	1	78	100%	\$0
South Africa	4	69	30%	\$466
Estonia	2	67	36%	\$73

38. Other Sciences

Key Facts, Other Sciences

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	220	76,191			\$2,090	74%
Fee	87	70,716	93%	43%	\$2,252	22%
No-fee	133	5,475	7%	-79%		

Includes megajournals. The most expensive STEM “subject” and the only one over \$2,000—but biology’s even higher.

Articles and Journals by Year, Other Sciences

	2020	2019	2018	2017	2016	2015
Journals	202	207	203	193	185	163
%No-fee	58%	61%	63%	65%	66%	66%
Articles	76,191	65,015	59,573	64,927	62,706	53,472
%No-fee	7%	8%	8%	7%	7%	8%
Change	17%	9%	-8%	4%	17%	

Strong growth in 2020.

Article Volume, Other Sciences

	Journals	Articles	%No-fee	\$/article
Largest: 600+	12	64,539	0%	\$2,389
Large: 150-599	27	5,726	33%	\$527
Med.: 60-149	49	3,121	55%	\$419
Small: 20-59	106	2,524	64%	\$306
Smallest: 0-19	26	281	91%	\$43

Articles in the largest journals average more than *four times* the cost of large journals (and include 85% of all articles).

Fees and Revenue, Other Sciences

	Journals	Articles	Revenue	\$/article
\$1,400+	25	64,975	\$155,851,419	\$2,399
\$600-\$1.399	17	2,590	\$2,859,824	\$1,104
\$200-\$599	14	1,201	\$394,840	\$329
\$0.20-\$199	31	1,950	\$156,053	\$80
No fee	133	5,475	\$0	\$0
Total	220	76,191	\$159,262,135	\$2,090

\$1,400+: 11% of the journals, 85% of the articles, 98% of the revenue...

Region, Other Sciences

Region	Journals	Articles	%No-fee	\$/article
Western Europe	46	46,629	2%	\$2,441
Pacific/English	17	22,076	1%	\$2,001
Eastern Europe	34	2,464	38%	\$184
Latin America	45	1,752	87%	\$8
Asia	46	1,531	62%	\$76
Middle East	25	1,396	37%	\$470
Africa	7	343	100%	\$0

Publisher Category, Other Sciences

Category	Journals	Articles	%No-fee	\$/article
Traditional	28	36,855	1%	\$2,605
Open Access	30	28,215	0%	\$1,770
Univ./college	145	6,011	73%	\$67
Society/govt	17	5,110	11%	\$2,525

No additional comment required. (AAAS is a society.)

Country of Publication, Other Sciences, 70+ 2020 articles

Of 32 listed, 12 have no fees. Another 25 countries with fewer articles; 16 of those countries have no fees.

Country	Journals	Articles	%no-fee	\$/article
United Kingdom	18	34,711	2%	\$2,557
United States	15	22,011	1%	\$2,003
Switzerland	7	9,585	0%	\$2,104
Netherlands	3	1,054	0%	\$589
Germany	7	916	6%	\$4,582
Brazil	17	878	80%	\$14
Russia	8	732	35%	\$84
Bulgaria	4	570	48%	\$59
Iraq	11	532	26%	\$103
Saudi Arabia	1	470	0%	\$1,250
Thailand	9	455	84%	\$25
Indonesia	21	353	60%	\$31
Serbia	5	305	16%	\$361
Ukraine	5	293	65%	\$6
Turkey	7	288	100%	\$0
Colombia	9	247	100%	\$0
Romania	5	205	20%	\$1,028
Mexico	5	182	100%	\$0
South Africa	2	182	100%	\$0
Taiwan	1	180	0%	\$496
Spain	2	176	100%	\$0
Ecuador	4	167	100%	\$0
China	2	139	0%	\$22
Italy	5	131	46%	\$220
Algeria	3	123	100%	\$0
Bangladesh	2	105	100%	\$0
India	3	104	100%	\$0
Slovakia	1	97	0%	\$20
Argentina	3	82	100%	\$0
Iran	2	73	100%	\$0
Cuba	1	71	100%	\$0
Costa Rica	2	70	34%	\$33

39. Philosophy

Key Facts, Philosophy

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	293	8,167			\$74	-94%
Fee	17	650	8%	-88%	\$932	-50%
No-fee	276	7,517	92%	164%		

Very low costs, very few fee-based articles and journals.

Articles and Journals by Year, Philosophy

	2020	2019	2018	2017	2016	2015
Journals	271	283	278	271	259	240
%No-fee	94%	94%	94%	94%	95%	95%
Articles	8,167	8,110	7,633	7,676	7,461	6,442
%No-fee	92%	93%	93%	94%	94%	95%
Change	1%	6%	-1%	3%	16%	

Article Volume, Philosophy

	Journals	Articles	%No-fee	\$/article
Large: 150-599	3	194	100%	\$0
Med.: 60-149	42	2,700	91%	\$141
Small: 20-59	173	4,507	92%	\$40
Smallest: 0-19	75	766	94%	\$58

No largest, and no fees in large. Most articles are in small journals.

Fees and Revenue, Philosophy

	Journals	Articles	Revenue	\$/article
\$1,400+	4	248	\$452,649	\$1,825
\$600-\$1,399	4	89	\$89,769	\$1,009
\$200-\$599	3	115	\$54,693	\$476
\$0.01-\$199	6	198	\$8,549	\$43
No fee	276	7,517		
Total	293	8,167	\$605,660	\$74

Region, Philosophy

Region	Journals	Articles	%No-fee	\$/article
Latin America	87	2,705	99%	\$19
Eastern Europe	71	2,191	90%	\$27
Western Europe	85	2,138	86%	\$229
Pacific/English	35	800	95%	\$3
Middle East	7	196	78%	\$12
Asia	7	112	100%	\$0
Africa	1	25	100%	\$0

Only Western Europe exceeds \$27/article.

Publisher Category, Philosophy

Category	Journals	Articles	%No-fee	\$/article
Univ./college	233	6,639	95%	\$14
Society/govt	22	554	100%	\$0
Open Access	23	503	91%	\$99
Traditional	14	453	35%	\$1,016

Country of Publication, Philosophy, 30+ 2020 articles

Of 32 listed, 24 have no fees. Of 13 more with fewer articles, *none* has any fees.

Country	Journals	Articles	%no-fee	\$/article
Brazil	45	1,827	100%	\$0
Spain	24	807	100%	\$0
Italy	26	533	100%	\$0
Poland	23	491	89%	\$61
Russia	8	487	100%	\$0
United States	20	480	93%	\$1
Ukraine	10	448	73%	\$13
Colombia	12	259	100%	\$0
Canada	12	249	98%	\$8
Chile	9	238	85%	\$221
United Kingdom	9	224	25%	\$1,178
Romania	10	196	100%	\$0
Argentina	12	181	100%	\$0
Iran	5	172	75%	\$13
Portugal	5	143	100%	\$0
Switzerland	3	134	10%	\$1,615
Mexico	4	117	100%	\$0
Serbia	3	117	100%	\$0
Croatia	3	111	100%	\$0
France	6	103	100%	\$0
Czechia	6	103	100%	\$0
Austria	3	64	100%	\$0
Bulgaria	2	62	100%	\$0
Australia	2	58	100%	\$0
Armenia	1	56	0%	\$400
Lithuania	1	46	100%	\$0
India	1	43	100%	\$0
Slovenia	2	41	100%	\$0
Costa Rica	2	40	100%	\$0
Finland	3	40	100%	\$0
Norway	2	36	61%	\$268
Slovakia	1	30	100%	\$0

40. Physics

Key Facts, Physics

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	210	40,469			\$1,456	21%
Fee	112	29,769	74%	13%	\$1,979	7%
No-fee	98	10,700	26%	-24%		

Articles and Journals by Year, Physics

	2020	2019	2018	2017	2016	2015
Journals	200	197	179	170	159	150
%No-fee	45%	45%	45%	47%	50%	51%
Articles	40,469	36,208	30,361	26,123	22,238	20,765
%No-fee	26%	28%	29%	33%	39%	40%
Change	12%	19%	16%	17%	7%	

Solid growth since 2016, moving further away from no-fee.

Article Volume, Physics

	Journals	Articles	%No-fee	\$/article
Largest: 600+	17	28,060	20%	\$1,633
Large: 150-599	25	6,047	37%	\$1,313
Med.: 60-149	51	3,707	37%	\$1,009
Small: 20-59	86	2,434	49%	\$553
Smallest: 0-19	31	221	71%	\$342

Seven out of ten articles are in the largest journals.

Fees and Revenue, Physics

	Journals	Articles	Revenue	\$/article
\$1,400+	60	26,351	\$55,994,210	\$2,125
\$600-\$1,399	25	2,093	\$2,543,444	\$1,215
\$200-\$599	9	859	\$344,409	\$401
\$0.20-\$199	18	466	\$31,211	\$67
No fee	98	10,700		
Total	210	40,469	\$58,913,275	\$1,456

The most expensive 29% publish 65% of articles and have 95% of fees.

Region, Physics

Region	Journals	Articles	%No-fee	\$/article
Western Europe	98	30,299	26%	\$1,457
Pacific/English	21	6,469	7%	\$2,212
Asia	38	1,642	41%	\$169
Eastern Europe	32	1,323	85%	\$109
Latin America	10	475	75%	\$96
Middle East	9	231	91%	\$11
Africa	2	30	0%	\$46

Unusual in that Pacific/English averages much *more* expensive per article than Western Europe.

Publisher Category, Physics

Category	Journals	Articles	%No-fee	\$/article
Open Access	46	18,122	13%	\$1,708
Traditional	78	13,125	43%	\$1,074
Society/govt	27	6,672	10%	\$2,019
Univ./college	59	2,550	80%	\$158

Societies charge more than OA publishers.

Country of Publication, Physics, 10+ articles in 2020

Of 32 listed, 14 have no fees. Three countries with fewer articles and no fees.

Country	Journals	Articles	%no-fee	\$/article
Switzerland	23	16,188	0%	\$1,996
United States	21	6,469	7%	\$2,212
Germany	13	5,960	96%	\$83
United Kingdom	42	3,625	4%	\$2,047
Netherlands	12	2,395	61%	\$509
France	4	1,545	2%	\$1,657
South Korea	2	524	0%	\$400
Ukraine	10	514	100%	\$0
Brazil	4	408	77%	\$105
Indonesia	22	396	43%	\$28
China	6	381	43%	\$135
Italy	2	351	100%	\$0
Poland	7	272	51%	\$417
Russia	5	220	100%	\$0
Iran	8	210	100%	\$0
Austria	1	162	100%	\$0
Japan	2	152	100%	\$0
Romania	3	118	100%	\$0
Ireland	1	73	0%	\$1,709
India	2	71	100%	\$0
Singapore	2	64	91%	\$98
Czechia	1	50	0%	\$547
Serbia	1	48	100%	\$0
Malaysia	1	46	100%	\$0
Kazakhstan	1	42	100%	\$0
Latvia	1	34	100%	\$0
Nigeria	1	30	0%	\$46
Cuba	2	25	100%	\$0
Argentina	2	23	0%	\$120
Egypt	1	21	0%	\$120
Colombia	2	19	100%	\$0
Slovenia	1	17	0%	\$228

41. Political Science

Key Facts, Political Science

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	481	13,609			\$68	-94%
Fee	50	1,833	13%	-79%	\$502	-73%
No-fee	431	11,776	87%	148%		

Articles and Journals by Year, Political Science

	2020	2019	2018	2017	2016	2015
Journals	440	460	453	424	400	378
%No-fee	90%	90%	91%	90%	90%	90%
Articles	13,609	12,960	13,216	11,881	11,213	11,022
%No-fee	87%	87%	89%	86%	85%	85%
Change	5%	-2%	11%	6%	2%	

Modest recent growth (but more than 100 added journals).

Article Volume, Political Science

	Journals	Articles	%No-fee	\$/article
Largest: 600+	2	422	100%	\$0
Large: 150-599	11	1,616	48%	\$386
Med.: 60-149	44	2,749	93%	\$9
Small: 20-59	310	7,740	91%	\$30
Smallest: 0-19	114	1,082	91%	\$37

Another H&SS case where largest journals are no-fee—and most articles are in small journals.

Fees and Revenue, Political Science

	Journals	Articles	Revenue	\$/article
\$1,400+	2	17	\$23,800	\$1,400
\$600-\$1,399	12	718	\$801,588	\$1,116
\$200-\$599	7	163	\$55,518	\$341
\$0.20-\$199	29	935	\$39,849	\$43
No fee	431	11,776		
Total	481	13,609	\$920,755	\$68

Two very expensive journals with a handful of articles.

Region, Political Science

Region	Journals	Articles	%No-fee	\$/article
Eastern Europe	124	4,220	84%	\$9
Latin America	141	3,923	98%	\$7
Western Europe	114	3,143	80%	\$227
Asia	48	890	73%	\$79
Pacific/English	29	799	100%	\$0
Middle East	19	511	76%	\$24
Africa	6	123	40%	\$476

Ongoing oddities: Africa most expensive and Pacific/English no-fee.

Publisher Category, Political Science

Category	Journals	Articles	%No-fee	\$/article
Univ./college	358	9,680	91%	\$12
Open Access	37	1,714	56%	\$398
Traditional	49	1,274	92%	\$74
Society/govt	37	941	92%	\$28

Universities dominate.

Country of Publication, Political Science, 70+ 2019 articles

Of 32 listed, 20 have no fees. 28 more with fewer articles, 26 of which are no-fee. And then there's Switzerland...

Country	Journals	Articles	%no-fee	\$/article
Brazil	60	1,915	97%	\$15
Russia	20	1,407	100%	\$0
Spain	27	800	100%	\$0
Ukraine	16	720	29%	\$19
Poland	30	708	99%	\$1
Romania	26	701	89%	\$3
Indonesia	35	594	70%	\$23
United States	18	515	100%	\$0
Colombia	20	496	100%	\$0
Mexico	18	443	96%	\$0
Argentina	16	432	100%	\$0
Chile	12	384	100%	\$0
United Kingdom	25	376	85%	\$107
Switzerland	2	374	11%	\$1,131
Netherlands	5	354	83%	\$163
Turkey	12	334	100%	\$0
Portugal	5	270	30%	\$714
Italy	13	269	100%	\$0
Canada	7	227	100%	\$0
Czechia	10	211	100%	\$0
Iran	7	177	29%	\$69
France	8	174	100%	\$0
Croatia	5	144	100%	\$0
Germany	8	133	100%	\$0
Austria	7	109	100%	\$0
South Africa	4	97	24%	\$603
India	1	93	100%	\$0
Lithuania	4	90	44%	\$222
Costa Rica	4	86	100%	\$0
Serbia	5	79	100%	\$0
Iceland	3	76	100%	\$0
Taiwan	2	76	46%	\$647

42. Psychology

Key Facts, Psychology

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	268	11,866			\$1,154	-4%
Fee	70	6,593	56%	-15%	\$2,077	12%
No-fee	198	5,273	44%	27%		

Some psychology journals may belong in medicine, and the charges reflect that: much more expensive than most H&SS fields.

Articles and Journals by Year, Psychology

	2020	2019	2018	2017	2016	2015
Journals	250	261	257	249	235	224
%No-fee	74%	74%	74%	75%	76%	76%
Articles	11,866	11,260	10,702	9,232	8,470	8,551
%No-fee	44%	47%	50%	55%	56%	56%
Change	5%	5%	16%	9%	-1%	

Article Volume, Psychology

	Journals	Articles	%No-fee	\$/article
Largest: 600+	1	3,845	0%	\$2,950
Large: 150-599	6	613	20%	\$534
Med.: 60-149	40	2,552	50%	\$620
Small: 20-59	159	4,289	80%	\$91
Smallest: 0-19	62	567	76%	\$93

One very expensive, very large journal.

Fees and Revenue, Psychology

	Journals	Articles	Revenue	\$/article
\$1,400+	9	4,544	\$12,859,861	\$2,830
\$600-\$1.399	16	659	\$664,288	\$1,008
\$200-\$599	11	386	\$109,702	\$284
\$0.20-\$199	34	1,004	\$61,056	\$61
No fee	198	5,273		
Total	268	11,866	\$13,694,907	\$1,154

That one big journal accounts for 83% of all potential revenue.

Region, Psychology

Region	Journals	Articles	%No-fee	\$/article
Western Europe	72	6,204	15%	\$2,121
Latin America	82	2,662	97%	\$2
Eastern Europe	43	1,440	69%	\$37
Middle East	19	528	53%	\$20
Asia	34	503	53%	\$63
Pacific/English	16	484	43%	\$832
Africa	2	45	0%	\$704

Publisher Category, Psychology

Category	Journals	Articles	%No-fee	\$/article
Univ./college	202	5,470	80%	\$73
Traditional	17	4,658	2%	\$2,680
Open Access	30	983	35%	\$750
Society/govt	19	755	62%	\$103

Country of Publication, Psychology, 14+ 2020 articles

32 listed countries, half of them no-fee. Nine countries with fewer articles, only one with fees.

Country	Journals	Articles	%no-fee	\$/article
Switzerland	3	4,059	0%	\$2,866
Brazil	45	1,745	95%	\$3
United Kingdom	14	785	7%	\$1,459
Spain	22	672	58%	\$492
Russia	13	590	88%	\$16
Indonesia	29	433	58%	\$32
Ukraine	7	357	19%	\$50
Iran	13	331	24%	\$33
Italy	13	289	77%	\$129
Colombia	13	284	100%	\$0
United States	11	265	64%	\$389
Canada	4	219	17%	\$1,367
Germany	10	201	88%	\$23
Argentina	7	186	100%	\$0
Poland	7	186	53%	\$141
Turkey	5	183	100%	\$0
Peru	4	166	100%	\$0
Portugal	3	134	30%	\$60
Chile	4	104	100%	\$0
Uruguay	2	103	100%	\$0
Croatia	2	93	100%	\$0
Moldova	2	63	100%	\$0
Czechia	4	60	100%	\$0
South Korea	1	53	0%	\$339
Serbia	4	47	100%	\$0
South Africa	2	45	0%	\$704
Costa Rica	3	40	100%	\$0
Mexico	2	32	100%	\$0
Malta	1	25	100%	\$0
Slovakia	1	25	100%	\$0
Sweden	2	19	100%	\$0
Yemen	1	14	100%	\$0

43. Religion

Key Facts, Religion

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	318	8,635			\$176	-85%
Fee	59	3,116	36%	-45%	\$488	-74%
No-fee	259	5,519	64%	83%		

Some religion journals could be elsewhere, for example journals on economics in particular religious systems.

Articles and Journals by Year, Religion

	2020	2019	2018	2017	2016	2015
Journals	293	303	299	291	266	230
%No-fee	80%	81%	82%	81%	82%	82%
Articles	8,635	8,242	7,261	6,806	6,408	5,627
%No-fee	64%	67%	73%	73%	73%	73%
Change	5%	14%	7%	6%	14%	

Back to slow growth after a strong 2019.

Article Volume, Religion

	Journals	Articles	%No-fee	\$/article
Largest: 600+	2	1,337	0%	\$684
Large: 150-599	1	262	0%	\$908
Med.: 60-149	23	1,479	72%	\$132
Small: 20-59	184	4,378	79%	\$33
Smallest: 0-19	108	1,179	84%	\$24

Fees and Revenue, Religion

	Journals	Articles	Revenue	\$/article
\$600-\$1.399	7	1,195	\$1,323,072	\$1,107
\$200-\$599	10	343	\$104,610	\$305
\$0.20-\$199	42	1,578	\$93,791	\$59
No fee	259	5,519		
Total	318	8,635	\$1,521,472	\$176

Region, Religion

Region	Journals	Articles	%No-fee	\$/article
Western Europe	51	2,656	47%	\$363
Asia	144	2,256	63%	\$37
Middle East	41	1,003	86%	\$8
Latin America	31	976	100%	\$0
Eastern Europe	30	959	87%	\$68
Africa	10	601	0%	\$665
Pacific/English	11	184	100%	\$0

Unusual, with Africa the most expensive and Pacific/English all no-fee.

Publisher Category, Religion

Category	Journals	Articles	%No-fee	\$/article
Univ./college	266	5,784	83%	\$23
Open Access	28	2,230	15%	\$584
Society/govt	16	351	66%	\$14
Traditional	8	270	67%	\$305

Country of Publication, Religion, 25+ 2020 articles

Switzerland stands out with the only four-digit average cost. Of 32 listed countries, 21 are fee-free. Six countries with fewer 2020 articles are all fee-free.

Country	Journals	Articles	%no-fee	\$/article
Indonesia	132	1,887	73%	\$14
Germany	6	733	11%	\$51
Brazil	20	732	100%	\$0
Switzerland	3	708	3%	\$1,240
Turkey	22	666	100%	\$0
South Africa	10	601	0%	\$665
Poland	14	405	86%	\$155
Spain	10	349	100%	\$0
Iran	18	337	60%	\$24
Pakistan	9	289	9%	\$146
Russia	5	265	100%	\$0
Italy	3	157	100%	\$0
United Kingdom	6	137	68%	\$178
Netherlands	3	130	100%	\$0
Norway	6	115	70%	\$220
United States	7	111	100%	\$0
Argentina	5	100	100%	\$0
Finland	5	92	100%	\$0
Ukraine	3	92	24%	\$30
Ireland	1	85	100%	\$0
Austria	3	77	100%	\$0
Czechia	2	66	100%	\$0
Chile	3	63	100%	\$0
Malaysia	2	62	0%	\$230
Colombia	2	42	100%	\$0
Australia	2	39	100%	\$0
Costa Rica	1	39	100%	\$0
Serbia	2	35	100%	\$0
Canada	2	34	100%	\$0
Croatia	1	33	100%	\$0
*Slovenia	1	28	100%	\$0
France	2	27	100%	\$0

44. Sociology

Key Facts, Sociology

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	578	19,120			\$143	-88%
Fee	66	4,621	24%	-63%	\$592	-68%
No-fee	512	14,499	76%	117%		

A number of journals were reassigned to more specific subjects.

Articles and Journals by Year, Sociology

	2020	2019	2018	2017	2016	2015
Journals	529	559	555	526	495	439
%No-fee	89%	89%	90%	90%	91%	91%
Articles	19,120	18,004	18,123	17,064	15,802	14,855
%No-fee	76%	83%	82%	82%	81%	71%
Change	6%	-1%	6%	8%	6%	

Article Volume, Sociology

	Journals	Articles	%No-fee	\$/article
Largest: 600+	3	1,233	19%	\$118
Large: 150-599	11	1,845	29%	\$740
Med.: 60-149	80	5,157	73%	\$180
Small: 20-59	367	9,773	91%	\$27
Smallest: 0-19	117	1,112	94%	\$31

Fees and Revenue, Sociology

	Journals	Articles	Revenue	\$/article
\$1,400+	5	627	\$1,275,550	\$2,034
\$600-\$1.399	15	991	\$1,007,877	\$1,017
\$200-\$599	10	534	\$245,743	\$460
\$0.20-\$199	36	2,469	\$204,753	\$83
No fee	512	14,499		
Total	578	19,120	\$2,733,923	\$143

Region, Sociology

Region	Journals	Articles	%No-fee	\$/article
Latin America	192	5,811	99%	\$0
Western Europe	147	5,027	71%	\$377
Eastern Europe	95	4,351	62%	\$35
Pacific/English	58	1,622	62%	\$347
Middle East	33	1,188	66%	\$33
Asia	46	915	68%	\$20
Africa	7	206	26%	\$289

Latin America has the most articles and very low fees—the average is \$0.40 per article.

Publisher Category, Sociology

Category	Journals	Articles	%No-fee	\$/article
Univ./college	441	13,019	89%	\$22
Open Access	55	3,032	40%	\$215
Traditional	39	1,663	32%	\$1,066
Society/govt	43	1,406	85%	\$18

Universities predominate, which is fairly common for H&SS.

Country of Publication, Sociology, 100+ 2020 articles

Brazil biggest, UK most expensive. Of 33 listed countries, 16 are fee-free; of 27 more with fewer articles, 23 are fee-free.

Country	Journals	Articles	%no-fee	\$/article
Brazil	82	2,967	98%	\$1
Russia	17	1,314	85%	\$17
United Kingdom	23	1,283	26%	\$1,106
Spain	42	1,257	97%	\$4
United States	43	1,205	53%	\$461
Romania	11	1,114	17%	\$95
Turkey	23	973	70%	\$24
Indonesia	37	779	62%	\$23
Argentina	28	728	100%	\$0
Colombia	26	590	100%	\$0
France	17	553	100%	\$0
Poland	21	533	97%	\$16
Mexico	11	399	100%	\$0
Italy	12	341	100%	\$0
Switzerland	7	340	18%	\$894
Ukraine	6	320	8%	\$22
Canada	10	289	100%	\$0
Portugal	7	285	44%	\$576
Germany	9	264	100%	\$0
Ecuador	11	246	100%	\$0
Iran	10	215	51%	\$76
Netherlands	7	208	100%	\$0
Norway	11	207	88%	\$26
Cuba	4	204	100%	\$0
Serbia	5	192	67%	\$16
Chile	10	191	100%	\$0
Venezuela	6	189	100%	\$0
Moldova	4	179	61%	\$6
Costa Rica	6	155	100%	\$0
South Africa	4	131	0%	\$438
Sweden	5	121	100%	\$0
Czechia	4	115	100%	\$0
Bosnia and Herzegovina	2	111	100%	\$0

45. Technology

Key Facts, Technology

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	184	11,532			\$667	-45%
Fee	70	5,757	50%	-23%	\$1,336	-28%
No-fee	114	5,775	50%	44%		

Between subject reassignments and journals disappearing, this vague subject is considerably smaller than in GOA5.

Articles and Journals by Year, Technology

	2020	2019	2018	2017	2016	2015
Journals	173	172	172	166	151	145
%No-fee	60%	62%	63%	61%	62%	63%
Articles	11,532	12,479	19,001	12,991	11,903	8,823
%No-fee	50%	59%	73%	66%	64%	56%
Change	-8%	-34%	46%	9%	35%	

As the percentage of no-fee articles has declined, so has total volume. Note that recent declines are independent of subject changes.

Article Volume, Technology

	Journals	Articles	%No-fee	\$/article
Largest: 600+	2	1,678	88%	\$259
Large: 150-599	23	4,485	26%	\$1,133
Med.: 60-149	44	2,877	47%	\$552
Small: 20-59	90	2,308	71%	\$240
Smallest: 0-19	25	184	79%	\$206

Fees and Revenue, Technology

	Journals	Articles	Revenue	\$/article
\$1,400+	24	3,080	\$6,437,325	\$2,090
\$600-\$1,399	16	922	\$813,441	\$882
\$200-\$599	14	1,113	\$392,097	\$352
\$0.20-\$199	16	642	\$50,710	\$79
No fee	114	5,775		
Total	184	11,532	\$7,693,573	\$667

The priciest 13% of journals publish 27% of articles for 84% of fees.

Region, Technology

Region	Journals	Articles	%No-fee	\$/article
Western Europe	47	5,669	41%	\$1,002
Eastern Europe	55	2,135	67%	\$83
Asia	36	1,663	40%	\$511
Latin America	23	798	95%	\$1
Middle East	11	593	91%	\$2
Pacific/English	9	517	8%	\$1,855

Publisher Category, Technology

Category	Journals	Articles	%No-fee	\$/article
Univ./college	100	4,460	65%	\$159
Traditional	31	4,138	46%	\$1,132
Open Access	32	1,609	17%	\$790
Society/govt	21	1,325	53%	\$779

Country of Publication, Technology, 40+ 2020 articles

The 33 countries listed include 13 with no fees. Fourteen countries with fewer articles, including ten with no fees.

Country	Journals	Articles	%no-fee	\$/article
United Kingdom	17	2,053	19%	\$1,601
France	2	1,511	97%	\$45
Poland	16	789	46%	\$142
Netherlands	5	579	25%	\$1,632
Switzerland	7	523	0%	\$1,492
United States	9	517	8%	\$1,855
Brazil	11	512	92%	\$2
Germany	5	480	17%	\$562
Japan	3	479	0%	\$1,381
China	6	470	51%	\$147
Indonesia	19	467	44%	\$231
Russia	10	420	59%	\$109
Turkey	3	240	100%	\$0
Ukraine	6	220	91%	\$1
Italy	2	217	12%	\$1,312
Iran	6	213	76%	\$6
Spain	4	209	47%	\$223
Romania	3	142	100%	\$0
Iraq	2	140	100%	\$0
Serbia	5	128	76%	\$14
Nigeria	1	114	0%	\$104
Belarus	1	101	100%	\$0
Malaysia	1	101	100%	\$0
Hungary	1	96	100%	\$0
India	4	95	72%	\$85
Belgium	4	91	100%	\$0
Colombia	3	70	100%	\$0
Ecuador	3	65	100%	\$0
Cuba	2	63	100%	\$0
Taiwan	2	46	100%	\$0
Moldova	1	44	100%	\$0
Estonia	2	43	49%	\$44
Bulgaria	2	40	100%	\$0

46. Zoology

Key Facts, Zoology

	Journals	Articles	Art%	Rel%	\$/Art	Rel%
All	297	20,092			\$1,054	-12%
Fee	161	16,178	81%	24%	\$1,309	-29%
No-fee	136	3,914	19%	-44%		

Includes marine biology and veterinary medicine.

Articles and Journals by Year, Zoology

	2020	2019	2018	2017	2016	2015
Journals	283	289	284	281	270	251
%No-fee	46%	46%	46%	46%	47%	48%
Articles	20,092	15,561	13,870	12,964	12,340	11,491
%No-fee	19%	23%	27%	28%	27%	29%
Change	29%	12%	7%	5%	7%	

Rapid growth in 2020, as no-fee percentage continues to drop.

Article Volume, Zoology

	Journals	Articles	%No-fee	\$/article
Largest: 600+	4	5,487	0%	\$2,114
Large: 150-599	22	4,958	4%	\$1,047
Med.: 60-149	79	5,136	22%	\$636
Small: 20-59	144	4,026	57%	\$247
Smallest: 0-19	48	485	62%	\$252

In a big change from GOA5, largest journals are *twice* as expensive as large ones.

Fees and Revenue, Zoology

	Journals	Articles	Revenue	\$/article
\$1,400+	38	8,770	\$18,317,063	\$2,089
\$600-\$1,399	26	1,995	\$1,625,702	\$815
\$200-\$599	37	2,604	\$979,018	\$376
\$0.20-\$199	60	2,809	\$252,224	\$90
No fee	136	3,914		
Total	297	20,092	\$21,174,007	\$1,054

Region, Zoology

Region	Journals	Articles	%No-fee	\$/article
Western Europe	86	9,041	12%	\$1,751
Latin America	51	2,741	33%	\$186
Asia	57	2,560	16%	\$359
Eastern Europe	54	2,233	38%	\$323
Middle East	36	1,753	36%	\$92
Pacific/English	9	1,649	5%	\$1,802
Africa	4	115	0%	\$549

Publisher Category, Zoology

Category	Journals	Articles	%No-fee	\$/article
Univ./college	159	6,267	38%	\$327
Traditional	62	5,937	7%	\$1,846
Open Access	33	5,588	5%	\$1,353
Society/govt	43	2,300	38%	\$263

Country of Publication, Zoology, 60+ 2020 articles

Of 31 listed, three have no fees. Twenty-five more countries with fewer articles, 22 of which have no fees.

Country	Journals	Articles	%no-fee	\$/article
Switzerland	5	4,751	0%	\$2,114
United Kingdom	39	2,482	7%	\$1,803
Brazil	25	1,941	16%	\$231
United States	8	1,640	5%	\$1,810
Bulgaria	13	978	10%	\$650
Indonesia	39	962	29%	\$75
Netherlands	6	702	17%	\$1,267
Iran	13	595	34%	\$82
Egypt	6	547	11%	\$128
South Korea	5	488	0%	\$779
India	3	485	7%	\$357
Turkey	12	478	74%	\$66
Poland	14	326	59%	\$81
Ukraine	8	326	50%	\$10
China	3	320	0%	\$745
France	4	262	100%	\$0
Germany	7	260	26%	\$1,254
Spain	8	225	68%	\$98
Colombia	6	185	88%	\$25
Chile	2	180	51%	\$171
Italy	9	166	93%	\$19
Mexico	3	163	42%	\$150
Romania	4	128	59%	\$39
Argentina	6	127	100%	\$0
Bangladesh	2	124	26%	\$185
Czechia	2	121	0%	\$365
Iraq	4	118	0%	\$102
Serbia	4	116	66%	\$47
Pakistan	1	106	0%	\$300
Sweden	1	85	0%	\$798
Cuba	2	64	100%	\$0

Appendix A. Methods, Changes and Caveats

The Investigation

This project began with the master dataset prepared for *Gold Open Access 2014-2019: Articles in Journals (GOA5)* and proceeded similarly to last year, but with slightly different dates and one extra step. I downloaded *DOAJ* metadata on December 15, 2020 to allow time to test matching techniques—but also to check publisher categories (assigning Open/Other to all that aren't University/College, Society/Government or Traditional) and do a full rescan of subject assignments. As usual, it made sense to build the base spreadsheet, then add and delete rows for new and deleted journals through just after midnight, January 1, 2021.

The 2019 dataset included 13,938 journals and 138 excluded journals. The December 15, 2020 download consisted of 15,330 journals. Once again, ISSN matching was the primary means of connecting new journal data to existing information, made slightly more complicated because *DOAJ* records can (legitimately) include two ISSN values.

- The first pass yielded 13,353 titles with exact ISSN matches.
- A second pass using the other ISSN (for unmatched *DOAJ* records with two ISSNs) yielded another 166 matches.
- Matching remaining records with normalized URLs (that is, changing “https:” to “http:” for the purpose of matching) yielded another seven matches, and direct title comparisons yielded two more. At this point, there were 13,528 matched journals and 2,102 that appear to be new.
- Among journals matched by ISSN, there were 93 changes in journal titles, 752 changes in URL, 337 changes in publisher name, and 201 changes in country name. There were also 1,146 changes in

subject—but there’s a good reason for that. To my considerable surprise, among matched records, about 400 *more* used secure URLs in 2019 than in 2020.

- Among GOA5 journals that I did *not* find 2020 matches for, checking DOAJ’s add/removed log showed 343 matching by ISSN and another 113 matching by title (the removed log only shows one ISSN), leaving only 90 unaccounted for. (A second manual pass removed 14, leaving 76 unaccounted for.)
- I spent the usual day or two normalizing various data values and assigning publisher categories for new journals—and reassigning “Miscellaneous” publishers to other categories, frequently Open/Other.
- Then, because it was clear that a few dozen small journals had problems with the subject assignments, and in order to be more consistent and, where feasible, specific in subjects, I spent a week or so not only assigning subjects for added journals but verifying and sometimes changing subjects for continuing journals based on DOAJ subjects and keywords and, sometimes, journal titles and actual content. So, for example, journals concerned with nutrition are now almost all in Medicine; journals concerned with sustainability are almost all in Ecology; and journals concerned with travel are almost all in Anthropology. With the exceptions of Sociology and Technology, reductions through reassignments are more than made up for by new journals.
- Final additions and deletions late afternoon December 31, 2019 brought the total to 15,666 journals.
- The first round of testing, with the spreadsheet arranged by publisher then by journal, began January 1, 2021 and was completed on April 20, 2021.
- The second pass included two phases: journals where publication of some 2020 issues may have been late, and journals that were problematic during the first pass. These were done in that order.
- Phase 1, journals that might have more 2020 issues added since they were first counted, includes 946 journals flagged as needing rechecking during the initial count and 1,265 journals where the 2020 article count was less than two-thirds the 2019 count. In all,

2,211 journals were rechecked—a fast check, since it only involved looking at 2020 issues or articles. At the beginning of the recheck, those 2,211 journals showed a total of 45,579 articles in 2020. The recheck began April 22, 2021 and ended on May 2, 2021. In all, counts for 690 of the journals were modified, primarily 2020 counts but a few 2019. The new total is 56,268 articles for these journals.

- At this point, I downloaded all deletions for *DOAJ*, selected those from January 1 through May 2, 2021, and matched ISSNns against the remaining problematic journals. This yielded 40 matches: four xn (changed from OA to hybrid), six xm (malware), and 30 xx (unavailable for various reasons). These were removed, leaving 58 xd (no articles later than 2014); 781 xm (malware), and 732 others (mostly xx, a few xn).
- I rechecked xx and xn for fixes or, if not fixed, data from *DOAJ*, beginning May 3, 2021 and ending May 10, 2021. Of 732 journals checked, 272 were restored (of which 26 hadn't published since 2018); 305 were findable at other URLs; two were findable and xd (no articles since 2014); seven now showed malware and would be rechecked; five were now or were still xn (not OA); 21 no longer showed up in *DOAJ* ISSN searches; and 119 were still unfindable/unworkable. That left 126 to be rechecked one last time, and 606 resolved in some manner.
- The 781 xm/malware cases from the original scan were rechecked in a quick scan from May 10, 2021 to May 12, 2021, showing 64 journals cleared of problems (mostly late certificates, but some malware) and 717 left to check starting May 15. With 126 others still to be rechecked, that meant 843 needed a third and final pass.
- The final pass took from May 15, 2021 through May 19, 2021. That pass yielded 33 now-good journals, one now-good but inactive journal, four no longer in *DOAJ*, four with no articles later than 2014, and 71 that could be accessed at different URLs.
- The remaining xm and xx situations required special treatment, especially since some of them had also been problematic in *GOA5*. Those were treated as exclusions, as were cases where it was not possible to get current article counts. In the end, 74 xx and 260 xm

journals were included in overall analysis, for a total of 15,128 journals. A total of 496 journals were excluded, including 27 removed from DOAJ, 68 with no activity after 2014, five that aren't OA journals, 17 unreachable or unworkable and 379 cases of malware or security problems. (The other 40 journals were, as noted, deleted earlier because they were no longer in DOAJ.)

Changes

Changes in definitions and practice:

- For 33 non-USD currencies, the average conversion rate for 2020 (through December 27) was used, taken from OFX in most cases and dollarfx, ceicdata, or exchangerates in a few cases. For four currencies where such an average was not available (BDT, KZT, NGN and RON), average rates for the last six months (as of December 27) were taken from exchangerates.org . Conversions were done to as many decimal places as offered (usually six), but rounded to two places for display. The non-rounded number is used to calculate revenue for 2020.
- For all journals with differential rates by country, the more expensive of U.S. authorship or in-country authorship was used (this is not a change). For journals with rates varying by number of authors, length of paper or other factors, a length of 10 pages (or 60,000 characters) and two authors was assumed. "Two authors" is a change. These journals are marked with "v" as a fee code.
- The fee code "x" is used for journals with both submission and processing/publication fees. The code "q" is used when there's a discrepancy in fee reporting or when the fee is so low (or, in one case, so high) that I suspect a decimal-place error.
- The status "bx"—which previously included only "xx" journals that could be reached via a different URL—now includes a handful of malware cases that would otherwise be coded "bm." There were essentially no cases where a journal could be reached *and evaluated* without running into existing malware issues.

- Any publishers not identifiable as University/College (including institutes), Society/Association/Government, Open Access, or Traditional (commercial subscription) are treated as Open/Other.
- DOAJ downloadable metadata no longer includes starting date. I have attempted to provide these dates based on evidence at the websites—that is, the oldest available articles or issues.

Caveats

The same caveats apply as in *GOAJ3: Gold Open Access Journals 2012-2017*. Briefly, article counts are (generally) inclusive of reviews, short reports and (sometimes) editorials, especially when counting shortcuts were available. I used every counting shortcut I could find; and there are *very* few estimates. I'm certain that some manual counts are off by one or two. Pre-2018 counts for a few newly-added journals may be missing if the journals were unusually hard to count.

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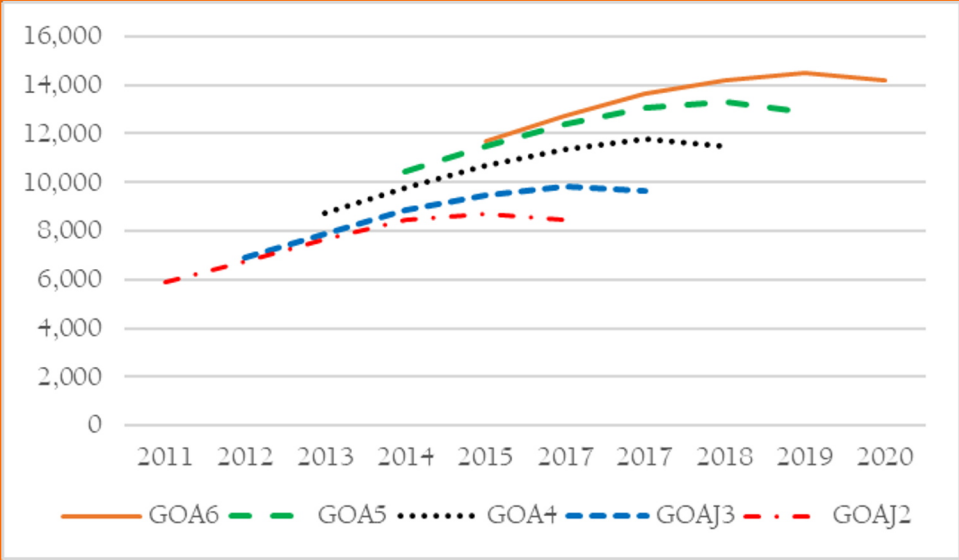
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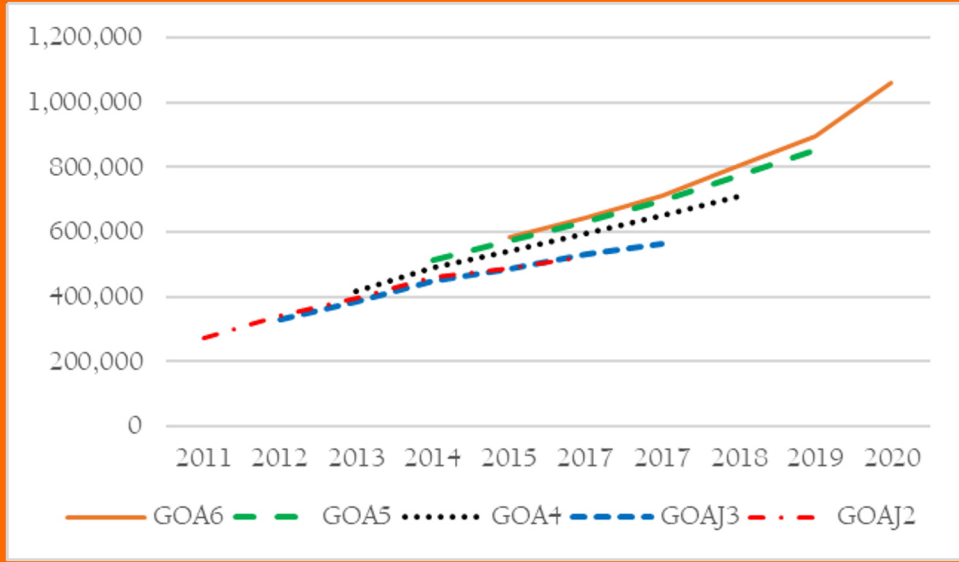
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