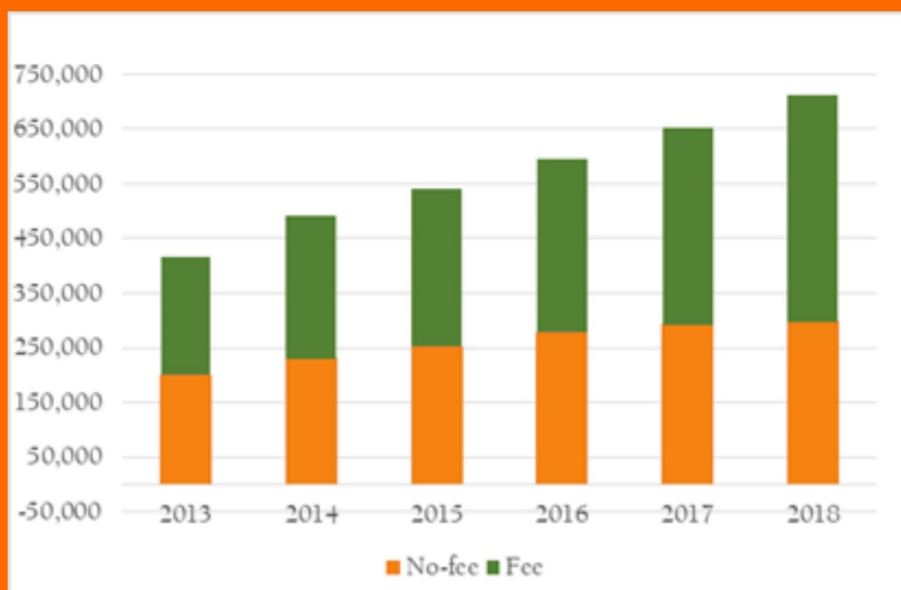


Gold Open Access 2013-2018

Articles in Journals (GOA4)



Walt Crawford

GOLD OPEN ACCESS
2013-2018
ARTICLES IN JOURNALS
(GOA4)

Walt Crawford

Cites & Insights Books
Livermore, California, 2019

Gold Open Access 2013-2018: Articles in Journals (GOA4)

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This book was prepared entirely in Word 2013, using the licensed typefaces Berkeley Book and Berkeley (bold) for text and Calibri for headings and subheadings. Excel 2013 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 fourth 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, 2019 and to add 2018 counts and earlier counts as needed (and sometimes refine subject assignments).

This book follows the pattern of the previous versions but includes some notable changes for clarity and meaningfulness. These changes are discussed in Chapter 1; the most obvious ones are an increased emphasis on articles, decreased emphasis on percentages of no-fee journals, and the change from “APC” to “fee” and “free” to “no-fee.” Additionally, the OAWorld/APCLand split has been abandoned since it never caught on—and “visibility” was abandoned as a not-very-useful measure. A new Key Facts table replaces the old Journals and Articles table, providing a more useful quick look at any subset of journals.

Gold Open Access by Country 2013-2018 will appear a few weeks after this book appears. tShird book, *Gold Open Access 2013-2018: Subject and Publisher Profiles*, will appear a few weeks after that. Part or all of some books will appear as issues of what's left of *Cites & Insights*.

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 Shawn Daugherty improved the project.

Thanks to the staff at DOAJ—Tom, Clara, managing editors—and journal publishers they contacted, a significant problem with malware-infected journals has been almost entirely eliminated.

Special thanks to Subramaniam Janakiraman, another Wednesday Ambler, who tackled the one “untranslatable” journal from the first two editions, recognized the script as Hindi, and passed it on to his friend Yogesh Nivas. Yogesh Nivas (a native Hindi speaker) provided me with the required information on the journal.

Thanks also to Patrick Hogan for publishing *Open-Access Journals: Idealism and Opportunism*, the August/September 2015 *Library Technology Reports* covering some two-thirds of DOAJ journals from 2011 through June 2014, which served as a precursor to this project.

Thanks to the good people at DOAJ for answering questions and improving the directory—and to Heather Morrison for pointing me to a way to get DOAJ metadata into Excel in full Unicode form.

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

Thanks to loads of LSW folks—John Dupuis, Dorothea Salo, Barbara Fister and many others—for encouraging this work, and to a fair number of people involved with OA who have helped along the way.

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

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 the complexities of the picture. I define serious gold OA based on journals in [Directory of Open Access Journals \(DOAJ\)](#).

The overall picture of serious gold OA in 2018:

- 711,670 articles in 2018, up from 651,384 in 2017; 595,707 in 2016; 541,700 in 2015; 490,277 in 2014; and 416,251 in 2013. Direct comparisons with previous editions are difficult because of changes in *DOAJ*: in this case, 2,305 journals added and 616 removed during the year. See also Chapters 3 and 4.
- 12,180 fully-analyzed journals, of which 11,465 published articles in 2018 for an average of 62 articles per journal.
- Although most gold OA journals (70% of those active in 2018) do not charge fees, most articles (58% in 2018) do involve fees.
- The average cost per article was no more than \$913 in 2018 and probably less, but that's up from 2017.

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 12,180, others—where 2018 article counts are fundamental—address only 11,465, ignoring 715 journals with no 2018 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, 2019.

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 a U.S. author in the most expensive author category, for a 10-page article in the most expensive article category, in U.S. dollars in early 2019 (exchange rates checked March 27-April 2, 2019). For journals that only charge fees for in-country authors, that fee is used: most such journals appear to be predominantly local.

Articles per year were determined by direct observation, 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 simply the current fee times the 2018 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.

The Big Numbers

2018	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%	
Hum&SS	5,937	169,306	24%	\$123
Fee	784	37,307	22%	\$558
No-fee	5,153	131,999	78%	

Table 1.1. Key facts, overall

\$/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 **Hum&SS** (humanities and social sciences) rows are percentages of **All**.

As you can see, biomed has the fewest journals, the lowest percentage of no-fee articles and the highest fees. STEM has slightly more articles and journals and somewhat lower fees. Hum&SS has far more journals, very few charging fees; more than three-quarters of articles are in no-fee journals and fees, where they do exist, are much lower.

Table 1.2 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.

	Count	2018	2017	2016	2015	2014	2013
A	11,714	703,719	643,593	586,009	530,949	478,109	404,639
BI	224			1,978	4,000	6,121	6,234
BM	3	28	39	48	61	70	60
BX	239	7,923	7,752	7,672	6,690	5,977	5,518
Tot.	12,180	711,670	651,384	595,707	541,700	490,277	416,451

Table 1.2. Articles per year and special codes

4 Gold Open Access 2013-2018: articles in journals (GOA4)

“A” is for journals active in 2017 or 2018 with no special codes.

“B” codes are as follows:

- **BI** (inactive) journals have articles after 2012 but none since 2016.
- **BM** (malware) journals have outbound calls trapped by Malwarebytes Pro as malware, but could be analyzed while preventing those calls from executing. Don't visit these journals without active strong security software.
- **BX** journals could not be reached using the URL downloaded from DOAJ but could be reached using a title search; the dataset includes the new URLs.

These codes are not used in the remainder of this book since—other than BM—they do not imply anything negative about the journals.

Overall Growth

Serious gold OA is growing at roughly 10% per year since 2014, but—thanks to more journals being in DOAJ—listed journals include 26% more 2018 articles than the 2017 articles in last year's analysis.

Revenue and Costs

Table 1.3 in previous editions was misleading, since it assumed a constant fee for all years shown. The new Table 1.3 shows, instead, figures for the “current” year for each generation of GOA/GOAJ—with a changing population of journals each year. Revenues are stated in thousands of dollars to avoid the need for very small type.

	2018	2017	2016	2015
Revenue	\$649,415K	\$493,242K	\$419,887K	\$376,733K
Fee	413,826	316,836	298,448	315,968
\$/art	\$1,569	\$1,557	\$1,407	\$1,192
Tot. art.	711,670	563,147	523,205	566,922
\$/art	\$913	\$876	\$803	\$665
No-fee	41.9%	43.7%	43.0%	44.3%

Table 1.3. Revenue and costs for latest year in each GOA study

Starting Date

Figure 1.1 shows starting dates for the 12,180 journals. 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 1901-1920.

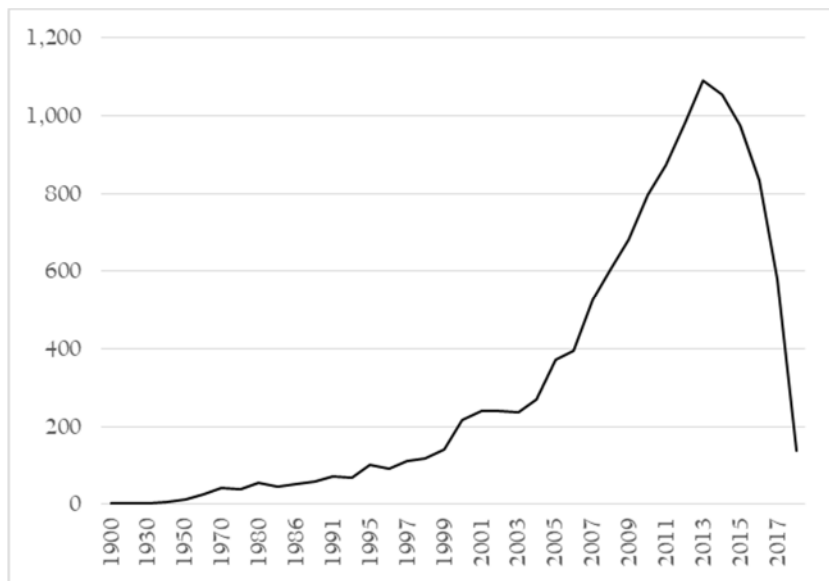


Figure 1.1. OA journals by starting year

While it's true that the rate of creation of new OA journals has slowed substantially since the peak years of 2011-2014, the drop-off for 2017 and 2018 may be misleading, since most journals don't show up in DOAJ until after several articles have been published.

The rest of this book shows starting dates for subsets of journals, grouped into two-year periods or longer and showing no-fee and fee journals separately. Figure 1.2 shows that information for the 12,180 journals.

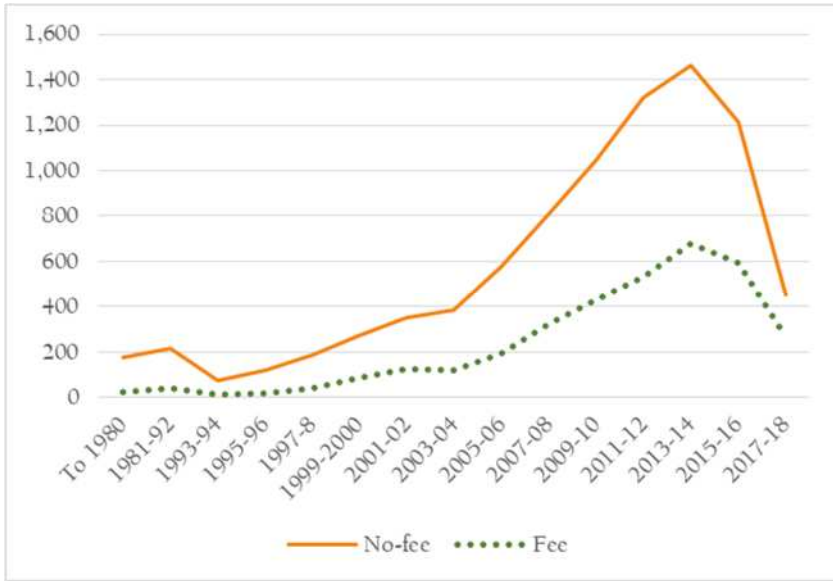


Figure 1.2. Starting date, overall

Article Volume per Year, Fee and No-fee

Figure 1.3 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 most tables, and it uses solid OA gold for no-fee articles and cross-hatched dollar green for articles in journals that currently charge fees. As elsewhere, this arrangement may slightly understate the no-fee count in earlier years. The key fact is clear enough: while both categories have grown each year, fee-based publishing has grown faster: 92% over the six years, as compared to 41% for no-fee publishing. There were more no-fee articles in 2018 than fee articles in 2015.

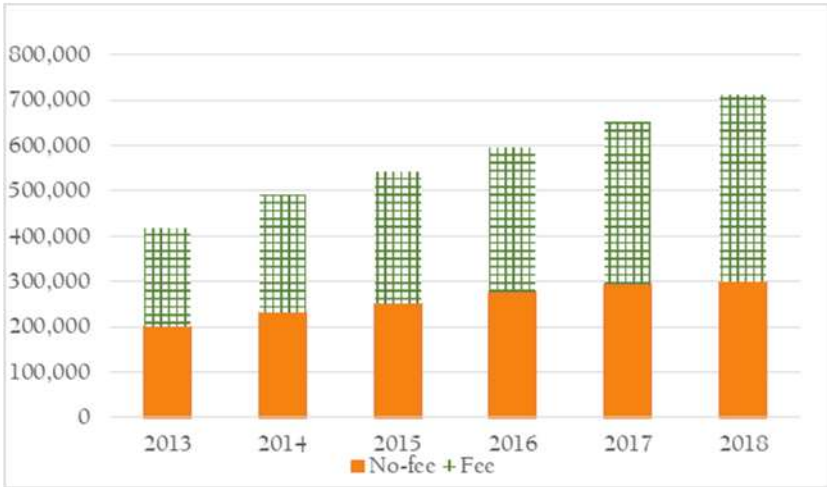


Figure 1.3. Fee and no-fee articles by year, overall

Journal Growth and Shrinkage

Change 2017-18	Count	Percent	Cum%
Grew 50%+	1,784	14.6%	
Grew 25-49.9%	1,200	9.9%	24.5%
Grew 10-24.99%	1,328	10.9%	35.4%
Even, $\pm 9.99\%$	3,554	29.2%	64.6%
Shrank 10-24.99%	1,543	12.7%	77.2%
Shrank 25-49.99%	1,432	11.8%	89.0%
Shrank 50%+	1,339	11.0%	
Total	12,180		

Table 1.4. Growth and shrinkage, overall

Table 1.4 shows how journals grew and shrank in number of articles from 2017 to 2018, noting that new 2018 journals appear as “Grew 50%+” and those with articles in 2017 but none in 2018 are in “Shrank 50%+.” (BI journals, with no articles in either year, are in “Even.”) Note that growth and shrinkage are evenly balanced, at 35.4% each, but *substantial* growth (25% or more) is more than twice as high as substantial shrinkage.

Subject

Subject	Jour.	Art.	%No-fee	\$/article
Medicine	2,665	209,877	34%	\$1,183
Other Sciences	216	62,268	12%	\$1,801
Biology	397	42,965	12%	\$1,851
Engineering	432	32,225	30%	\$889
Ecology	314	29,745	31%	\$937
Physics	157	28,972	33%	\$1,182
Chemistry	156	27,484	16%	\$1,101
Education	843	26,140	81%	\$62
Agriculture	469	26,046	35%	\$767
Technology	231	25,609	63%	\$534
Earth Sciences	409	20,519	50%	\$611
Economics	791	20,288	66%	\$100
Language & Literature	763	20,205	81%	\$32
Sociology	529	17,437	71%	\$148
Anthropology	489	13,835	78%	\$81
Computer Science	296	13,555	39%	\$510
Zoology	260	12,485	34%	\$521
Mathematics	241	10,614	46%	\$757
Law	364	8,930	92%	\$19
Miscellany	211	8,875	73%	\$95
Arts & Architecture	315	8,682	73%	\$147
History	324	8,592	95%	\$8
Political Science	318	8,334	89%	\$23
Psychology	209	8,244	50%	\$1,095
Media & Communications	221	6,092	89%	\$53
Philosophy	207	5,161	94%	\$50
Religion	208	5,128	69%	\$127
Library Science	145	3,363	98%	\$8

Table 1.5. Subject, overall

Subjects are sorted by number of 2018 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, Library Science and Law (among others): more than 90% of the articles are no-fee.

The Rest of the Book

The rest of this book offers a variety of ways to look at the current state of serious gold OA. My purpose here is to describe, not prescribe.

Chapter 2 discusses exclusions and special cases.

Chapter 3 looks at changes in *DOAJ* from the end of 2017 to the end of 2018, while Chapter 4 compares the four iterations of *Gold Open Access*.

Chapter 5 looks at journals by article volume.

Chapter 6 looks at articles by fee and journal revenue.

Chapter 7 looks at articles by type of publisher.

Chapter 8 looks at articles by country of publication.

Chapters 9-11 look at articles within each subject segment.

Chapters 12-18 look at articles within each geographic region.

Appendix A discusses the methodology

Key points and highlights appear at the end of some chapters.

Changes from Previous Editions

Some of these were noted in the preface, but are expanded here (with the suspicion that few people read prefaces).

Terminology: “APC”—which was never the right term, since I include submission fees and required memberships—is now “fee.” “Free”—which seems to mislead people because, of course, all OA articles are free—is now “no-fee.” In ten cases, country names used in *DOAJ* (and the dataset) have been replaced with shorter common forms.

Dropped: The “Visibility” measure didn’t work very well and has been dropped. (For the record, I found fee-visibility problems with 903 no-fee journals, probably because university and society publishers don’t always feel the need to be explicit about having no fees—and 188 fee journals, which is more of an issue.) The *OAWorld/APCLand* split never seemed to catch on, and has been abandoned. The brief Subject Segments and Regions/APCLand chapters have been removed.

Modified: The “Journals and articles” table that appears so often in previous editions, and seemed to emphasize percentages of fee and no-fee journals, has been replaced by the “Key facts” table, which drops journal-level percentages and adds segment-level information and cost-per-article information.

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

- Nearly 300,000 articles appeared in 2018 in 8,674 journals funded through means other than author-side fees.
- More than 410,000 articles appeared in 3,506 journals charging author-side fees (including memberships), for a total of more than 710,000 serious gold OA articles.
- While more than 70% of OA journals are no-fee, most articles (58%) are in fee-charging journals.
- Serious gold OA is growing: for journals currently in DOAJ, roughly 10% more articles for each of the past four years. That’s for journals in DOAJ as of January 1, 2019; compared to January 1, 2018, the year-to-year increase is 26%.
- Some 997 journals show higher fees in this report than in last year’s, and 886 show *lower* fees. Many of those, especially the reductions, are currency exchange fluctuations. Whether because of better information or actual changes, 372 journals *appear* to have switched from no-fee to fee, while 144 appear to have switched from fee to no-fee.
- New journal creation peaked in 2013-2014, the only years with more than 1,000 new journals per year), but new journals continue to emerge, including 581 in 2017 and 140 (so far) in 2018.

2. Exclusions and Special Cases

This chapter is, in essence, one long footnote, and 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 three times. The first set of visits took place between January 2, 2019 and March 22, 2019. I marked some 1,800 journals—those flagged as exclusions and journals that might not yet have final 2018 issues posted—for revisits. I revisited those journals April 2-12, 2019. Journals flagged as X codes were visited a third time, April 15-17, 2019.

Some notes on what visits did and did *not* entail:

- 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. During an earlier investigation, at least one “journal” managed to hit me with a difficult-to-fix piece of malware and at least four others attempted to do so; this time, I wasn't taking any chances. Nor should readers or authors. There were literally hundreds of malware cases—but, with *DOAJ*'s help, nearly all of them were corrected.
- Both the percentage and number of excluded journals have dropped substantially since last year: number down from 413 to 235, percentage down from 4.0% to 1.9%.

Codes XD through XX

Table 2.1 summarizes excluded journals by type

Code	Count
XD: Duplicate or empty since 2012	110
XM: Malware encountered	17
XN: Not open access	8
XX: Unreachable/unworkable	100
Total excluded	235

Table 2.1. Excluded journals

Compared to last year, XD (which, unlike the other codes, does not mean something's wrong with the journal—just that it doesn't have articles after 2012) is down more than 30%; XM is down more than **90%**; XN is down more than 70%. These are all excellent figures. Thanks to patience on my part, XI has been eliminated.

Table 2.2 shows article counts in those cases where I could derive them, either from *DOAJ* or from previous years.

Code	2018	2017	2016	2015	2014	2013
XM	8	189	158	126	118	89
XN	5	45	69	29	5	27
XX	105	1,978	2,369	2,502	2,843	1,934
Total	118	2,212	2,596	2,657	2,966	2,050

Table 2.2. Partial article counts for excluded journals

By definition, XD journals have no articles in 2013-2018, so that row is omitted. Fortunately, excluded journals are a tiny part of the OA field—anywhere from 0.02% to 0.7% of articles.

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 had articles after 2012.

XM: Malware encountered

The efforts of *DOAJ* editors and other staff, and of contacted university publishers, were overwhelmingly successful, changing a large issue into an almost-trivial one. Characteristics of the remaining 17:

Country: All of last year's Indonesia, Malaysia and Romania journals have been cleaned. Almost all current cases are in Latin America: four each in Argentina and Brazil, three in Ecuador, two in Mexico and one each in Colombia. Peru, Spain and Venezuela.

Publisher category: All from universities.

Nature of problem: Malwarebytes Pro says that five are phishing, four have Trojan attacks; one is spyware, and four have other forms of malware. Two have defective SSL certificates.

XN: Not open access

What few of these are left have an assortment of flaws. One is admirable but not a journal at all; four require registration/login; and three have fees for some articles or lack peer review.

XX: Unreachable/unworkable

This motley crew includes a mix of issues—404 and 403 errors, database failures, dsn lookup failures and others.

Highlights and Key Points

- In most areas, problems have been reduced from 2017.
- Malware has gone from a serious problem to a trivial one.

3. Looking Back: Continuing, New and Dropped Journals

Setting aside excluded journals, the dataset for this year includes 9,875 journals that were in last year's study and 2,308 that are new to this year. It may be useful to compare profiles for the continuing and new journals. A discussion of the dropped journals ends the chapter.

Key Facts

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	9,875	619,469			\$981	8%
Fee	2,951	374,677	60%	4%	\$1,623	3%
No-fee	6,924	244,792	40%	-6%		
Biomed	2,518	223,256	36%	1%	\$1,386	7%
Fee	1,307	162,243	73%	4%	\$1,907	3%
No-fee	1,211	61,013	27%	-9%		
STEM	2,645	260,040	42%	3%	\$1,074	3%
Fee	1,037	181,467	70%	1%	\$1,538	2%
No-fee	1,608	78,573	30%	-3%		
H&SS	4,712	136,173	22%	-8%	\$142	16%
Fee	607	30,967	23%	3%	\$626	12%
No-fee	4,105	105,206	77%	-1%		

Table 3.1a. Key facts, continuing

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	2,305	92,201			\$450	-51%
Fee	555	39,149	42%	-27%	\$1,059	-32%
No-fee	1,750	53,052	58%	37%		
Biomed	544	29,586	32%	-10%	\$620	-52%
Fee	212	15,044	51%	-27%	\$1,220	-34%
No-fee	332	14,542	49%	64%		
STEM	536	29,482	32%	-21%	\$735	-29%
Fee	166	17,765	60%	-12%	\$1,220	-19%
No-fee	370	11,717	40%	27%		
H&SS	1,225	33,133	36%	51%	\$44	-65%
Fee	177	6,340	19%	-13%	\$228	-59%
No-fee	1,048	26,793	81%	4%		

Table 3.1b. Key facts, new

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 21% lower percentage of all articles in new journals than in all journals, and average cost of H&SS articles is 65% lower than for H&SS as a whole, \$44 compared to \$123.

Articles and Journals by Year

	2018	2017	2016	2015	2014	2013
Journals	9,217	9,597	9,581	9,170	8,498	7,609
%No-fee	69%	70%	70%	70%	71%	71%
Articles	619,469	563,341	528,809	483,182	439,320	373,039
%No-fee	40%	43%	44%	44%	45%	46%

Table 3.2a. Articles and journals by year, continuing

16 Gold Open Access 2013-2018: articles in journals (GOA4)

	2018	2017	2016	2015	2014	2013
Journals	2,248	2,172	1,802	1,526	1,273	1,094
%No-fee	76%	77%	80%	81%	81%	81%
Articles	92,201	88,043	66,898	58,518	50,957	43,412
%No-fee	58%	58%	67%	66%	67%	65%

Table 3.2b. Articles and journals by year, new

As should be clear: “new” means “new to DOAJ,” since more than 1,000 of these journals published articles in 2013.

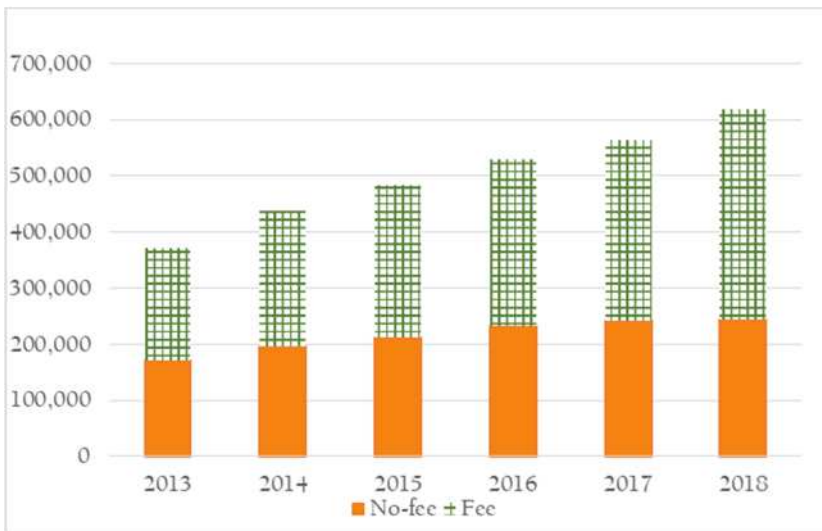


Figure 3.2a. Fee and no-fee articles by year, continuing

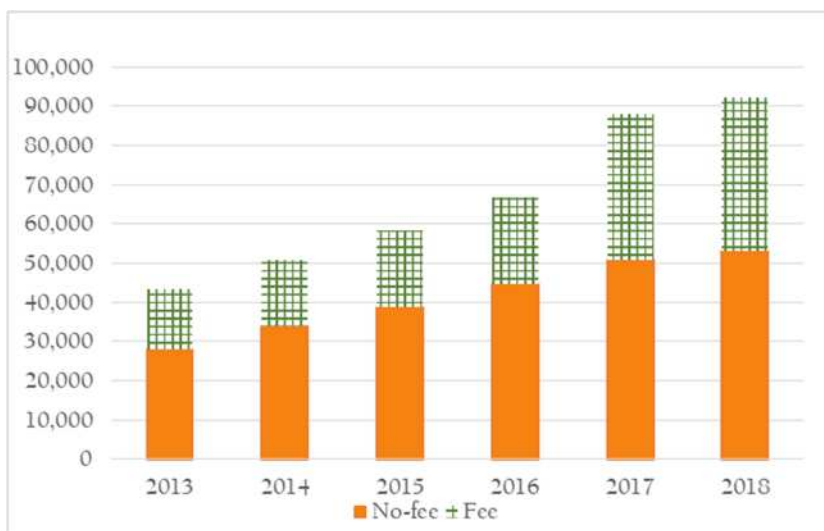


Figure 3.1b. Fee and no-fee articles by year, new

Article Volume

See Chapter 5 for a discussion of article volume brackets.

	Journals	Articles	%No-fee	\$/article
Largest: 600+	131	208,339	15%	\$1,720
Large: 150-599	676	136,978	25%	\$1,173
Med.: 60-149	1,916	126,092	53%	\$472
Small: 20-59	5,166	130,155	76%	\$209
Smallest: 0-19	1,986	17,905	81%	\$127

Table 3.3a. Article volume, continuing

	Journals	Articles	%No-fee	\$/article
Largest: 600+	12	13,407	22%	\$1,238
Large: 150-599	87	15,708	29%	\$681
Med.: 60-149	349	24,284	60%	\$369
Small: 20-59	1,213	31,744	80%	\$139
Smallest: 0-19	644	7,058	82%	\$116

Table 3.3b. Article volume, new

Very few of the largest journals were added, and (not surprisingly) those journals published relatively fewer articles than for continuing journals

Fee Level

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

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	959	32%	10%	246,618	66%	40%
\$600-\$1.399	595	20%	6%	46,553	12%	8%
\$200-\$599	550	19%	6%	43,174	12%	7%
\$0.01-\$199	847	29%	9%	38,332	10%	6%
No fee	6,924		70%	244,792		40%

Table 3.4a. Fee level, continuing

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	124	22%	5%	12,903	33%	14%
\$600-\$1.399	83	15%	4%	10,125	26%	11%
\$200-\$599	91	16%	4%	5,424	14%	6%
\$0.01-\$199	257	46%	11%	10,697	27%	12%
No fee	1,750		76%	53,052		58%

Table 3.4b. Fee level, new

Newly-added journals are much less likely to have very high fees and somewhat less likely to have moderately high fees—and only half as high a percentage of fee-based articles appear in expensive journals. And, to be sure, no-fee journals are better represented and publish a much higher percentage of articles than among continuing journals.

Starting Date

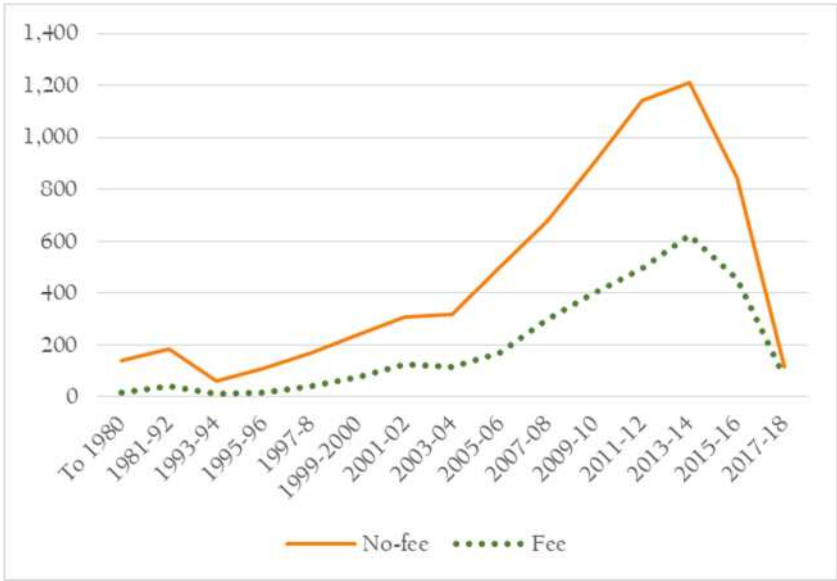


Figure 3.2a. Starting date, continuing

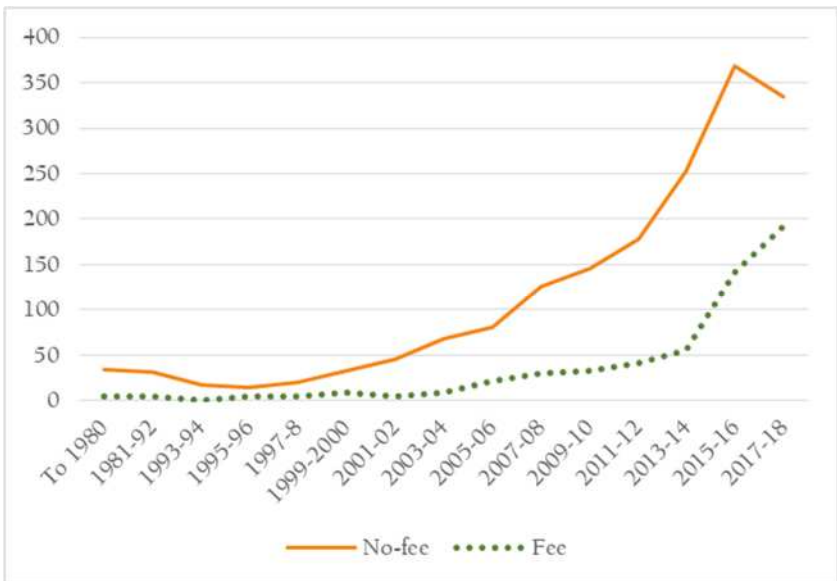


Figure 3.2b. Starting date, new

It would seem obvious that newly-added journals are much more likely to be newish journals—but starting dates still go back quite a long time. Note the dominance of no-fee journals.

Revenue

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

	Articles	Revenue	\$/article
\$1,400+	246,618	\$542,607,663	\$2,200
\$600-\$1.399	46,553	\$45,658,411	\$981
\$200-\$599	43,174	\$16,607,921	\$385
\$0.20-\$199	38,332	\$3,068,310	\$80
No fee	244,792		
Total	619,469	\$607,942,305	\$981

Table 3.5a. Revenue, continuing

	Articles	Revenue	\$/article
\$1,400+	12,903	\$28,774,533	\$2,230
\$600-\$1.399	10,125	\$9,945,473	\$982
\$200-\$599	5,424	\$2,013,945	\$371
\$0.20-\$199	10,697	\$738,829	\$69
No fee	53,052		
Total	92,201	\$41,472,779	\$450

Table 3.5b. Revenue, new

The biggest and perhaps most surprising difference: while very expensive journals are much less common among the newly-added (new about 13% of continuing), those journals have far fewer articles (new about 5% of old).

Region

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	3,308	316,253	23%	\$1,505
Pacific/English	732	80,105	22%	\$1,358
Latin America	1,874	71,580	84%	\$52
Asia	1,617	58,496	55%	\$179
Eastern Europe	1,610	57,991	66%	\$99
Middle East	609	28,803	73%	\$66
Africa	125	6,241	37%	\$241

Table 3.6a. Region, continuing

Region	Journals	Articles	%No-fee	\$/article
Western Europe	514	26,698	42%	\$794
Eastern Europe	422	17,060	65%	\$73
Latin America	417	12,911	97%	\$5
Asia	446	12,582	67%	\$75
Pacific/English	185	11,997	22%	\$1,458
Middle East	288	10,077	66%	\$42
Africa	33	876	64%	\$98

Table 3.6b. Region, new

As will usually be the case, tables are arranged in order by article count.

Publisher Category

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

Category	Journals	Articles	%No-fee	\$/article
Open Access	2,122	244,713	13%	\$1,532
Univ/college	5,605	182,260	75%	\$134
Traditional	813	112,525	31%	\$1,472
Society/govt	927	57,694	47%	\$634
Miscellaneous	408	22,277	62%	\$286

Table 3.7a. Publisher category, continuing

22 *Gold Open Access 2013-2018: articles in journals (GOA4)*

Category	Journals	Articles	%No-fee	\$/article
Univ/college	1,435	46,532	73%	\$113
Society/govt	225	16,864	33%	\$984
Open Access	328	12,460	55%	\$480
Traditional	202	11,816	35%	\$1,102
Miscellaneous	115	4,529	61%	\$136

Table 3.7b. Publisher category, new

The most obvious point here is that journals published by universities and colleges not only dominate journal introductions, those journals published more articles than other categories of new journals.

Growth and Shrinkage

Change 2017-18	Count	Percent	Cum%
Grew 50%+	1,321	13.4%	
Grew 25-49.9%	998	10.1%	23.5%
Grew 10-24.99%	1,100	11.1%	34.6%
Even, ±9.99%	2,916	29.5%	64.2%
Shrank 10-24.99%	1,267	12.8%	77.0%
Shrank 25-49.99%	1,177	11.9%	88.9%
Shrank 50%+	1,096	11.1%	

Table 3.8a. Growth and shrinkage, continuing

Change 2017-18	Count	Percent	Cum%
Grew 50%+	463	20.1%	
Grew 25-49.9%	202	8.8%	28.9%
Grew 10-24.99%	228	9.9%	38.7%
Even, ±9.99%	638	27.7%	66.4%
Shrank 10-24.99%	276	12.0%	78.4%
Shrank 25-49.99%	255	11.1%	89.5%
Shrank 50%+	243	10.5%	

Table 3.8b. Growth and shrinkage, new

Subject

Subject	Jour.	Art.	%No-fee	\$/article
Medicine	2,185	184,279	31%	\$1,266
Other Sciences	191	61,005	11%	\$1,835
Biology	333	38,977	11%	\$1,952
Engineering	344	28,533	27%	\$976
Ecology	263	27,762	30%	\$954
Technology	184	24,128	63%	\$562
Physics	134	23,789	37%	\$986
Agriculture	384	22,434	32%	\$832
Chemistry	138	21,594	19%	\$1,148
Education	648	20,560	80%	\$71
Earth Sciences	337	18,288	46%	\$646
Economics	629	16,643	66%	\$101
Language & Literature	602	16,347	80%	\$35
Sociology	407	13,317	74%	\$171
Anthropology	422	12,182	78%	\$79
Computer Science	250	11,960	36%	\$560
Zoology	221	11,012	32%	\$544
Mathematics	199	9,535	42%	\$831
Psychology	171	7,231	50%	\$1,223
Miscellany	194	7,162	69%	\$111
Law	278	6,774	91%	\$23
History	254	6,756	95%	\$9
Arts & Architecture	244	6,650	73%	\$173
Political Science	228	5,880	90%	\$27
Media & Communications	185	5,294	88%	\$60
Religion	166	4,417	67%	\$146
Philosophy	158	3,944	93%	\$64
Library Science	126	3,016	97%	\$9

Table 3.9a. Subject, continuing

Subject	Jour.	Art.	%No-fee	\$/article
Medicine	480	25,598	53%	\$583
Chemistry	18	5,890	6%	\$931
Education	195	5,580	85%	\$27
Physics	23	5,183	10%	\$2,082
Sociology	122	4,120	64%	\$71
Biology	64	3,988	22%	\$860
Language & Literature	161	3,858	84%	\$20
Engineering	88	3,692	56%	\$215
Economics	162	3,645	66%	\$97
Agriculture	85	3,612	52%	\$368
Political Science	90	2,454	85%	\$12
Earth Sciences	72	2,231	77%	\$329
Law	86	2,156	94%	\$6
Arts & Architecture	71	2,032	75%	\$62
Ecology	51	1,983	39%	\$695
History	70	1,836	96%	\$3
Miscellany	17	1,713	93%	\$26
Anthropology	67	1,653	80%	\$96
Computer Science	46	1,595	62%	\$135
Technology	47	1,481	73%	\$84
Zoology	39	1,473	49%	\$350
Other Sciences	25	1,263	54%	\$166
Philosophy	49	1,217	96%	\$3
Mathematics	42	1,079	84%	\$97
Psychology	38	1,013	56%	\$177
Media & Communications	36	798	97%	\$2
Religion	42	711	85%	\$11
Library Science	19	347	100%	\$0

Table 3.9b. Subject, new

There’s so much to compare in these two tables that it’s difficult to note highlights, other than the obvious one that no megajournals were added, this dropping “Other Sciences” from second to 21st place.

There are many other striking differences, to be sure: newly-added medical journals and biology journals averaged less than half the cost per article of continuing ones; newly-added physics journals—presumably not part of SCOAP—averaged more than twice the cost per article of continuing ones; newly-added philosophy journals averaged a trivial \$3 per article, a big drop from the already modest \$64 for ongoing journals—and so on.

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 up to four pages each, since 119 countries are represented. (See Chapter 8 for a complete list.)

I won't add comments on these tables. It should be clear that Switzerland's and the United Kingdom's positions in the continuing table are largely due to very large publishers headquartered there.

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:

<i>DOAJ</i>	<i>GOA4</i>	Journals
Bolivia, Plurinational State of	Bolivia	6
Congo, the Democratic Republic of the	Dem. Rep. Congo	1
Iran, Islamic Republic of	Iran	432
Korea, Republic of	South Korea	88
Macedonia, the Former Yugoslav Republic of	Macedonia	8
Moldova, Republic of	Moldova	28
Palestine, State of	Palestine	1
Russian Federation	Russia	290
Taiwan, Province of China	Taiwan	33
Venezuela, Bolivarian Republic of	Venezuela	29

Table 10. Revised country names

26 *Gold Open Access 2013-2018: articles in journals (GOA4)*

Country	Journals	Articles	%No-fee	\$/article
United Kingdom	1,227	131,686	5%	\$2,006
Switzerland	268	95,573	3%	\$1,840
United States	534	72,793	18%	\$1,433
Brazil	1,067	50,157	81%	\$66
Indonesia	1,068	22,550	59%	\$31
France	192	22,388	98%	\$24
Germany	229	17,574	55%	\$475
India	202	16,311	53%	\$289
Spain	573	16,258	90%	\$69
Netherlands	189	15,516	32%	\$1,404
Poland	449	14,102	58%	\$170
Iran	300	11,350	79%	\$46
Turkey	220	11,201	69%	\$60
Russia	193	10,832	86%	\$19
Romania	285	8,319	69%	\$34
Italy	281	7,769	76%	\$192
Ukraine	119	6,763	54%	\$41
Colombia	259	6,484	98%	\$3
China	68	6,389	43%	\$311
Canada	116	4,276	60%	\$755
Serbia	124	4,045	76%	\$39
South Korea	60	3,697	57%	\$226
Argentina	155	3,391	92%	\$39
Mexico	95	3,170	82%	\$26
Egypt	40	3,042	62%	\$175
South Africa	72	2,865	25%	\$405
Australia	70	2,853	62%	\$420
Portugal	82	2,675	70%	\$150
Croatia	83	2,567	72%	\$128
Czech Republic	81	2,274	59%	\$146
Chile	81	2,017	85%	\$79

Table 3.11a. Country of publication (top 31), continuing

3. Looking Back: Continuing, New and Dropped Journals 27

Country	Journals	Articles	%No-fee	\$/article
United Kingdom	211	15,300	14%	\$1,308
United States	129	9,946	19%	\$1,548
Brazil	177	6,355	97%	\$4
Russia	96	5,566	82%	\$13
Indonesia	271	4,855	67%	\$23
Iran	130	4,383	60%	\$32
Turkey	112	3,982	85%	\$8
Ukraine	64	3,896	33%	\$72
Spain	101	2,936	87%	\$61
India	52	2,313	80%	\$28
China	19	2,200	52%	\$184
Poland	76	2,126	72%	\$82
Switzerland	22	2,047	86%	\$107
Italy	54	1,885	85%	\$18
Cuba	32	1,662	100%	\$0
Netherlands	24	1,577	88%	\$101
South Korea	28	1,502	67%	\$117
Colombia	59	1,462	97%	\$3
Australia	22	1,383	15%	\$1,383
Germany	27	1,313	31%	\$368
Lithuania	22	1,172	37%	\$356
Mexico	26	910	83%	\$45
Argentina	46	904	98%	\$1
Romania	32	889	65%	\$65
Canada	33	649	72%	\$283
Serbia	31	590	76%	\$11
Chile	26	577	100%	\$0
Croatia	26	565	100%	\$0
Malaysia	24	553	79%	\$54
Iraq	11	448	20%	\$74
South Africa	15	430	63%	\$114

Table 3.11b. Country of publication (top 31), new

Dropped Journals

Of 616 journals I was unable to match between the January 1, 2019 DOAJ metadata and the GOAJ3 spreadsheet, many appear to be ceased, reassigned or merged journals cleaned up by their publishers, including 319 from Hindawi.

I was able to check the 616, of which 141 would qualify as currently active if still in DOAJ. The rest are ceased, inactive, not OA (four) or inaccessible (75).

The mini-profile that follows includes *all* 616, including those that would be excluded from a normal profile (136).

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	616	5,693			\$252	-72%
Fee	383	2,867	50%	-13%	\$500	-68%
No-fee	233	2,826	50%	19%		
Biomed	214	1,697	30%	-16%	\$485	-63%
Fee	168	1,305	77%	10%	\$630	-66%
No-fee	46	392	23%	-23%		
STEM	251	1,948	34%	-16%	\$128	-88%
Fee	181	1,116	57%	-17%	\$224	-85%
No-fee	70	832	43%	37%		
H&SS	151	2,048	36%	51%	\$176	43%
Fee	34	446	22%	-1%	\$808	45%
No-fee	117	1,602	78%	0%		

Table 3.12. Key facts, dropped journals

	2018	2017	2016	2015	2014	2013
Journals	162	343	407	440	486	404
%No-fee	58%	44%	40%	34%	29%	29%
Articles	5,693	9,775	10,415	9,696	12,017	10,986
%No-fee	50%	44%	45%	43%	30%	26%

Table 3.13. Articles and journals by year, dropped journals

4. Four-year Comparisons

Is it useful to compare the journal universe of *DOAJ* as it was at the very end of 2015 (*GOAJ*), 2016 (*GOAJ2*), 2017 (*GOAJ3*) and 2018 (*GOAJ4*)? Here's a brief attempt in four tables and ten graphs. The key facts are in chronological order (Figure 4.4 duplicates Figure 1.1); the ten graphs show each generation as a separate line.

Key Facts

GOAJ	Jrn.	Art.	Art%	\$/Art
All	10,324	566,922		\$665
Fee	2,974	315,968	56%	\$1,192
No-fee	7,350	250,954	44%	
Biomed	2,876	207,062	37%	\$1,020
Fee	1,447	137,782	67%	\$1,533
No-fee	1,429	69,280	33%	
STEM	3,037	240,462	42%	\$644
Fee	1,130	152,036	63%	\$1,019
No-fee	1,907	88,426	37%	
H&SS	4,411	119,398	21%	\$89
Fee	397	26,150	22%	\$405
No-fee	4,014	93,248	78%	

Table 4.1. Key facts, *GOAJ* (2011-2015)

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GOAJ2	Jrn.	Art.	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%	

Table 4.2. Key facts, GOAJ2 (2011-2016)

GOAJ3	Jrn.	Art.	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%	

Table 4.3. Key facts, GOAJ3 (2012-2017)

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%	

Table 4.4. Key facts, GOA4 (2013-2018)

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

Six-year Graphs

These graphs show all four generations in each graph. Note that Figure 4.1 shows *active* journals (ones with at least one article in the year), whereas the table include journals active during the time period but not necessarily in the current year.

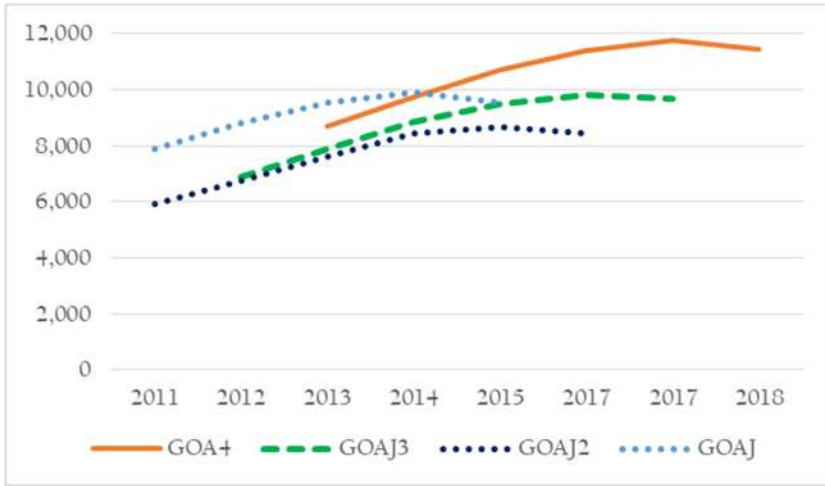


Figure 4.1 Active journals across six years

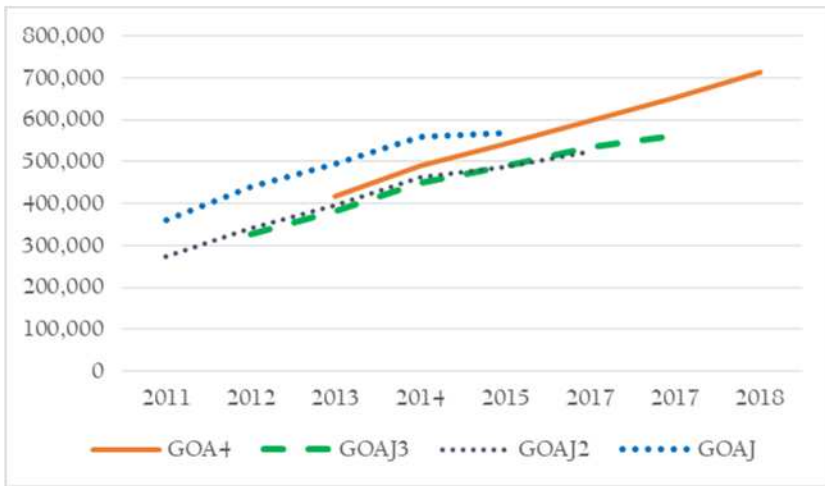


Figure 4.2. Articles across six years

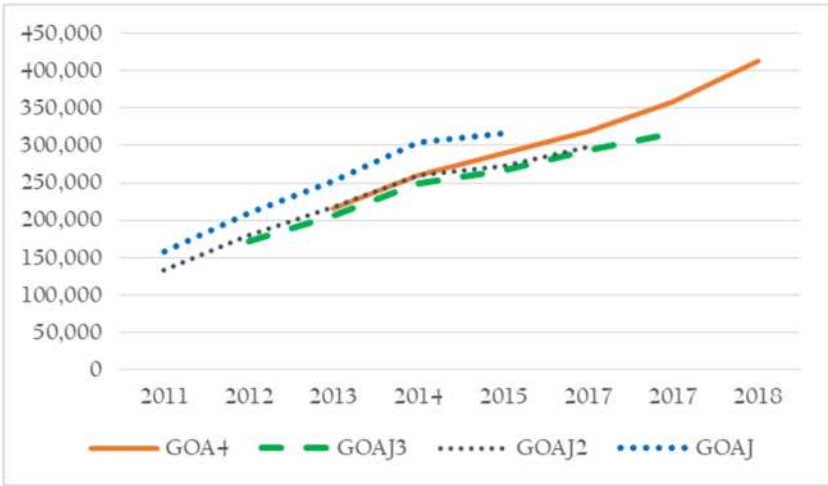


Figure 4.3. Articles in fee-charging journals

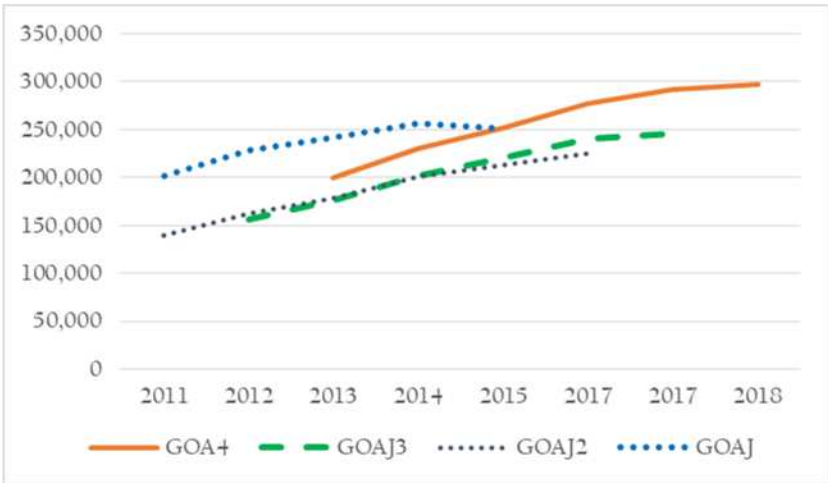


Figure 4.4. Articles In no-fee journals

34 Gold Open Access 2013-2018: articles in journals (GOA4)

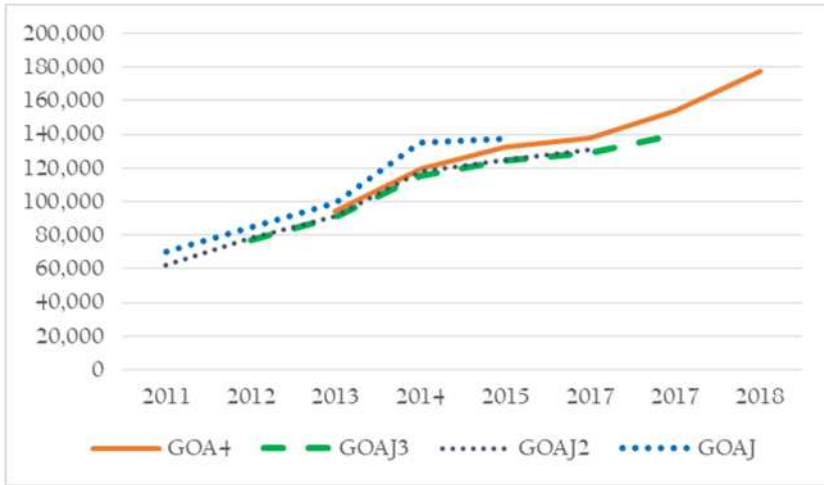


Figure 4.5. Articles in fee-charging biomed journals

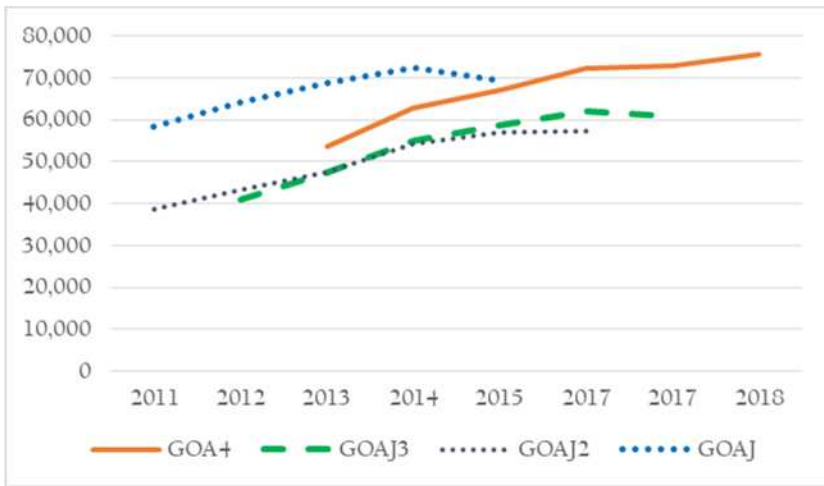


Figure 4.6. Articles in no-fee biomed journals

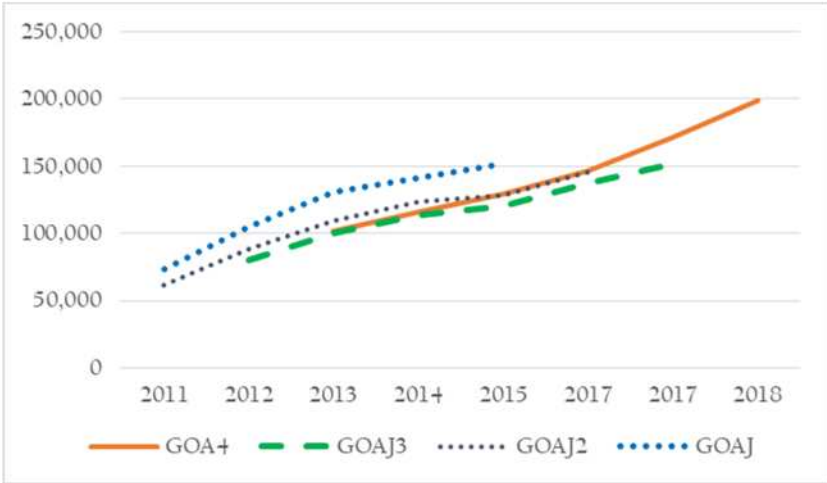


Figure 4.7. Articles in fee-charging STEM journals

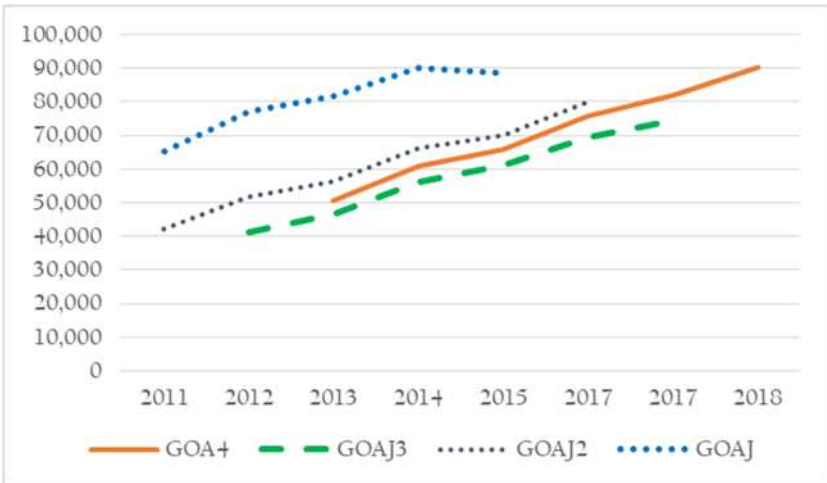


Figure 4.8. Articles in no-fee STEM journals

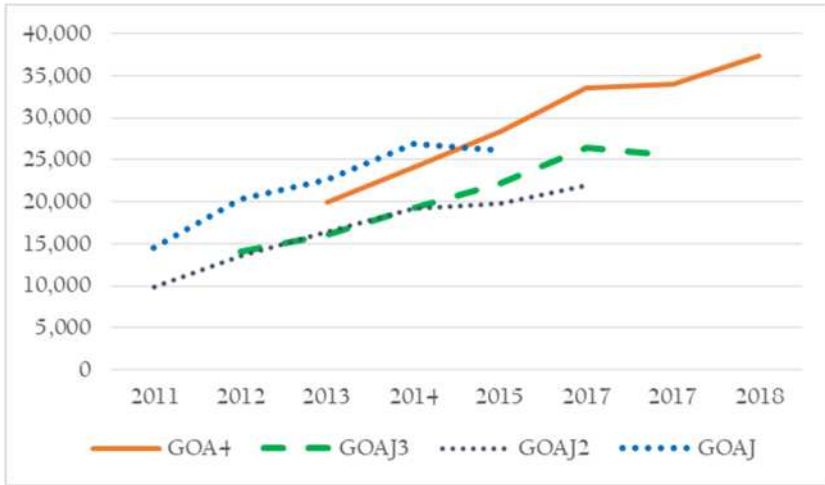


Figure 4.9. Articles in fee-charging Hum&SS journals

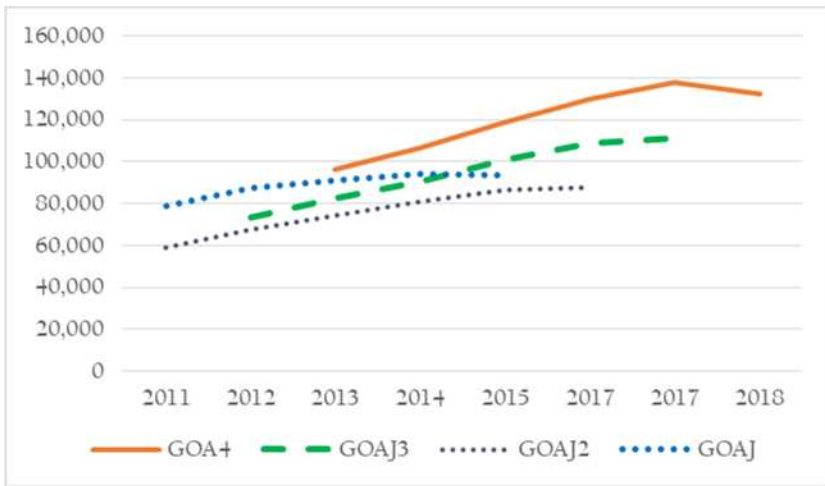


Figure 4.10 Articles in no-fee Hum&SS journals

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 2013-2018. 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 two years.

	Journals	Articles	%No-fee	\$/article
Largest: 600+	143	221,746	15%	\$1,691
Large: 150-599	763	152,686	25%	\$1,122
Med.: 60-149	2,265	150,376	54%	\$455
Small: 20-59	6,379	161,899	77%	\$195
Smallest: 0-19	2,630	24,963	81%	\$124

Table 5.1. Article volume, overall

Detailed Breakdown of Journals by Peak Volume

Table 5.2 offers a detailed breakdown of journals by peak article volume. The peak number is the *lower* limit of the row—thus, the first row is 20,000 articles and up, while the second is 2,000 to 19,999.

Peak	Journals	Act. 18	Articles	%No-fee	% of articles
20,000	2	2	36,999	0.00%	5.20%
2,000	31	31	102,563	21.47%	14.41%
1,000	43	42	45,180	12.78%	6.35%
800	22	22	13,241	19.67%	1.86%
600	45	45	23,763	11.59%	3.34%
400	100	100	38,007	12.61%	5.34%
300	125	122	31,097	17.29%	4.37%
200	273	268	49,187	33.01%	6.91%
150	265	263	34,395	34.65%	4.83%
125	284	278	28,015	42.31%	3.94%
100	443	426	35,993	50.30%	5.06%
80	572	564	37,827	55.89%	5.32%
60	966	933	48,541	63.07%	6.82%
50	784	761	32,160	71.32%	4.52%
40	1,214	1162	39,794	76.67%	5.59%
30	1,785	1720	45,342	78.80%	6.37%
20	2,596	2438	44,603	78.82%	6.27%
15	1,271	1154	15,312	80.44%	2.15%
10	999	856	8,204	84.30%	1.15%
5	350	274	1,436	75.49%	0.20%
1	10	4	11	72.73%	0.00%

Table 5.2. Article volume, detailed

Table 5.2 amplifies the truth of Table 5.1: larger journals tend to have fees, smaller ones tend not to.

Profiles by Volume

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

Largest journals: 600 articles or more

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	143	221,746			\$1,691	85%
Fee	119	188,594	85%	46%	\$1,988	27%
No-fee	24	33,152	15%	-64%		
Biomed	66	66,500	30%	-16%	\$2,083	61%
Fee	59	60,800	91%	30%	\$2,279	23%
No-fee	7	5,700	9%	-71%		
STEM	69	148,276	67%	64%	\$1,539	48%
Fee	56	123,000	83%	21%	\$1,855	23%
No-fee	13	25,276	17%	-45%		
H&SS	8	6,970	3%	-87%	\$1,181	860%
Fee	4	4,794	69%	212%	\$1,717	208%
No-fee	4	2,176	31%	-60%		

Table 5.3. Key facts, largest journals

	2018	2017	2016	2015	2014	2013
Journals	142	141	137	134	131	120
%No-fee	17%	17%	17%	16%	16%	13%
Articles	221,746	182,886	157,576	139,337	122,668	97,386
%No-fee	15%	12%	12%	10%	10%	7%

Table 5.4. Articles and journals by year, largest

Key Facts shows *all* journals in a subset while some other tables show *active* journals. STEM has more than its share of largest journals, while H&SS has almost none—and the few largest H&SS journals are *much* more expensive than most fee H&SS journals. For that matter, fees are higher than usual in all segments, although the small portion of no-fee journals is growing slightly over time.

The startling 860% for H&SS overall relative \$/article percentage combines two anomalies: the largest fee H&SS journals are expensive, and they're twice as common in this size group as overall. For that matter, no-fee articles are substantially underrepresented in all three segments, with very high average fees as a result. Largest journals are growing rapidly, with 21% more articles in 2018 than in 2017.

Large Journals: 150 to 599 articles

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	763	152,686			\$1,122	23%
Fee	512	14,359	75%	29%	\$1,498	-5%
No-fee	251	38,327	25%	-40%		
Biomed	417	86,374	57%	59%	\$1,431	10%
Fee	300	67,678	78%	12%	\$1,826	-1%
No-fee	117	18,696	22%	-28%		
STEM	224	47,292	31%	-24%	\$921	-11%
Fee	156	36,479	77%	12%	\$1,194	-21%
No-fee	68	10,813	23%	-27%		
H&SS	122	19,020	12%	-48%	\$223	82%
Fee	56	10,202	54%	143%	\$417	-25%
No-fee	66	8,818	46%	-41%		

Table 5.5. Key facts, large journals

	2018	2017	2016	2015	2014	2013
Journals	753	754	736	715	683	637
%No-fee	32%	33%	33%	34%	34%	34%
Articles	152,686	134,764	125,510	116,593	109,962	93,588
%No-fee	25%	28%	31%	32%	33%	34%

Table 5.6. Articles and journals by year, large

Fee journals and articles still predominate, but to a much 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 on the low side for H&SS, but fee articles are far more common than in smaller categories.) This volume segment is heavy on biomed, light on STEM and very light on H&SS. No-fee articles are declining over time.

Medium-sized: 60 to 149 articles

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	2,265	150,376			\$455	-50%
Fee	945	68,665	46%	-21%	\$997	-36%
No-fee	1,320	81,711	54%	30%		
Biomed	820	59,295	39%	11%	\$732	-44%
Fee	417	31,925	54%	-23%	\$1,360	-26%
No-fee	403	27,370	46%	54%		
STEM	718	47,960	32%	-22%	\$425	-59%
Fee	363	25,811	54%	-22%	\$789	-48%
No-fee	355	22,149	46%	48%		
H&SS	727	43,121	29%	21%	\$109	-11%
Fee	165	10,929	25%	15%	\$430	-23%
No-fee	562	32,192	75%	-4%		

Table 5.7. Key facts, medium-sized journals

	2018	2017	2016	2015	2014	2013
Journals	2,201	2,219	2,180	2,105	1,970	1,800
%No-fee	58%	58%	59%	59%	60%	61%
Articles	150,376	143,157	134,132	125,401	114,242	101,132
%No-fee	54%	57%	58%	59%	60%	61%

Table 5.8. Articles and journals by year, medium-sized

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, as no-fee articles begin to take over—dominant in H&SS, a majority in biomed and a slight minority in STEM.

These journals are relatively slow-growing, and while no-fee articles are still in the majority, that majority is shrinking slowly over time.

Small Journals: 20 to 59 articles

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	6,379	161,899			\$195	-79%
Fee	1,420	37,570	23%	-60%	\$841	-46%
No-fee	4,959	124,329	77%	83%		
Biomed	1,347	37,139	23%	-35%	\$546	-58%
Fee	552	15,374	41%	-41%	\$1,319	-29%
No-fee	795	21,765	59%	96%		
STEM	1,547	40,031	25%	-39%	\$201	-81%
Fee	473	12,468	31%	-55%	\$646	-57%
No-fee	1,074	27,563	69%	121%		
H&SS	3,485	84,729	52%	120%	\$38	-69%
Fee	395	9,728	11%	-48%	\$335	-40%
No-fee	3,090	75,001	89%	14%		

Table 5.9. Key facts, small journals

	2018	2017	2016	2015	2014	2013
Journals	6,081	6,244	6,055	5,695	5,192	4,594
%No-fee	77%	78%	78%	79%	79%	80%
Articles	161,899	163,679	153,677	138,393	124,407	108,282
%No-fee	77%	78%	78%	79%	79%	79%

Table 5.10. Articles and journals by year, small-sized

More than half of all journals fall into this category—and more than three-quarters of the articles are in no-fee journals. Not surprisingly, H&SS is more than twice as large a portion as overall. These journals are, overall, publishing just slightly *fewer* articles than in 2017.

Smallest: fewer than 20 articles

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	2,630	24,963			\$124	-86%
Fee	510	4,638	19%	-68%	\$665	-58%
No-fee	2,120	20,325	81%	95%		
Biomed	412	3,534	14%	-60%	\$556	-57%
Fee	191	1,510	43%	-39%	\$1,300	-30%
No-fee	221	2,024	57%	92%		
STEM	623	5,963	24%	-41%	\$124	-88%
Fee	155	1,474	25%	-64%	\$501	-67%
No-fee	468	4,489	75%	141%		
H&SS	1,595	15,466	62%	160%	\$25	-80%
Fee	164	1,654	11%	-51%	\$231	-59%
No-fee	1,431	13,812	89%	15%		

Table 5.11. Key facts, smallest journals

	2018	2017	2016	2015	2014	2013
Journals	2,288	2,411	2,275	2,047	1,795	1,552
%No-fee	80%	81%	81%	82%	83%	84%
Articles	24,963	26,898	24,812	21,976	18,998	16,063
%No-fee	81%	82%	82%	83%	84%	86%

Table 5.12. Articles and journals by year, smallest-sized

While small journals may be the norm in H&SS—30 to 50 articles a year for a specialized journal being reasonably typical—these are very small journals, almost all no-fee and mostly H&SS. Another case where article counts are down slightly from 2017.

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 be 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 some data on the maximum amount that journals are or may be getting from fees.

Fee Level

Table 6.1 shows articles and journals at various fee levels.

	Jour.	%Fee	%All	Art.	%Fee
\$1,400+	1,083	31%	9%	259,521	63%
\$600-\$1.399	678	19%	6%	56,678	14%
\$200-\$599	641	18%	5%	48,598	12%
\$0.01-\$199	1,104	31%	9%	49,029	12%
No fee	8,674		71%	297,844	

Table 6.1. Fee level, overall

The same fee level brackets have been used in previous years, but this table is more explicit that there *are* journals that have fees below \$2, apparently. The two "%Fee" columns show the level's percentage of all fee journals or articles: thus, while most fee journals have relatively modest fees, most fee-based articles are in the most expensive journals.

Revenue Ranges

Revenue	Journals	Cum J	Articles	Art/J
\$10 to \$33 million	4		49,139	12,285
\$4 to \$9.7 million	25	29	70,076	2,803
\$2 to \$3.84 million	20	49	24,861	1,243
\$1 to \$1.99 million	62	111	39,264	633
\$750,000 to \$986,400	47	158	20,819	443
\$500,000 to \$740,025	65	223	20,210	311
\$400,000 to \$494,000	49	272	11,258	230
\$300,000 to \$399,000	72	344	14,270	198
\$250,000 to \$299,200	57	401	9,105	160
\$200,000 to \$248,820	59	460	8,351	142
\$150,000 to \$199,500	105	565	12,943	123
\$100,000 to \$149,450	187	752	18,813	101
\$75,000 to \$99,858	166	918	13,869	84
\$50,000 to \$74,907	222	1,140	16,864	76
\$40,000 to \$49,984	139	1,279	9,367	67
\$30,000 to \$39,975	171	1,450	9,885	58
\$25,000 to \$29,928	118	1,568	6,518	55
\$20,000 to \$24,965	121	1,689	5,732	47
\$15,000 to \$19,845	173	1,862	7,334	42
\$10,000 to \$14,950	219	2,081	9,765	45
\$7,500 to \$9,900	119	2,200	3,352	28
\$5,000 to \$7,475	165	2,365	5,777	35
\$2,500 to \$4,988	266	2,631	9,055	34
\$1,000 to \$2,480	350	2,981	9,806	28
\$0.22 to \$995	403	3,384	7,393	18
\$0 (fee but no 2018 articles)	122	3,506	0	0

Table 6.2. Revenue by journal, detailed breakdown

Table 6.2, 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 *GOAJ2: Gold Open Access Journals 2011-2016* to provide comparability. (One of those modifications is noteworthy: the top potential revenue for a single journal, \$44 million last year, is down to \$33 million for 2018.)

Starting a fee-based gold OA journal isn't an easy way to get rich. Only 752 journals had apparent maximum revenues of at least \$100,000.

Max. 2018 Revenue	Publishers	Total
\$7-\$93 Million	17	\$561,259,131
\$2-\$4.98 Million	14	\$44,262,164
\$1-\$1.61 Million	5	\$6,612,610
\$500K-\$969K	13	\$9,770,176
\$250K-\$468K	17	\$6,243,836
\$100K-\$249K	52	\$8,276,330
\$50K-\$97K	65	\$4,727,282
\$25K-\$49K	105	\$3,765,691
\$15K-\$24K	89	\$1,681,144
\$10K-\$14K	97	\$1,171,262
\$5K-\$9K	115	\$808,184
\$2K-\$4K	169	\$551,224
\$4-\$1,999	316	\$286,050
Zero	4,556	

Table 6.3. Maximum potential 2018 revenue by publisher, not normalized

Many publishers have more than one journal. Table 6.3 shows a *very* rough picture of potential revenue by publisher, but no attempt was made to normalize publishers (so, for example, Springer, SpringerOpen and BMC are treated separately, as are De Gruyter and Sciendo). Are there actually 4,556 OA publishers with no revenue? Yes and no: there are that many publisher names (most of them universities or units within universities), but, again, I did not attempt to normalize.

Detailed Fee Breakdown

Fees range from \$0.01 (based on stated exchange rates, there is one Indonesian journal with the equivalent of a one-cent fee and three more with the equivalent of two cents) to an astonishing \$5,300—although, despite some alarmism, there are only two journals with fees greater than \$5,000, although one of the two is prolific.

Fee	Journals	Cum J	Articles	Art/J
\$4,000-\$5,300	17		10,534	620
\$3,000-\$3,975	62	79	8,356	135
\$2,500-\$2,990	96	175	38,361	400
\$2,250-\$2,495	113	288	21,455	190
\$2,000-\$2,249.04	287	575	42,176	147
\$1,750-\$1,990	285	860	84,668	297
\$1,500-\$1,745	185	1,045	47,205	255
\$1,250-\$1,495	125	1,170	16,620	133
\$1,000-\$1,246	264	1,434	17,932	68
\$750-\$995	226	1,660	21,792	96
\$600-\$747.12	102	1,762	7,100	70
\$400-\$595.99	245	2,007	20,438	83
\$300-\$399	207	2,214	14,448	70
\$200-\$299	189	2,403	13,712	73
\$100-\$199	347	2,750	18,049	52
\$0.01-\$99	756	3,506	30,980	41

Table 6.4. Fee level, detailed breakdown

There's no clear correlation between detailed fee levels and articles per journal, although it is true that most larger journals are on the expensive side.

The remainder of this chapter, and the rest of the project, uses the same fee breakdown used in Table 6.1 and in previous editions.

Journals by Segment and Fee Level

	Biomed	STEM	H&SS
\$1,400+	801	242	40
\$600-\$1.399	291	297	90
\$200-\$599	220	273	148
\$0.01-\$199	207	391	506
No fee	1,543	1,978	5,153

Table 6.5. Journals by fee level and segment

Table 6.5 spells it out in more detail: biomed dominates the most expensive journals—and very few H&SS journals have more than nominal fees. STEM has roughly equal numbers of journals at the three higher fee levels and, unlike medicine, more with nominal fees.

Growth and Shrinkage

Tables 6.6 through 6.10 show article change in each journal from 2017 to 2018 for the five fee levels. These tables include journals with no 2018 articles, always in the “Shrank 50%+” row unless they didn’t have 2017 articles either (making them “Even, ±9.99%”).

Change 2017-18	Count	Percent	Cum%
Grew 50%+	261	24.1%	
Grew 25-49.9%	153	14.1%	38.2%
Grew 10-24.99%	144	13.3%	51.5%
Even, ±9.99%	239	22.1%	73.6%
Shrank 10-24.99%	114	10.5%	84.1%
Shrank 25-49.99%	95	8.8%	92.9%
Shrank 50%+	77	7.1%	

Table 6.6. Growth and shrinkage, journals charging \$1,400+

These journals are generally growing, some quite rapidly; only 26% shrank by 10% or more from 2017 to 2018.

Change 2017-18	Count	Percent	Cum%
Grew 50%+	176	26.0%	
Grew 25-49.9%	94	13.9%	39.8%
Grew 10-24.99%	87	12.8%	52.7%
Even, $\pm 9.99\%$	117	17.3%	69.9%
Shrank 10-24.99%	70	10.3%	80.2%
Shrank 25-49.99%	81	11.9%	92.2%
Shrank 50%+	53	7.8%	

Table 6.7. Growth and shrinkage, journals charging \$600-\$1,399

Again, most journals are growing, with about 30% shrinking.

Change 2017-18	Count	Percent	Cum%
Grew 50%+	147	22.9%	
Grew 25-49.9%	63	9.8%	32.8%
Grew 10-24.99%	78	12.2%	44.9%
Even, $\pm 9.99\%$	159	24.8%	69.7%
Shrank 10-24.99%	78	12.2%	81.9%
Shrank 25-49.99%	59	9.2%	91.1%
Shrank 50%+	57	8.9%	

Table 6.8. Growth and shrinkage, journals charging \$200-\$599

While a lot more journals grew than shrank, the numbers aren't as good as for the two higher-fee levels. Still, only about 30% are shrinking: the difference is a larger percentage of journals on an even course.

Change 2017-18	Count	Percent	Cum%
Grew 50%+	119	10.8%	
Grew 25-49.9%	96	8.7%	19.5%
Grew 10-24.99%	112	10.1%	29.6%
Even, ±9.99%	350	31.7%	61.3%
Shrank 10-24.99%	170	15.4%	76.7%
Shrank 25-49.99%	153	13.9%	90.6%
Shrank 50%+	104	9.4%	

Table 6.9. Growth and shrinkage, journals charging \$0.01-\$199

A very large portion of relatively-steady journals, but here (for the first time), more journals are shrinking than growing (39.7% to 29.6%).

Change 2017-18	Count	Percent	Cum%
Grew 50%+	1,081	12.5%	
Grew 25-49.9%	794	9.2%	21.6%
Grew 10-24.99%	907	10.5%	32.1%
Even, ±9.99%	2,689	31.0%	63.1%
Shrank 10-24.99%	1,111	12.8%	75.9%
Shrank 25-49.99%	1,044	12.0%	87.9%
Shrank 50%+	1,048	12.1%	

Table 6.10. Growth and shrinkage, no-fee journals

Another case where nearly a third of journals are on an even keel—and somewhat more journals are shrinking than growing (36.9% to 32.1%).

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 five categories, based on the publisher name as it appears in *DOAJ*. The categories are:

- **University, college or institute:** Excluding (as much as possible) “institutes” that don’t have educational or research functions. A university press falls into this category even if it seems to function as a traditional publisher.
- **Societies, associations and government agencies:** There aren’t many government-published OA journals, not enough to create a separate category.
- **Traditional publishers:** Companies (or publisher names) that publish subscription journals as well as multiple OA journals.
- **Open access publishers:** Publishers that don’t appear to publish many subscription journals but do publish multiple OA journals.
- **Miscellaneous:** Publisher names (frequently journal names) that don’t obviously fall into the other types and that only have one or two journals.

I searched for information on many non-obvious publisher names and assigned categories appropriately. I’m sure there are quite a few miscellaneous journals that are from universities, colleges, societies, associations or government agencies but where the non-English publisher name didn’t make that obvious—but never more than a couple for each publisher name. There are only half as many miscellaneous journals as in *GOAJ3* largely because I was able to identify more journals as belonging in one of the other categories.

Category	Journals	Articles	%No-fee	\$/article
Open Access	2,450	257,173	15%	\$1,481
Univ/college	7,040	228,792	75%	\$130
Traditional	1,015	124,341	32%	\$1,437
Society/govt	1,152	74,558	44%	\$713
Miscellaneous	522	26,788	62%	\$261

Table 7.1. Publisher category, overall

Table 7.1 shows articles and journals by publisher category, sorted by number of articles. The difference between the two largest categories by article and journal count could hardly be starker. OA publishers predominantly charge fees, more so than traditional publishers, where only one of four university-published articles involves fees. And the *average* cost per article for OA publishers is over \$1,400, as is true for traditional publishers—more than 11 times as much as for university publishers.

The rest of this chapter is a series of profiles for each publisher category, in the order shown above.

Open Access Publishers

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	2,450	257,173			\$1,481	62%
Fee	1,406	219,278	85%	47%	\$1,737	11%
No-fee	1,044	37,895	15%	-65%		
Biomed	1,147	121,262	47%	33%	\$1,717	32%
Fee	790	105,363	87%	24%	\$1,976	7%
No-fee	357	15,899	13%	-56%		
STEM	757	116,186	45%	11%	\$1,366	31%
Fee	437	102,201	88%	28%	\$1,553	3%
No-fee	320	13,985	12%	-61%		
H&SS	546	19,725	8%	-68%	\$707	475%
Fee	179	11,714	59%	170%	\$1,190	113%
No-fee	367	8,011	41%	-48%		

Table 7.2. Key facts, OA publishers

Consider the relative percentages: high on fee, negative by more than 50% across the board for no-fee article percentages, nearly *five times* the overall average for H&SS article costs.

	2018	2017	2016	2015	2014	2013
Journals	2,317	2,359	2,265	2,107	1,918	1,709
%No-fee	41%	42%	41%	39%	38%	37%
Articles	257,173	209,827	199,621	188,076	182,780	155,227
%No-fee	15%	18%	18%	17%	17%	17%

Table 7.3. Articles and journals by year, OA publishers

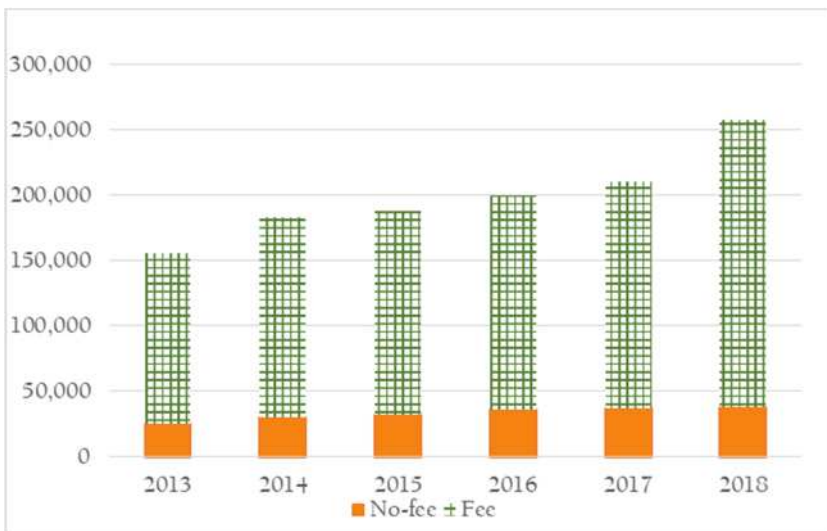


Figure 7.1. Fee and no-fee articles by year, OA publishers

	Journals	Articles	%No-fee	\$/article
Largest: 600+	86	123,646	5%	\$1,876
Large: 150-599	289	66,448	10%	\$1,514
Med.: 60-149	500	35,700	26%	\$878
Small: 20-59	1,067	27,155	50%	\$558
Smallest: 0-19	508	4,224	63%	\$420

Table 7.4. Article volume, OA publishers

The largest journals dominate and charge very high fees.

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	610	43%	25%	169,814	77%	66%
\$600-\$1,399	363	26%	15%	23,709	11%	9%
\$200-\$599	298	21%	12%	20,190	9%	8%
\$0.01-\$199	135	10%	6%	5,565	3%	2%
No fee	1,044		43%	37,895		15%

Table 7.5. Fee level, OA publishers

One-quarter of these journals are expensive—but they publish two-thirds of the articles.



Figure 7.2. Starting date, OA publishers

These publishers didn't do much before 1997—and not a lot with no-fee journals until 2009.

	Articles	Revenue	\$/article
\$1,400+	169,814	\$348,909,053	\$2,055
\$600-\$1.399	23,709	\$23,285,270	\$982
\$200-\$599	20,190	\$8,082,402	\$400
\$0.20-\$199	5,565	\$580,974	\$104
No fee	37,895		
Total	257,173	\$380,857,700	\$1,481

Table 7.6. Revenue, OA publishers

Region	Journals	Articles	%No-fee	\$/article
Western Europe	1,397	183,410	9%	\$1,704
Pacific/English	159	36,771	7%	\$1,603
Asia	256	18,078	54%	\$276
Eastern Europe	480	12,671	51%	\$242
Middle East	96	3,935	71%	\$110
Africa	48	1,823	21%	\$507
Latin America	14	485	42%	\$84

Table 7.7. Region, OA publishers

OA publishers are mostly in Western Europe—especially since Hindawi moved from Egypt to the UK.

Change 2017-18	Count	Percent	Cum%
Grew 50%+	546	22.3%	
Grew 25-49.9%	276	11.3%	33.6%
Grew 10-24.99%	284	11.6%	45.1%
Even, \pm 9.99%	535	21.8%	67.0%
Shrank 10-24.99%	281	11.5%	78.4%
Shrank 25-49.99%	267	10.9%	89.3%
Shrank 50%+	261	10.7%	

Table 7.8. Growth and shrinkage, OA publishers

More growth than shrinkage, especially fast growth.

Subject	Articles	\$/article	Weight
Mathematics	6,063	\$1,271	58.07%
Biology	23,881	\$1,978	53.81%
Chemistry	14,397	\$1,567	44.96%
Physics	15,100	\$1,154	44.23%
Ecology	14,592	\$1,401	35.75%
Earth Sciences	10,012	\$1,012	35.03%
Medicine	97,381	\$1,653	28.40%
Psychology	3,331	\$2,584	11.81%
Other Sciences	23,376	\$1,520	3.89%

Table 7.9. Overweighted subjects, OA publishers

Table 7.9 shows subjects that are more heavily represented in OA-publisher journals than in overall OA, sorted by the overweighting. (The weight is the subject's percentage of all articles for this group of publishers, divided by the percentage for all publishers, minus one: e.g., where mathematics articles are 1.49% of all gold OA for 2018, they're 2.36% of all OA-publisher articles.)

Country	Journals	Articles	%No-fee	\$/article
Switzerland	249	94,774	4%	\$1,803
United Kingdom	851	71,661	4%	\$1,886
United States	98	32,177	4%	\$1,653
India	191	15,014	58%	\$260
Germany	126	12,224	55%	\$368
Poland	334	8,092	57%	\$230
Turkey	71	3,057	77%	\$78
Australia	21	2,489	24%	\$1,032
Canada	37	2,082	24%	\$1,529
China	14	1,895	25%	\$436
South Africa	43	1,709	21%	\$533
Italy	61	1,549	49%	\$260
Bulgaria	24	1,471	6%	\$594
Russia	32	1,283	51%	\$41

Table 7.10. Country of publication, OA publishers, partial

Finally, Table 7.10 shows the countries with more than 1,200 articles in 2018 (out of 58 countries represented in OA-publisher journals).

Universities, Colleges and Institutes

Note that this category does *not* include university-sponsored journals from OA and traditional publishers.

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	7,040	228,792			\$130	-86%
Fee	1,056	57,725	25%	-57%	\$515	-67%
No-fee	5,984	171,067	75%	79%		
Biomed	887	45,946	20%	-43%	\$385	-70%
Fee	199	18,659	41%	-42%	\$947	-49%
No-fee	688	27,287	59%	99%		
STEM	1,646	61,432	27%	-34%	\$154	-85%
Fee	385	20,896	34%	-51%	\$454	-70%
No-fee	1,261	40,536	66%	112%		
H&SS	4,507	121,414	53%	123%	\$21	-83%
Fee	472	18,170	15%	-32%	\$141	-75%
No-fee	4,035	103,244	85%	9%		

Table 7.11. Key facts, university/college publishers

Table 7.11. makes clear what the rest of this profile details: university/college publishers are pretty much the inverse of OA publishers—mostly no-fee (even in biomed), heavy on H&SS, low costs.

	2018	2017	2016	2015	2014	2013
Journals	6,601	6,832	6,650	6,315	5,802	5,250
%No-fee	85%	85%	85%	86%	86%	86%
Articles	228,792	234,411	222,998	209,807	190,915	165,609
%No-fee	75%	76%	77%	76%	77%	78%

Table 7.12. Articles and journals by year, university/college publishers

A small decline in 2018 after years of moderate growth.

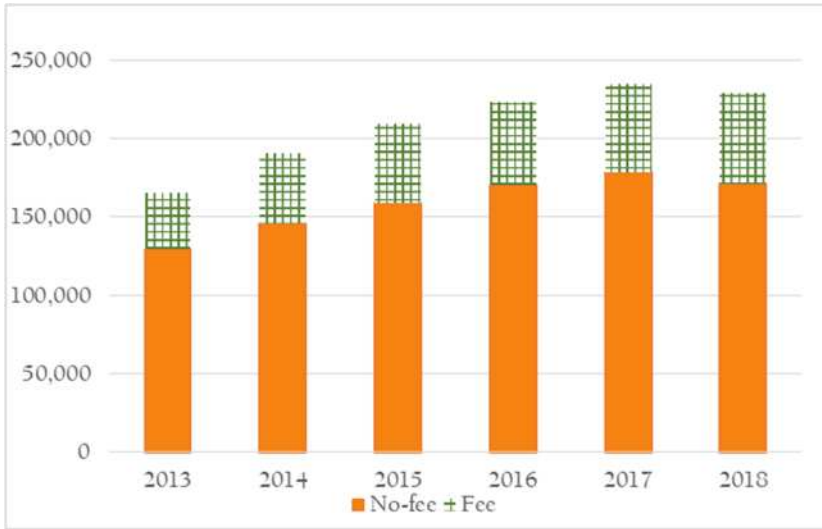


Figure 7.3. Fee and no-fee articles by year, university/college publishers

	Journals	Articles	%No-fee	\$/article
Largest: 600+	14	10,675	25%	\$1,191
Large: 150-599	219	34,005	50%	\$234
Med.: 60-149	1,100	67,100	74%	\$93
Small: 20-59	4,044	100,147	87%	\$26
Smallest: 0-19	1,663	16,865	88%	\$15

Table 7.13. Article volume, university/college publishers

Very few very large journals—and those are the only ones with fees for most articles.

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	43	4%	1%	7,811	14%	3%
\$600-\$1.399	55	5%	1%	4,804	8%	2%
\$200-\$599	187	18%	3%	13,269	23%	6%
\$0.01-\$199	771	73%	11%	31,841	55%	14%
No fee	5,984		85%	171,067		75%

Table 7.14. Fee level, university/college publishers

What few fee journals there are mostly have low fees.

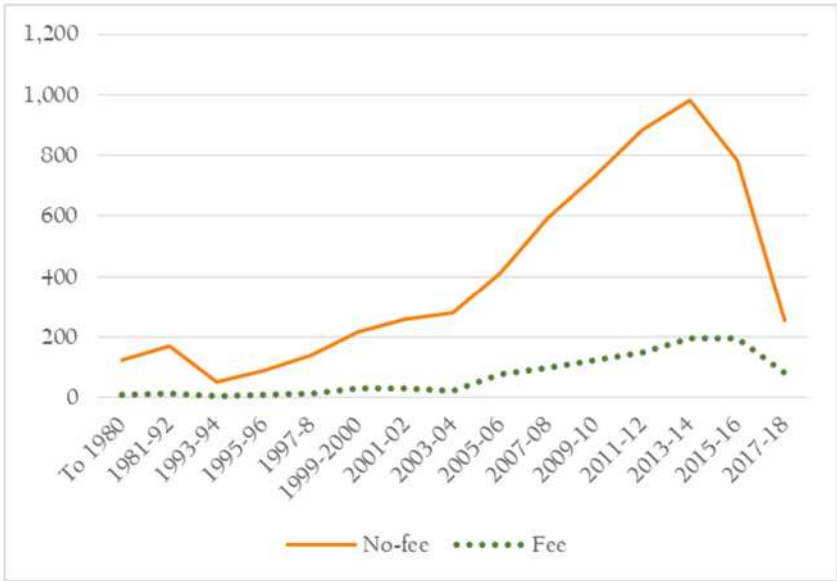


Figure 7.4. Starting date, university/college publishers

After fairly steady growth (noting that 1981-92 can't be compared to 1993-94), faster growth starting in 2001 peaked in 2013-14—but the drop in new journals isn't precipitous.

	Articles	Revenue	\$/article
\$1,400+	7,811	\$18,729,140	\$2,398
\$600-\$1.399	4,804	\$4,482,544	\$933
\$200-\$599	13,269	\$4,483,515	\$338
\$0.20-\$199	31,841	\$2,027,873	\$64
No fee	171,067		
Total	228,792	\$29,723,072	\$130

Table 7.15. Revenue, university/college publishers

Region	Journals	Articles	%No-fee	\$/article
Latin America	1,956	67,061	90%	\$31
Eastern Europe	1,225	47,660	71%	\$44
Western Europe	1,299	41,883	68%	\$453
Asia	1,488	34,974	59%	\$58
Middle East	616	23,409	76%	\$34
Pacific/English	387	10,860	75%	\$322
Africa	69	2,945	66%	\$82

Table 7.16. Region, university/college publishers

Latin America does the most no-fee publishing in general, as evidenced here—and even in Pacific/English countries, most articles are no-fee.

Change 2017-18	Count	Percent	Cum%
Grew 50%+	768	10.9%	
Grew 25-49.9%	636	9.0%	19.9%
Grew 10-24.99%	741	10.5%	30.5%
Even, ±9.99%	2,308	32.8%	63.3%
Shrank 10-24.99%	927	13.2%	76.4%
Shrank 25-49.99%	870	12.4%	88.8%
Shrank 50%+	790	11.2%	

Table 7.17. Growth and shrinkage, university/college publishers

More shrinkage than growth, with a large stable core.

Table 7.18 shows overweighted subjects—which, as you might expect, is pretty much all the subjects that are *not* overweighted among OA publishers: H&SS and some of STEM. Psychology, where journals might really belong in either biomed or H&SS, is uniquely overweighted in both cases. Consider also those cost-per-particle figures—as low as \$4 and never as high as \$200.

Subject	Articles	\$/article	Weight
History	7,411	\$9	168.30%
Law	7,430	\$7	158.81%
Philosophy	4,148	\$12	150.00%
Education	20,117	\$17	139.38%
Anthropology	10,416	\$45	134.19%
Language & Literature	15,210	\$14	134.16%
Media & Communications	4,557	\$4	132.68%
Political Science	5,823	\$13	117.34%
Sociology	12,123	\$29	116.26%
Arts & Architecture	5,968	\$46	113.82%
Religion	3,459	\$23	109.82%
Economics	13,387	\$30	105.25%
Library Science	2,180	\$10	101.64%
Miscellany	5,357	\$8	87.75%
Psychology	3,828	\$28	44.43%
Agriculture	10,752	\$119	28.41%
Computer Science	5,471	\$50	25.55%
Zoology	4,980	\$194	24.07%
Mathematics	3,601	\$16	5.53%
Engineering	10,894	\$104	5.16%

Table 7.18. Overweighted subjects, university/college publishers

Finally, Table 7.19 shows the 33 countries with more than 1,000 university/college articles each (out of a total 111 countries). Brazil has the most articles; Indonesia has the most journals. United Kingdom has the only four-digit cost per article (the only other one in the full list, Jamaica, has a single \$1,000 article), and 18 of the 20 most prolific countries have two-digit or single-digit average costs per article. (Pardon the tight vertical spacing in Table 7.19; the limit for a table with caption is normally 31 rows on a page.)

Country	Journals	Articles	%No-fee	\$/article
Brazil	1,033	42,932	87%	\$38
Indonesia	1,279	25,962	61%	\$28
Iran	379	13,185	80%	\$19
Spain	481	12,385	94%	\$10
Russia	198	11,072	87%	\$13
United Kingdom	142	11,009	18%	\$1,636
Ukraine	161	9,259	48%	\$35
United States	262	8,548	69%	\$409
Turkey	182	8,063	78%	\$37
Romania	244	7,453	70%	\$32
Colombia	302	7,237	99%	\$2
Poland	141	5,593	66%	\$70
Italy	195	5,336	90%	\$20
Germany	80	4,221	52%	\$58
Mexico	109	3,715	83%	\$30
Serbia	112	3,288	81%	\$28
Argentina	158	3,240	95%	\$38
Cuba	59	2,882	97%	\$3
China	18	2,452	35%	\$239
France	101	2,334	100%	\$0
Chile	96	2,263	91%	\$49
Croatia	76	2,191	75%	\$114
Czech Republic	77	2,123	64%	\$124
Malaysia	38	1,731	52%	\$128
Portugal	54	1,589	84%	\$28
Canada	75	1,484	98%	\$2
Costa Rica	51	1,340	100%	\$0
Ecuador	41	1,212	100%	\$0
Pakistan	33	1,186	45%	\$246
Lithuania	41	1,146	60%	\$189
Peru	39	1,084	94%	\$14
Algeria	16	1,072	100%	\$0
Norway	66	1,015	95%	\$37

Table 7.19. Country of publication, university/college publishers, partial

Traditional Publishers

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	1,015	124,341			\$1,437	58%
Fee	672	84,913	68%	17%	\$2,105	34%
No-fee	343	39,428	32%	-24%		
Biomed	586	51,873	42%	17%	\$1,668	29%
Fee	423	39,603	76%	9%	\$2,185	18%
No-fee	163	12,270	24%	-21%		
STEM	286	66,794	54%	32%	\$1,330	28%
Fee	193	42,147	63%	-8%	\$2,108	40%
No-fee	93	24,647	37%	18%		
H&SS	143	5,674	5%	-81%	\$583	374%
Fee	56	3,163	56%	153%	\$1,045	87%
No-fee	87	2,511	44%	-43%		

Table 7.20. Key facts, traditional publishers

Commonalities between OA and traditional publishers aren't surprising. Differences: traditional publishers have even higher average fees for fee articles, there's a higher percentage of no-fee article, and STEM articles outnumber biomed.

	2018	2017	2016	2015	2014	2013
Journals	973	962	892	796	678	522
%No-fee	33%	34%	34%	35%	36%	36%
Articles	124,341	111,369	91,960	68,015	50,267	37,084
%No-fee	32%	26%	27%	26%	31%	31%

Table 7.21. Articles and journals by year, traditional publishers

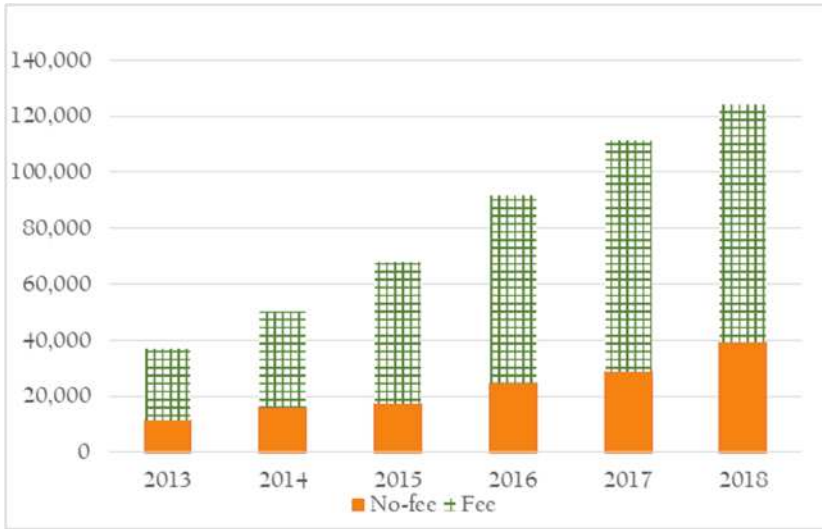


Figure 7.5. Fee and no-fee articles by year, traditional publishers

	Journals	Articles	%No-fee	\$/article
Largest: 600+	23	56,063	34%	\$1,642
Large: 150-599	140	30,649	23%	\$1,517
Med.: 60-149	300	23,878	32%	\$1,112
Small: 20-59	421	12,717	41%	\$990
Smallest: 0-19	131	1,034	32%	\$972

Table 7.22. Article volume, traditional publishers

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	385	57%	38%	62,571	74%	50%
\$600-\$1,399	217	32%	21%	15,577	18%	13%
\$200-\$599	52	8%	5%	5,800	7%	5%
\$0.01-\$199	18	3%	2%	965	1%	1%
No fee	343		34%	39,428		32%

Table 7.23. Fee level, traditional publishers

Most fee articles and half of all articles are in expensive journals.

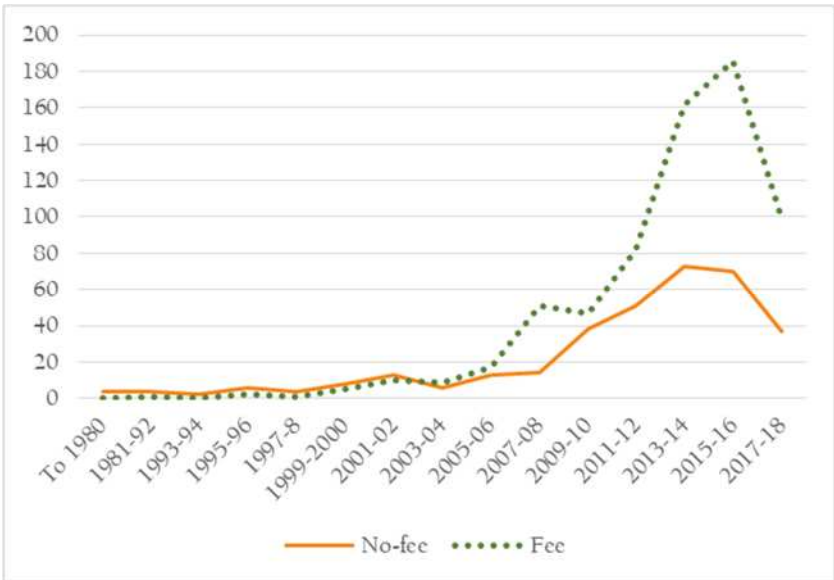


Figure 7.6. Starting date, traditional publishers

The gold rush peaked in 2015-2016.

	Articles	Revenue	\$/article
\$1,400+	62,571	\$160,820,361	\$2,570
\$600-\$1.399	15,577	\$15,171,325	\$974
\$200-\$599	5,800	\$2,620,640	\$452
\$0.20-\$199	965	\$102,697	\$106
No fee	39,428		
Total	124,341	\$178,715,024	\$1,437

Table 7.24. Revenue, traditional publishers

While average cost per article is higher for traditional publishers than for OA publishers at all fee levels (significantly higher for the most expensive journals), overall cost per article is slightly lower simply because traditional publishers have more no-fee articles, both in percentage and actual numbers.

Region	Journals	Articles	%No-fee	\$/article
Western Europe	676	94,983	30%	\$1,600
Pacific/English	148	14,236	4%	\$1,643
Asia	81	6,853	67%	\$344
Middle East	62	5,979	76%	\$93
Eastern Europe	41	1,985	53%	\$186
Latin America	4	222	100%	\$0
Africa	3	83	49%	\$472

Figure 7.25. Region, traditional publisher

What stands out here is the purity of Pacific/English traditional publishers: if it's OA, there's almost always a fairly high fee. Then there's Latin America...

Change 2017-18	Count	Percent	Cum%
Grew 50%+	234	23.1%	
Grew 25-49.9%	115	11.3%	34.4%
Grew 10-24.99%	131	12.9%	47.3%
Even, ±9.99%	237	23.3%	70.6%
Shrank 10-24.99%	114	11.2%	81.9%
Shrank 25-49.99%	94	9.3%	91.1%
Shrank 50%+	90	8.9%	

Table 7.26. Growth and shrinkage, traditional publishers

Significantly more growth than shrinkage

Subject	Articles	\$/article	Weight
Technology	11,375	\$80	154.23%
Other Sciences	26,776	\$2,411	146.12%
Computer Science	3,454	\$1,021	45.84%
Ecology	7,145	\$805	37.48%
Physics	6,326	\$566	24.97%
Medicine	44,516	\$1,486	21.40%

Table 7.27. Overweighted subjects, traditional publishers

Country	Journals	Articles	%No-fee	\$/article
United Kingdom	386	53,072	3%	\$2,258
France	26	18,470	98%	\$28
Netherlands	170	15,882	34%	\$1,372
United States	136	13,592	2%	\$1,682
Egypt	34	2,912	65%	\$179
China	39	2,863	78%	\$159
Spain	31	2,550	82%	\$150
Switzerland	21	2,447	7%	\$2,073
Saudi Arabia	12	1,817	100%	\$0
Germany	18	1,415	15%	\$2,804
South Korea	10	1,103	61%	\$178
Taiwan	9	1,101	92%	\$34
Poland	20	1,088	62%	\$186

Table 7.28. Country of publication, traditional publishers (partial)

13 of 27 countries, ones with 1,000 or more 2018 articles.

Society and Government Journals

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	1,152	74,558			\$713	-22%
Fee	245	41,666	56%	-4%	\$1,275	-19%
No-fee	907	32,892	44%	5%		
Biomed	315	21,199	28%	-20%	\$474	-63%
Fee	76	9,284	44%	-38%	\$1,081	-42%
No-fee	239	11,915	56%	88%		
STEM	373	40,299	54%	33%	\$1,061	2%
Fee	139	31,340	78%	13%	\$1,365	-10%
No-fee	234	8,959	22%	-29%		
H&SS	464	13,060	18%	-26%	\$25	-80%
Fee	30	1,042	8%	-64%	\$314	-44%
No-fee	434	12,018	92%	18%		

Table 7.29. Key facts, society/government

Strong in STEM, and unusual in that biomed is mostly no-fee.

	2018	2017	2016	2015	2014	2013
Journals	1,088	1,116	1,093	1,044	980	889
%No-fee	78%	78%	79%	79%	79%	80%
Articles	74,558	70,514	58,578	55,661	50,522	45,262
%No-fee	44%	47%	55%	56%	55%	55%

Table 7.30. Articles and journals by year, society/government

After a sharp increase in articles in 2017—accompanied by a significant drop in no-fee article (but not journal) percentage—2018 sees a modest rise in articles and smaller drop in no-fee percentage.

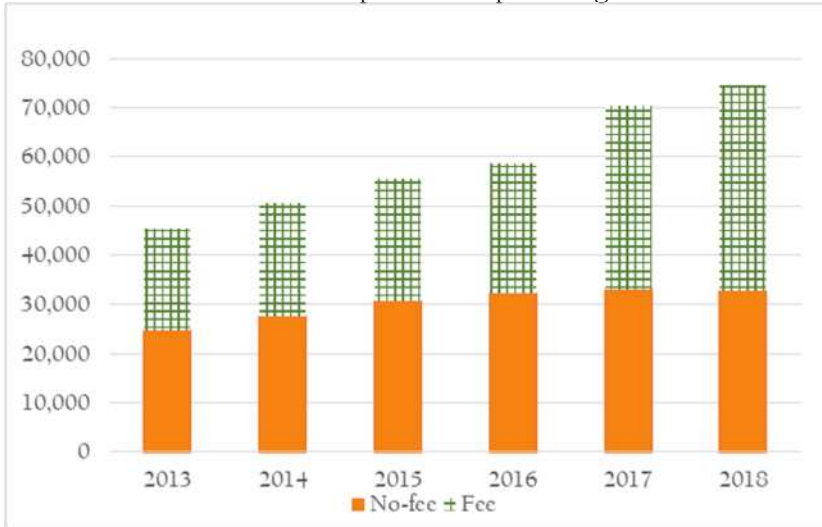


Figure 7.7. Fee and no-fee articles by year, society/government

	Journals	Articles	%No-fee	\$/article
Largest: 600+	13	23,814	5%	\$1,463
Large: 150-599	86	15,949	33%	\$867
Med.: 60-149	261	17,783	66%	\$196
Small: 20-59	582	15,156	85%	\$64
Smallest: 0-19	210	1,856	91%	\$20

Table 7.31. Article volume, society/government

The usual declining cost/size slope and increase of no-fee percentage with smaller journals, perhaps more pronounced here.

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	38	16%	3%	17,338	42%	23%
\$600-\$1,399	30	12%	3%	11,449	27%	15%
\$200-\$599	71	29%	6%	6,635	16%	9%
\$0.01-\$199	106	43%	9%	6,244	15%	8%
No fee	907		79%	32,892		44%

Table 7.32. Fee level, society/government

While expensive journals have more articles than any other fee level, they're considerably outnumbered by no-fee journals, even though such journals have far fewer articles, averaging 36 per no-fee journal as compared to 456 for expensive journals.



Figure 7.8. Starting date, society/government

Significant since the early years—and with a long high-growth period with no real two-year peak.

	Articles	Revenue	\$/article
\$1,400+	17,338	\$38,486,704	\$2,220
\$600-\$1.399	11,449	\$11,561,273	\$1,010
\$200-\$599	6,635	\$2,423,416	\$365
\$0.20-\$199	6,244	\$668,448	\$107
No fee	32,892		
Total	74,558	\$53,139,842	\$713

Table 7.33. Revenue, society/government

Fairly typical pattern.

Region	Journals	Articles	%No-fee	\$/article
Pacific/English	162	24,822	17%	\$1,623
Western Europe	285	16,642	47%	\$529
Latin America	260	14,632	71%	\$112
Asia	181	7,767	51%	\$188
Eastern Europe	172	6,343	71%	\$63
Middle East	70	2,866	56%	\$104
Africa	22	1,486	30%	\$162

Table 7.34. Region, university/government

Pacific/English has the lowest percentage of no-fee articles and *by far* the highest cost per article.

Change 2017-18	Count	Percent	Cum%
Grew 50%+	158	13.7%	
Grew 25-49.9%	127	11.0%	24.7%
Grew 10-24.99%	116	10.1%	34.8%
Even, ±9.99%	345	29.9%	64.8%
Shrank 10-24.99%	149	12.9%	77.7%
Shrank 25-49.99%	131	11.4%	89.1%
Shrank 50%+	126	10.9%	

Table 7.35. Growth and shrinkage, society/government

Subject	Articles	\$/article	Weight
Chemistry	10,232	\$648	255.36%
Engineering	7,783	\$1,561	130.54%
Library Science	757	\$0	114.86%
Physics	6,167	\$2,088	103.18%
Zoology	2,097	\$197	60.32%
Media & Communications	762	\$12	19.39%
Agriculture	3,137	\$328	14.96%

Table 7.36. Overweighted subjects, society/government

Table 7.36 primarily shows which fields have strong society publishing efforts (and, to a much lesser degree, government journals).

Country	Journals	Articles	%No-fee	\$/article
United States	123	23,505	14%	\$1,705
Brazil	175	11,966	66%	\$135
United Kingdom	36	9,281	19%	\$826
South Korea	51	2,915	60%	\$176
Spain	84	2,238	89%	\$79
Iran	28	1,377	42%	\$171
Poland	21	1,260	55%	\$87
Turkey	34	1,183	86%	\$4
Serbia	36	1,179	68%	\$52
Canada	28	1,111	74%	\$204

Table 7.37. Country of publication, society/government (partial)

The eleven countries in Table 7.37 each had more than 1,000 OA articles from society and government sources in 2018—out of 81 total.

Miscellaneous

There's not a lot to say about this "group," which is notable only because they're mostly single-journal publishers where the affiliation wasn't obvious (e.g., cases where the journal title is the publisher), but the (partial) profile may still be interesting.

72 Gold Open Access 2013-2018: articles in journals (GOA4)

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	523	26,806			\$260	-71%
Fee	127	10,244	38%	-34%	\$681	-57%
No-fee	396	16,562	62%	48%		
Biomed	127	12,562	47%	32%	\$422	-67%
Fee	31	4,378	35%	-50%	\$1,210	-35%
No-fee	96	8,184	65%	118%		
STEM	119	4,811	18%	-56%	\$207	-80%
Fee	49	2,648	55%	-20%	\$375	-75%
No-fee	70	2,163	45%	44%		
H&SS	277	9,433	35%	48%	\$73	-41%
Fee	47	3,218	34%	55%	\$214	-62%
No-fee	230	6,215	66%	-15%		

Table 7.38. Key facts, miscellaneous journals

Mostly H&SS journals and low-cost in all segments.

	2018	2017	2016	2015	2014	2013
Journals	486	500	483	434	393	333
%No-fee	77%	76%	75%	76%	77%	77%
Articles	26,806	25,263	22,550	20,141	15,793	13,269
%No-fee	62%	59%	61%	60%	64%	67%

Table 7.39. Articles and journals by year, miscellaneous

Erratic, currently slow growth for this set of oddities.

	Journals	Articles	%No-fee	\$/article
Largest: 600+	7	7,548	59%	\$437
Large: 150-599	29	5,635	35%	\$444
Med.: 60-149	104	5,915	63%	\$141
Small: 20-59	265	6,724	82%	\$48
Smallest: 0-19	118	984	89%	\$19

Table 7.40. Article volume, miscellaneous

Even the few largest journals are relatively low-fee (and mostly no-fee).

	Articles	Revenue	\$/article
\$1,400+	1,987	\$4,436,937	\$2,233
\$600-\$1.399	1,139	\$1,103,471	\$969
\$200-\$599	2,704	\$1,011,892	\$374
\$0.20-\$199	4,414	\$427,146	\$97
No fee	16,562		
Total	26,806	\$6,979,447	\$260

Table 7.41. Revenue, miscellaneous

8. Country of Publication

The set of journals covered in this report comes from 119 different countries. A table of those countries takes up four or five pages, and one table doesn't provide much information.

This book includes a chapter for each region; the regions (and one "region") appear in Table 8.1, sorted by number of articles.

Region	Journals	Articles	%No-fee	\$/article
Western Europe	3,822	342,951	24%	\$1,449
Pacific/English	917	92,102	22%	\$1,371
Latin America	2,291	84,491	86%	\$45
Eastern Europe	2,032	75,051	66%	\$93
Asia	2,063	71,078	57%	\$161
Middle East	897	38,880	71%	\$59
Africa	158	7,117	40%	\$224

Table 8.1. Region, overall

This chapter includes three multipage tables, each consisting of the 119 countries and the same information, but in three different orders: alphabetically, by number of 2018 articles, and by cost per article (from lowest to highest). The latter table exclude Palestine, with one journal but no recent articles. *Gold Open Access by Country 2013-2018* will offer more detail on each country's serious gold OA publishing.

Last year's study included journals from 110 countries. New this year are Angola, Armenia, Kuwait, Madagascar, Mali, South Sudan and Zimbabwe—and Azerbaijan and Viet Nam (both in GOAJ2 but not GOAJ3) have reappeared.

Alphabetic List of Countries

Country	Journals	Articles	%No-fee	\$/article
Albania	4	94	65%	\$51
Algeria	19	1,093	100%	\$0
Angola	1	18	100%	\$0
Argentina	201	4,295	93%	\$31
Armenia	2	35	100%	\$0
Australia	92	4,236	46%	\$735
Austria	49	1,051	56%	\$241
Azerbaijan	6	132	10%	\$45
Bahamas	1	7	100%	\$0
Bangladesh	19	669	68%	\$30
Barbados	1	43	100%	\$0
Belarus	9	573	83%	\$25
Belgium	35	594	85%	\$87
Bolivia	5	71	100%	\$0
Bosnia and Herzegovina	20	475	77%	\$97
Brazil	1,244	56,512	82%	\$59
Bulgaria	52	2,361	29%	\$398
Cameroon	1	61	0%	\$171
Canada	149	4,925	62%	\$693
Chile	107	2,594	89%	\$62
China	87	8,589	45%	\$278
Colombia	318	7,936	98%	\$2
Costa Rica	53	1,367	100%	\$0
Croatia	109	3,132	77%	\$105
Cuba	79	3,682	97%	\$2
Cyprus	5	181	41%	\$220
Czech Republic	97	2,569	63%	\$129
Dem. Rep. Congo	1	50	100%	\$0
Denmark	24	347	91%	\$26
Ecuador	43	1,437	100%	\$0
Egypt	51	3,338	58%	\$205

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Country	Journals	Articles	%No-fee	\$/article
El Salvador	3	49	100%	\$0
Estonia	18	392	76%	\$133
Ethiopia	4	99	100%	\$0
Finland	24	746	78%	\$194
France	206	22,697	98%	\$24
Georgia	3	166	100%	\$0
Germany	256	18,887	53%	\$468
Ghana	5	67	51%	\$49
Greece	32	1,606	66%	\$125
Guam	1	8	0%	\$350
Guatemala	3	43	44%	\$27
Hong Kong	20	1,086	60%	\$436
Hungary	33	1,032	80%	\$174
Iceland	6	291	100%	\$0
India	254	18,624	56%	\$257
Indonesia	1,340	27,425	60%	\$29
Iran	432	15,820	74%	\$42
Iraq	23	864	26%	\$83
Ireland	16	501	46%	\$907
Israel	2	57	100%	\$0
Italy	334	9,628	78%	\$158
Jamaica	1	13	0%	\$1,000
Japan	26	1,020	30%	\$984
Jordan	5	233	64%	\$49
Kazakhstan	2	95	85%	\$1
Kenya	5	260	14%	\$225
Kuwait	1	52	100%	\$0
Kyrgyzstan	3	51	100%	\$0
Latvia	11	510	39%	\$595
Lebanon	1	16	100%	\$0
Libya	2	125	46%	\$54
Lithuania	55	1,841	48%	\$263

Country	Journals	Articles	%No-fee	\$/article
Luxembourg	3	38	100%	\$0
Macedonia	8	553	14%	\$283
Malaysia	62	2,192	54%	\$119
Mali	1	23	0%	\$34
Malta	2	29	100%	\$0
Mauritius	2	120	10%	\$270
Mexico	120	4,049	82%	\$30
Moldova	28	1,033	60%	\$6
Mongolia	4	118	64%	\$27
Montenegro	8	410	76%	\$26
Morocco	13	299	84%	\$29
Nepal	15	452	100%	\$0
Netherlands	213	17,093	37%	\$1,284
New Zealand	13	202	100%	\$0
Nicaragua	6	77	100%	\$0
Nigeria	8	613	18%	\$175
Norway	89	1,437	91%	\$92
Oman	7	302	100%	\$0
Pakistan	49	2,097	38%	\$178
Palestine	1	0		
Paraguay	8	184	100%	\$0
Peru	46	1,225	95%	\$13
Philippines	9	197	68%	\$22
Poland	526	16,251	60%	\$158
Portugal	87	2,870	72%	\$140
Puerto Rico	4	30	100%	\$0
Qatar	4	38	97%	\$26
Romania	317	9,208	68%	\$37
Russia	290	16,422	85%	\$17
Saudi Arabia	18	2,208	94%	\$18
Serbia	155	4,635	76%	\$35
Singapore	13	336	79%	\$301

Country	Journals	Articles	%No-fee	\$/article
Slovakia	43	1,021	72%	\$49
Slovenia	51	1,365	85%	\$69
South Africa	87	3,295	30%	\$367
South Korea	88	5,199	60%	\$194
South Sudan	1	22	100%	\$0
Spain	674	19,194	90%	\$68
Sri Lanka	13	301	98%	\$2
Sweden	38	1,204	55%	\$784
Switzerland	290	97,620	5%	\$1,803
Taiwan	33	1,700	77%	\$83
Thailand	27	974	58%	\$81
Tunisia	6	165	45%	\$80
Turkey	332	15,183	73%	\$46
Turkmenistan	1	10	100%	\$0
Uganda	1	786	0%	\$180
Ukraine	185	10,687	46%	\$53
United Arab Emirates	15	659	9%	\$210
United Kingdom	1,438	146,986	6%	\$1,934
United States	663	82,739	19%	\$1,447
Uruguay	18	361	100%	\$0
Venezuela	29	508	67%	\$68
Viet Nam	1	48	100%	\$0
Yemen	5	110	80%	\$30
Zimbabwe	1	21	100%	\$0

Table 8.2. Country of publication, alphabetic, overall

Country of publication by number of articles

Country	Journals	Articles	%No-fee	\$/article
United Kingdom	1,438	146,986	6%	\$1,934
Switzerland	290	97,620	5%	\$1,803
United States	663	82,739	19%	\$1,447
Brazil	1,244	56,512	82%	\$59
Indonesia	1,340	27,425	60%	\$29
France	206	22,697	98%	\$24
Spain	674	19,194	90%	\$68
Germany	256	18,887	53%	\$468
India	254	18,624	56%	\$257
Netherlands	213	17,093	37%	\$1,284
Russia	290	16,422	85%	\$17
Poland	526	16,251	60%	\$158
Iran	432	15,820	74%	\$42
Turkey	332	15,183	73%	\$46
Ukraine	185	10,687	46%	\$53
Italy	334	9,628	78%	\$158
Romania	317	9,208	68%	\$37
China	87	8,589	45%	\$278
Colombia	318	7,936	98%	\$2
South Korea	88	5,199	60%	\$194
Canada	149	4,925	62%	\$693
Serbia	155	4,635	76%	\$35
Argentina	201	4,295	93%	\$31
Australia	92	4,236	46%	\$735
Mexico	120	4,049	82%	\$30
Cuba	79	3,682	97%	\$2
Egypt	51	3,338	58%	\$205
South Africa	87	3,295	30%	\$367
Croatia	109	3,132	77%	\$105
Portugal	87	2,870	72%	\$140
Chile	107	2,594	89%	\$62

Country	Journals	Articles	%No-fee	\$/article
Czech Republic	97	2,569	63%	\$129
Bulgaria	52	2,361	29%	\$398
Saudi Arabia	18	2,208	94%	\$18
Malaysia	62	2,192	54%	\$119
Pakistan	49	2,097	38%	\$178
Lithuania	55	1,841	48%	\$263
Taiwan	33	1,700	77%	\$83
Greece	32	1,606	66%	\$125
Ecuador	43	1,437	100%	\$0
Norway	89	1,437	91%	\$92
Costa Rica	53	1,367	100%	\$0
Slovenia	51	1,365	85%	\$69
Peru	46	1,225	95%	\$13
Sweden	38	1,204	55%	\$784
Algeria	19	1,093	100%	\$0
Hong Kong	20	1,086	60%	\$436
Austria	49	1,051	56%	\$241
Moldova	28	1,033	60%	\$6
Hungary	33	1,032	80%	\$174
Slovakia	43	1,021	72%	\$49
Japan	26	1,020	30%	\$984
Thailand	27	974	58%	\$81
Iraq	23	864	26%	\$83
Uganda	1	786	0%	\$180
Finland	24	746	78%	\$194
Bangladesh	19	669	68%	\$30
United Arab Emirates	15	659	9%	\$210
Nigeria	8	613	18%	\$175
Belgium	35	594	85%	\$87
Belarus	9	573	83%	\$25
Macedonia	8	553	14%	\$283
Latvia	11	510	39%	\$595

Country	Journals	Articles	%No-fee	\$/article
Venezuela	29	508	67%	\$68
Ireland	16	501	46%	\$907
Bosnia and Herzegovina	20	475	77%	\$97
Nepal	15	452	100%	\$0
Montenegro	8	410	76%	\$26
Estonia	18	392	76%	\$133
Uruguay	18	361	100%	\$0
Denmark	24	347	91%	\$26
Singapore	13	336	79%	\$301
Oman	7	302	100%	\$0
Sri Lanka	13	301	98%	\$2
Morocco	13	299	84%	\$29
Iceland	6	291	100%	\$0
Kenya	5	260	14%	\$225
Jordan	5	233	64%	\$49
New Zealand	13	202	100%	\$0
Philippines	9	197	68%	\$22
Paraguay	8	184	100%	\$0
Cyprus	5	181	41%	\$220
Georgia	3	166	100%	\$0
Tunisia	6	165	45%	\$80
Azerbaijan	6	132	10%	\$45
Libya	2	125	46%	\$54
Mauritius	2	120	10%	\$270
Mongolia	4	118	64%	\$27
Yemen	5	110	80%	\$30
Ethiopia	4	99	100%	\$0
Kazakhstan	2	95	85%	\$1
Albania	4	94	65%	\$51
Nicaragua	6	77	100%	\$0
Bolivia	5	71	100%	\$0
Ghana	5	67	51%	\$49

Country	Journals	Articles	%No-fee	\$/article
Cameroon	1	61	0%	\$171
Israel	2	57	100%	\$0
Kuwait	1	52	100%	\$0
Kyrgyzstan	3	51	100%	\$0
Dem. Rep. Congo	1	50	100%	\$0
El Salvador	3	49	100%	\$0
Viet Nam	1	48	100%	\$0
Barbados	1	43	100%	\$0
Guatemala	3	43	44%	\$27
Luxembourg	3	38	100%	\$0
Qatar	4	38	97%	\$26
Armenia	2	35	100%	\$0
Puerto Rico	4	30	100%	\$0
Malta	2	29	100%	\$0
Mali	1	23	0%	\$34
South Sudan	1	22	100%	\$0
Zimbabwe	1	21	100%	\$0
Angola	1	18	100%	\$0
Lebanon	1	16	100%	\$0
Jamaica	1	13	0%	\$1,000
Turkmenistan	1	10	100%	\$0
Guam	1	8	0%	\$350
Bahamas	1	7	100%	\$0

Table 8.3. Country of publication, overall, by article count

Country of publication by average cost per article

Country	Journals	Articles	%No-fee	\$/article
Ecuador	43	1,437	100%	\$0
Costa Rica	53	1,367	100%	\$0
Algeria	19	1,093	100%	\$0
Nepal	15	452	100%	\$0
Uruguay	18	361	100%	\$0
Oman	7	302	100%	\$0
Iceland	6	291	100%	\$0
New Zealand	13	202	100%	\$0
Paraguay	8	184	100%	\$0
Georgia	3	166	100%	\$0
Ethiopia	4	99	100%	\$0
Nicaragua	6	77	100%	\$0
Bolivia	5	71	100%	\$0
Israel	2	57	100%	\$0
Kuwait	1	52	100%	\$0
Kyrgyzstan	3	51	100%	\$0
Dem. Rep. Congo	1	50	100%	\$0
El Salvador	3	49	100%	\$0
Viet Nam	1	48	100%	\$0
Barbados	1	43	100%	\$0
Luxembourg	3	38	100%	\$0
Armenia	2	35	100%	\$0
Puerto Rico	4	30	100%	\$0
Malta	2	29	100%	\$0
South Sudan	1	22	100%	\$0
Zimbabwe	1	21	100%	\$0
Angola	1	18	100%	\$0
Lebanon	1	16	100%	\$0
Turkmenistan	1	10	100%	\$0
Bahamas	1	7	100%	\$0
Kazakhstan	2	95	85%	\$1

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Country	Journals	Articles	%No-fee	\$/article
Cuba	79	3,682	97%	\$2
Sri Lanka	13	301	98%	\$2
Colombia	318	7,936	98%	\$2
Moldova	28	1,033	60%	\$6
Peru	46	1,225	95%	\$13
Russia	290	16,422	85%	\$17
Saudi Arabia	18	2,208	94%	\$18
Philippines	9	197	68%	\$22
France	206	22,697	98%	\$24
Belarus	9	573	83%	\$25
Denmark	24	347	91%	\$26
Qatar	4	38	97%	\$26
Montenegro	8	410	76%	\$26
Guatemala	3	43	44%	\$27
Mongolia	4	118	64%	\$27
Morocco	13	299	84%	\$29
Indonesia	1,340	27,425	60%	\$29
Yemen	5	110	80%	\$30
Mexico	120	4,049	82%	\$30
Bangladesh	19	669	68%	\$30
Argentina	201	4,295	93%	\$31
Mali	1	23	0%	\$34
Serbia	155	4,635	76%	\$35
Romania	317	9,208	68%	\$37
Iran	432	15,820	74%	\$42
Azerbaijan	6	132	10%	\$45
Turkey	332	15,183	73%	\$46
Jordan	5	233	64%	\$49
Slovakia	43	1,021	72%	\$49
Ghana	5	67	51%	\$49
Albania	4	94	65%	\$51
Ukraine	185	10,687	46%	\$53

Country	Journals	Articles	%No-fee	\$/article
Libya	2	125	46%	\$54
Brazil	1,244	56,512	82%	\$59
Chile	107	2,594	89%	\$62
Venezuela	29	508	67%	\$68
Spain	674	19,194	90%	\$68
Slovenia	51	1,365	85%	\$69
Tunisia	6	165	45%	\$80
Thailand	27	974	58%	\$81
Taiwan	33	1,700	77%	\$83
Iraq	23	864	26%	\$83
Belgium	35	594	85%	\$87
Norway	89	1,437	91%	\$92
Bosnia and Herzegovina	20	475	77%	\$97
Croatia	109	3,132	77%	\$105
Malaysia	62	2,192	54%	\$119
Greece	32	1,606	66%	\$125
Czech Republic	97	2,569	63%	\$129
Estonia	18	392	76%	\$133
Portugal	87	2,870	72%	\$140
Poland	526	16,251	60%	\$158
Italy	334	9,628	78%	\$158
Cameroon	1	61	0%	\$171
Hungary	33	1,032	80%	\$174
Nigeria	8	613	18%	\$175
Pakistan	49	2,097	38%	\$178
Uganda	1	786	0%	\$180
Finland	24	746	78%	\$194
South Korea	88	5,199	60%	\$194
Egypt	51	3,338	58%	\$205
United Arab Emirates	15	659	9%	\$210
Cyprus	5	181	41%	\$220
Kenya	5	260	14%	\$225

Country	Journals	Articles	%No-fee	\$/article
Austria	49	1,051	56%	\$241
India	254	18,624	56%	\$257
Lithuania	55	1,841	48%	\$263
Mauritius	2	120	10%	\$270
China	87	8,589	45%	\$278
Macedonia	8	553	14%	\$283
Singapore	13	336	79%	\$301
Guam	1	8	0%	\$350
South Africa	87	3,295	30%	\$367
Bulgaria	52	2,361	29%	\$398
Hong Kong	20	1,086	60%	\$436
Germany	256	18,887	53%	\$468
Latvia	11	510	39%	\$595
Canada	149	4,925	62%	\$693
Australia	92	4,236	46%	\$735
Sweden	38	1,204	55%	\$784
Ireland	16	501	46%	\$907
Japan	26	1,020	30%	\$984
Jamaica	1	13	0%	\$1,000
Netherlands	213	17,093	37%	\$1,284
United States	663	82,739	19%	\$1,447
Switzerland	290	97,620	5%	\$1,803
United Kingdom	1,438	146,986	6%	\$1,934

Table 8.4. Country of publication, overall by cost per article

Countries arranged by number of articles (decreasing) in cases of identical cost, such as the 30 countries with no fee-based OA journals.

9. Biology and Medicine

Biomed—subjects related to human biology and the many subjects related to human medicine, including pharmacy, alternative medical practices and some aspects of nutrition—is where the money is. It has the highest cost per article and most revenue, even though STEM has more articles. It's also the only segment where there are almost as many fee journals as no-fee journals.

	Jrn.	Art.	Art%	\$/Art
Biomed	3,062	252,842		\$1,296
Fee	1,519	177,287	70%	\$1,849
No-fee	1,543	75,555	30%	

Table 9.1. Key facts, biomed

Articles and Journals

	2018	2017	2016	2015	2014	2013
Journals	2,934	2,962	2,859	2,676	2,443	2,161
%No-fee	49%	50%	50%	50%	50%	50%
Articles	252,842	226,569	210,109	199,183	182,645	147,869
%No-fee	30%	32%	34%	34%	34%	36%

Table 9.2. Articles and journals by year, biomed

More growth than in three previous years, and a slight decline in the already-low no-fee percentage.

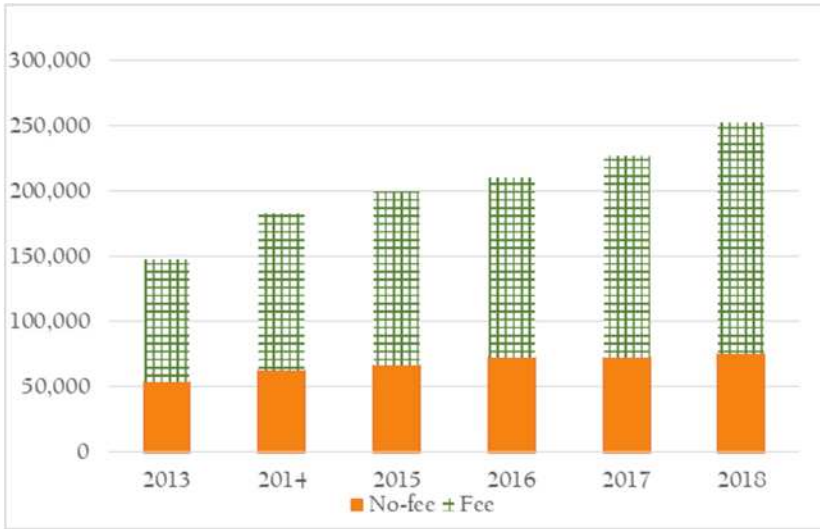


Figure 9.1. Fee and no-fee articles by year, biomed

Article Volume

	Journals	Articles	%No-fee	\$/article
Largest: 600+	66	66,500	9%	\$2,083
Large: 150-599	417	86,374	22%	\$1,431
Med.: 60-149	820	59,295	46%	\$732
Small: 20-59	1,347	37,139	59%	\$546
Smallest: 0-19	412	3,534	57%	\$556

Table 9.3. Article volume, biomed

Large journals published more articles than the largest; the smallest journals are *very* small, with an average of fewer than nine articles per journal. Only small and smallest journals are mostly no-fee.

Fee Level

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	801	53%	26%	125,047	71%	49%
\$600-\$1.399	291	19%	10%	20,607	12%	8%
\$200-\$599	220	14%	7%	18,757	11%	7%
\$0.01-\$199	207	14%	7%	12,876	7%	5%
No fee	1,543		50%	75,555		30%

Table 9.4. Fee level, biomed

More than half of all fee articles are in the most expensive journals.

Starting Date



Figure 9.2. Starting date, biomed

Revenue

	Articles	Revenue	\$/article
\$1,400+	125,047	\$299,126,249	\$2,392
\$600-\$1.399	20,607	\$20,303,797	\$985
\$200-\$599	18,757	\$7,214,692	\$385
\$0.20-\$199	12,876	\$1,114,670	\$87
No fee	75,555		
Total	252,842	\$327,759,409	\$1,296

Table 9.5. Revenue, biomed

More than 90% of all revenue comes from the most expensive journals, with 53% of the fee articles—and the average cost is very high.

Region

Region	Journals	Articles	%No-fee	\$/article
Western Europe	1,238	130,570	9%	\$1,983
Pacific/English	294	35,575	20%	\$1,574
Asia	512	32,477	55%	\$238
Latin America	305	18,125	78%	\$117
Middle East	349	17,003	80%	\$41
Eastern Europe	327	16,666	62%	\$99
Africa	37	2,426	21%	\$251

Table 9.6. Region, biomed

“Mostly fee” is always tricky: for Asia, Africa, Latin America, Middle East and Eastern Europe, most articles are in no-fee journals—but in Western Europe, fewer than one in ten are.

Publisher Category

Category	Journals	Articles	%No-fee	\$/article
Open Access	1,147	121,262	13%	\$1,717
Traditional	586	51,873	24%	\$1,668
Univ/college	887	45,946	59%	\$385
Society/govt	315	21,199	56%	\$474
Miscellaneous	127	12,562	65%	\$422

Table 9.7. Publisher category, biomed

OA and traditional publishers have very similar average cost per article, but OA publishers have by far the largest chunk of biomed articles. Note here also that no-fee articles are in the majority for other categories.

Growth and Shrinkage

Change 2017-18	Count	Percent	Cum%
Grew 50%+	491	16.0%	
Grew 25-49.9%	326	10.6%	26.7%
Grew 10-24.99%	387	12.6%	39.3%
Even, \pm 9.99%	859	28.1%	67.4%
Shrank 10-24.99%	403	13.2%	80.5%
Shrank 25-49.99%	315	10.3%	90.8%
Shrank 50%+	281	9.2%	

Table 9.8. Growth and shrinkage, biomed

Significantly more growth than shrinkage.

Subject

Subject	Jour.	Art.	%No-fee	\$/article
Biology	397	42,965	12%	\$1,851
Medicine	2,665	209,877	34%	\$1,183

Table 9.9. Subject, biomed

Table 9.9 is interesting, as fees are much more dominant in biology than in medicine—and at a considerably higher average cost per article.

Country of Publication

Country	Journals	Articles	%No-fee	\$/article
United Kingdom	826	79,651	3%	\$2,050
Switzerland	113	31,674	4%	\$2,299
United States	238	31,282	20%	\$1,603
India	205	16,637	55%	\$283
Brazil	172	12,818	71%	\$146
Iran	226	9,932	73%	\$57
Netherlands	89	9,291	19%	\$1,938
Russia	76	4,682	95%	\$6
Indonesia	148	3,864	56%	\$43
Poland	98	3,792	51%	\$244
Turkey	77	3,756	96%	\$1
China	31	3,734	37%	\$300
Ukraine	40	3,593	37%	\$20
Spain	58	3,463	89%	\$87
South Korea	48	3,142	71%	\$135
Australia	27	2,424	21%	\$1,229
Italy	54	1,860	35%	\$669
Canada	28	1,838	26%	\$1,549
Cuba	29	1,609	100%	\$0
Egypt	23	1,472	89%	\$11
Germany	35	1,455	46%	\$1,100
Colombia	40	1,441	97%	\$3
Saudi Arabia	9	1,281	89%	\$31
Pakistan	15	1,202	15%	\$267
Taiwan	9	1,118	92%	\$33
Romania	28	1,113	54%	\$72

Table 9.10. Country of publication, biomed (countries with more than 1,000 articles)

Biology: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	397	42,965			\$1,851	103%
Fee	259	37,951	88%	52%	\$2,095	34%
No-fee	138	5,014	12%	-72%		
Biomed	397	42,965			\$1,851	43%
Fee	259	37,951	88%	26%	\$2,095	13%
No-fee	138	5,014	12%	-61%		

Table 9.11. Key facts, biology

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	145	56%	37%	29,487	78%	69%
\$600-\$1,399	40	15%	10%	4,320	11%	10%
\$200-\$599	35	14%	9%	1,616	4%	4%
\$0.01-\$199	39	15%	10%	2,528	7%	6%
No fee	138		35%	5,014		12%

Table 9.12. Fee level, biology

Region	Journals	Articles	%No-fee	\$/article
Western Europe	184	27,418	4%	\$2,298
Pacific/English	44	7,568	3%	\$1,999
Eastern Europe	62	3,347	42%	\$90
Latin America	28	1,738	48%	\$383
Asia	51	1,685	38%	\$216
Middle East	24	1,039	88%	\$14
Africa	4	170	18%	\$135

Table 9.13. Region, biology

Biology includes all aspects of human biology and biochemistry. Areas such as marine biology are included in zoology (STEM).

Medicine: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	2,665	209,877			\$1,183	30%
Fee	1,260	139,336	66%	14%	\$1,782	14%
No-fee	1,405	70,541	34%	-20%		
Biomed	2,665	209,877			\$1,183	-9%
Fee	1,260	139,336	66%	-5%	\$1,782	-4%
No-fee	1,405	70,541	34%	12%		

Table 9.14. Key facts, medicine

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	656	52%	25%	95,560	69%	46%
\$600-\$1.399	251	20%	9%	16,287	12%	8%
\$200-\$599	185	15%	7%	17,141	12%	8%
\$0.01-\$199	168	13%	6%	10,348	7%	5%
No fee	1,405		53%	70,541		34%

Table 9.15. Fee level, medicine

Region	Journals	Articles	%No-fee	\$/article
Western Europe	1,054	103,152	11%	\$1,900
Asia	461	30,792	56%	\$239
Pacific/English	250	28,007	25%	\$1,459
Latin America	277	16,387	81%	\$89
Middle East	325	15,964	80%	\$43
Eastern Europe	265	13,319	68%	\$101
Africa	33	2,256	21%	\$259

Table 9.16. Region, medicine

Includes all aspects of human health (except that some exercise and sports-related journals are in anthropology, HSS), including alternative medical systems and portions of nutrition. Veterinary medicine is included in zoology (STEM).

10. Science, Technology, Engineering and Math

STEM—in this case, excluding human biology and medicine, as well as social sciences—includes slightly more gold OA journals than biomed, somewhat more articles, but somewhat less revenue. This chapter includes the megajournals (in “Other Sciences”).

	Jrn.	Art.	Art%	\$/Art
STEM	3,181	289,522		\$1,039
Fee	1,203	199,232	69%	\$1,510
No-fee	1,978	90,290	31%	

Table 10.1. Key facts, STEM

Articles and Journals

	2018	2017	2016	2015	2014	2013
Journals	3,023	3,080	2,947	2,762	2,540	2,240
%No-fee	62%	62%	62%	63%	63%	64%
Articles	289,522	253,231	222,475	195,420	176,973	152,305
%No-fee	31%	32%	34%	34%	34%	33%

Table 10.2. Articles and journals by year, STEM

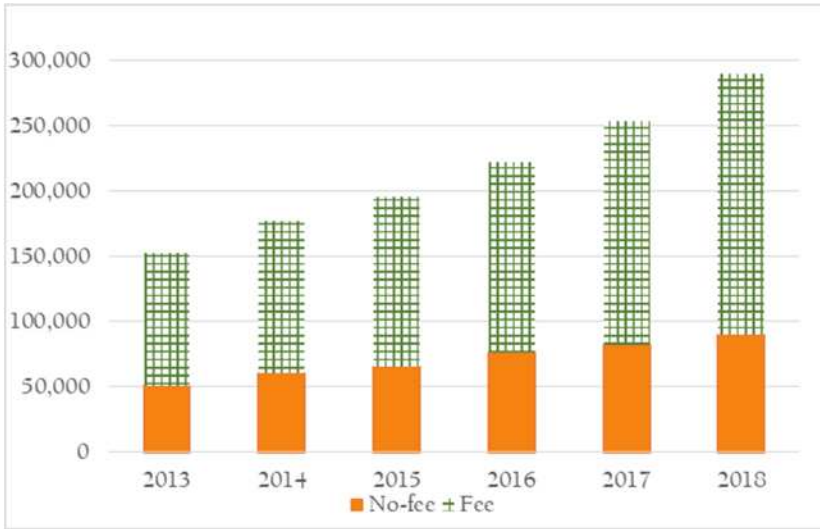


Figure 10.1. Fee and no-fee articles by year, STEM

Note that no fee article counts keep increasing—but not as rapidly as fee counts.

Article Volume

	Journals	Articles	%No-fee	\$/article
Largest: 600+	69	148,276	17%	\$1,539
Large: 150-599	224	47,292	23%	\$921
Med.: 60-149	718	47,960	46%	\$425
Small: 20-59	1,547	40,031	69%	\$201
Smallest: 0-19	623	5,963	75%	\$124

Table 10.3. Article volume, STEM

The largest journals have *by far* the most articles, more than all others combined, at least partly due to megajournals. The fee-size to journal-size correlation is typical.

Fee Level

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	242	20%	8%	129,804	65%	45%
\$600-\$1.399	297	25%	9%	31,568	16%	11%
\$200-\$599	273	23%	9%	21,067	11%	7%
\$0.01-\$199	391	33%	12%	16,793	8%	6%
No fee	1,978		62%	90,290		31%

Table 10.4. Fee level, STEM

As with biomed, nearly half of all articles are in expensive journals

Starting Date

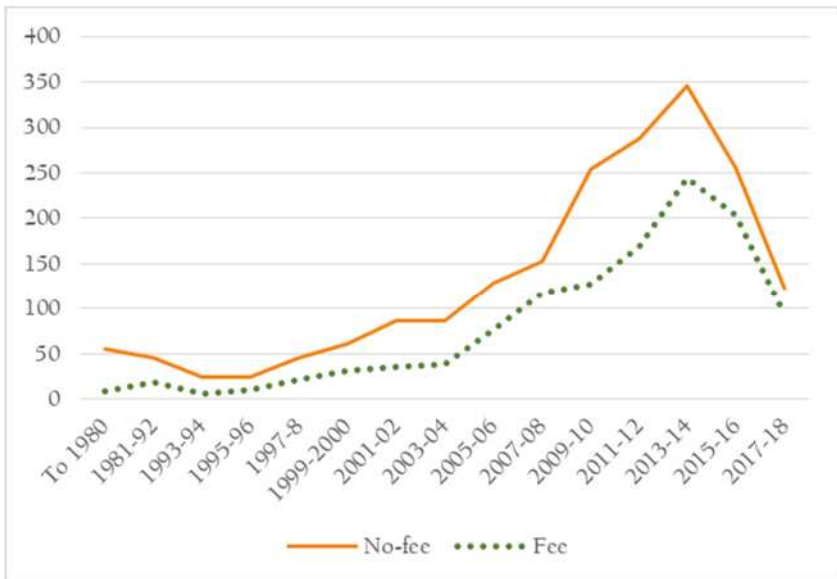


Figure 10.2. Starting date, STEM

Revenue

	Articles	Revenue	\$/article
\$1,400+	129,804	\$260,588,117	\$2,008
\$600-\$1.399	31,568	\$30,625,818	\$970
\$200-\$599	21,067	\$8,319,570	\$395
\$0.20-\$199	16,793	\$1,306,122	\$78
No fee	90,290		
Total	289,522	\$300,839,627	\$1,039

Table 10.5. Revenue, STEM

Average cost per article is slightly lower than for biomed at every level except medium-priced journals.

Region

Region	Journals	Articles	%No-fee	\$/article
Western Europe	923	164,852	23%	\$1,346
Pacific/English	160	44,969	8%	\$1,541
Eastern Europe	697	26,634	63%	\$148
Latin America	479	19,989	69%	\$76
Asia	616	19,917	49%	\$157
Middle East	252	10,715	71%	\$79
Africa	54	2,446	75%	\$86

Table 10.6. Region, STEM

Eastern Europe is more prominent than in biomed, and Asia is less prominent. This time, Pacific/English has lowest no-fee percentage.

Publisher Category

Category	Journals	Articles	%No-fee	\$/article
Open Access	757	116,186	12%	\$1,366
Traditional	286	66,794	37%	\$1,330
Univ/college	1,646	61,432	66%	\$154
Society/govt	373	40,299	22%	\$1,061
Miscellaneous	119	4,811	45%	\$207

Table 10.7. Publisher category, STEM

University journals are notably less expensive than for biomed.

Growth and Shrinkage

Change 2017-18	Count	Percent	Cum%
Grew 50%+	551	17.3%	
Grew 25-49.9%	324	10.2%	27.5%
Grew 10-24.99%	308	9.7%	37.2%
Even, $\pm 9.99\%$	909	28.6%	65.8%
Shrank 10-24.99%	384	12.1%	77.8%
Shrank 25-49.99%	388	12.2%	90.0%
Shrank 50%+	317	10.0%	

Table 10.8. Growth and shrinkage, STEM

Slightly more growth than shrinkage.

Subject

Subject	Jour.	Art.	%No-fee	\$/article
Agriculture	469	26,046	35%	\$767
Chemistry	156	27,484	16%	\$1,101
Computer Science	296	13,555	39%	\$510
Earth Sciences	409	20,519	50%	\$611
Ecology	314	29,745	31%	\$937
Engineering	432	32,225	30%	\$889
Mathematics	241	10,614	46%	\$757
Other Sciences	216	62,268	12%	\$1,801
Physics	157	28,972	33%	\$1,182
Technology	231	25,609	63%	\$534
Zoology	260	12,485	34%	\$521

Table 10.9. Subject, STEM

Other sciences—read megajournals—has the most articles and highest costs, as well as the lowest no-fee percentage.

Country of Publication

Table 10.10, on the following page, lists countries with more than 1,000 STEM articles in 2018. The high costs and extremely low no-fee percentages for United Kingdom, Switzerland and United States may not be surprising—but note France, with the fourth most articles, *very* low per-article cost, and 98% no-fee articles.

Country	Journals	Articles	%No-fee	\$/article
United Kingdom	365	60,440	5%	\$1,921
Switzerland	130	58,678	2%	\$1,600
United States	125	43,588	6%	\$1,581
France	49	19,094	98%	\$18
Germany	122	14,741	50%	\$473
Brazil	238	13,705	62%	\$96
Indonesia	407	8,864	50%	\$40
Poland	207	5,787	56%	\$222
Netherlands	61	5,672	50%	\$634
China	51	4,649	49%	\$273
Russia	85	4,520	85%	\$19
Turkey	76	3,604	84%	\$19
Iran	115	3,539	78%	\$16
Ukraine	67	3,328	58%	\$108
Romania	90	2,932	78%	\$38
Italy	52	2,062	78%	\$105
Spain	73	2,041	80%	\$111
Colombia	78	2,031	95%	\$8
Serbia	54	1,969	64%	\$68
Egypt	25	1,816	33%	\$366
Bulgaria	28	1,568	22%	\$532
Czech Republic	37	1,504	43%	\$208
India	28	1,446	66%	\$45
Croatia	31	1,419	54%	\$213
South Korea	19	1,253	20%	\$412
Mexico	31	1,185	46%	\$95
Malaysia	30	1,074	58%	\$112

Table 10.10. Country of publication, STEM, more than 1,000 articles in 2018

Agriculture: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	469	26,046			\$767	-16%
Fee	206	16,871	65%	11%	\$1,184	-25%
No-fee	263	9,175	35%	-16%		
STEM	469	26,046			\$767	-26%
Fee	206	16,871	65%	-6%	\$1,184	-22%
No-fee	263	9,175	35%	13%		

Table 10.11. Key facts, agriculture

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	29	14%	6%	7,099	42%	27%
\$600-\$1.399	33	16%	7%	2,150	13%	8%
\$200-\$599	46	22%	10%	3,317	20%	13%
\$0.01-\$199	98	48%	21%	4,305	26%	17%
No fee	263		56%	9,175		35%

Table 10.12. Fee level, agriculture

Region	Journals	Articles	%No-fee	\$/article
Western Europe	96	10,385	14%	\$1,629
Latin America	103	5,623	47%	\$120
Eastern Europe	102	4,422	61%	\$146
Asia	100	2,686	37%	\$231
Middle East	45	1,863	58%	\$21
Pacific/English	14	744	15%	\$1,404
Africa	9	323	56%	\$141

Table 10.13. Region, agriculture

Includes some aspects of aquaculture (but not marine biology or fisheries), food processing and some aspects of nutrition. Latin America and Eastern Europe are both heavy in agriculture with low fees, although Latin America's no-fee percentage is low for that region.

Chemistry: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	156	27,484			\$1,101	21%
Fee	73	22,998	84%	44%	\$1,316	-16%
No-fee	83	4,486	16%	-61%		
STEM	156	27,484			\$1,101	6%
Fee	73	22,998	84%	22%	\$1,316	-13%
No-fee	83	4,486	16%	-48%		

Table 10.14. Key facts, chemistry

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	20	27%	13%	12,593	55%	46%
\$600-\$1.399	14	19%	9%	7,283	32%	26%
\$200-\$599	23	32%	15%	2,421	11%	9%
\$0.01-\$199	16	22%	10%	701	3%	3%
No fee	83		53%	4,486		16%

Table 10.15. Fee level, chemistry

Region	Journals	Articles	%No-fee	\$/article
Western Europe	58	21,633	10%	\$1,295
Pacific/English	7	2,437	12%	\$728
Eastern Europe	33	1,259	64%	\$173
Middle East	20	703	90%	\$25
Asia	27	689	55%	\$54
Latin America	8	642	20%	\$316
Africa	3	121	60%	\$71

Table 10.16. Region, chemistry

Biochemistry is typically included in biology. Somewhat atypically, Pacific/English costs are considerably lower than Western Europe. Also somewhat atypically, Latin America's costs are higher than other regions except the top two.

Computer Science: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	296	13,555			\$510	-44%
Fee	109	8,302	61%	5%	\$833	-47%
No-fee	187	5,253	39%	-7%		
STEM	296	13,555			\$510	-51%
Fee	109	8,302	61%	-11%	\$833	-45%
No-fee	187	5,253	39%	24%		

Table 10.17. Key facts, computer science

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	14	13%	5%	1,831	22%	14%
\$600-\$1.399	34	31%	11%	1,627	20%	12%
\$200-\$599	25	23%	8%	2,620	32%	19%
\$0.01-\$199	36	33%	12%	2,224	27%	16%
No fee	187		63%	5,253		39%

Table 10.18. Fee level, computer science

Region	Journals	Articles	%No-fee	\$/article
Western Europe	101	6,016	13%	\$855
Pacific/English	20	2,785	25%	\$578
Eastern Europe	66	2,300	87%	\$32
Asia	79	1,718	67%	\$25
Middle East	14	429	87%	\$62
Latin America	12	265	100%	\$0
Africa	4	42	21%	\$383

Table 10.19. Region, computer science

Includes software, data processing, AI, robotics and portions of information science. The lowest cost of any STEM subject—and although Latin America doesn't do a lot here, what it does is all no-fee.

Earth Sciences: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	409	20,519			\$611	-33%
Fee	115	10,322	50%	-13%	\$1,215	-23%
No-fee	294	10,197	50%	19%		
STEM	409	20,519			\$611	-41%
Fee	115	10,322	50%	-27%	\$1,215	-20%
No-fee	294	10,197	50%	59%		

Table 10.20. Key facts, earth sciences

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	23	20%	6%	5,057	49%	25%
\$600-\$1,399	42	37%	10%	3,340	32%	16%
\$200-\$599	24	21%	6%	881	9%	4%
\$0.01-\$199	26	23%	6%	1,044	10%	5%
No fee	294		72%	10,197		50%

Table 10.21. Fee level, earth sciences

Region	Journals	Articles	%No-fee	\$/article
Western Europe	149	12,305	29%	\$960
Latin America	80	2,661	86%	\$40
Eastern Europe	95	2,312	85%	\$65
Asia	46	1,899	64%	\$136
Middle East	26	969	96%	\$1
Pacific/English	11	239	45%	\$927
Africa	2	134	100%	\$0

Table 10.22. Region, earth sciences

Includes geography, geology, oceanography, some place-related fields (e.g., parts of tourism) and astronomy. One of only two STEM fields where half or more of articles are no-fee. Relatively low fees, and few fee articles in most regions.

Ecology: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	314	29,745			\$937	3%
Fee	124	20,660	69%	19%	\$1,349	-14%
No-fee	190	9,085	31%	-27%		
STEM	314	29,745			\$937	-10%
Fee	124	20,660	69%	1%	\$1,349	-11%
No-fee	190	9,085	31%	-2%		

Table 10.23. Key facts, ecology

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	33	27%	11%	13,334	65%	45%
\$600-\$1.399	33	27%	11%	3,545	17%	12%
\$200-\$599	27	22%	9%	2,251	11%	8%
\$0.01-\$199	31	25%	10%	1,530	7%	5%
No fee	190		61%	9,085		31%

Table 10.24. Fee level, ecology

Region	Journals	Articles	%No-fee	\$/article
Western Europe	96	20,970	24%	\$1,200
Eastern Europe	62	2,600	37%	\$228
Latin America	60	2,188	74%	\$22
Pacific/English	29	1,878	23%	\$1,004
Asia	39	1,354	35%	\$113
Middle East	20	519	76%	\$16
Africa	8	236	84%	\$64

Table 10.25. Region, ecology

Includes environmental fields and any journal where much coverage seems devoted to ecological issues. Low cost everywhere except Western Europe and Pacific/English, and nearly free in Latin America and Middle East.

Engineering: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	432	32,225			\$889	-3%
Fee	151	22,433	70%	20%	\$1,276	-19%
No-fee	281	9,792	30%	-27%		
STEM	432	32,225			\$889	-14%
Fee	151	22,433	70%	1%	\$1,276	-15%
No-fee	281	9,792	30%	-3%		

Table 10.26. Key facts, engineering

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	26	17%	6%	13,766	61%	43%
\$600-\$1.399	36	24%	8%	2,792	12%	9%
\$200-\$599	37	25%	9%	3,481	16%	11%
\$0.01-\$199	52	34%	12%	2,394	11%	7%
No fee	281		65%	9,792		30%

Table 10.27. Fee level, engineering

Region	Journals	Articles	%No-fee	\$/article
Western Europe	82	10,108	9%	\$1,387
Pacific/English	14	7,093	2%	\$1,713
Eastern Europe	116	5,963	54%	\$165
Asia	95	3,672	40%	\$242
Middle East	44	2,601	61%	\$192
Latin America	70	2,434	97%	\$5
Africa	11	354	34%	\$239

Table 10.28. Region, engineering

Distinguished from technology primarily based on journal titles and specific subject headings. On the slightly less expensive side of STEM, especially outside the usual high-cost regions.

Mathematics: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	241	10,614			\$757	-17%
Fee	73	5,736	54%	-7%	\$1,400	-11%
No-fee	168	4,878	46%	10%		
STEM	241	10,614			\$757	-27%
Fee	73	5,736	54%	-21%	\$1,400	-7%
No-fee	168	4,878	46%	47%		

Table 10.29. Key facts, mathematics

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	9	12%	4%	3,137	55%	30%
\$600-\$1.399	31	42%	13%	1,730	30%	16%
\$200-\$599	9	12%	4%	363	6%	3%
\$0.01-\$199	24	33%	10%	506	9%	5%
No fee	168		70%	4,878		46%

Table 10.30. Fee level, mathematics

Region	Journals	Articles	%No-fee	\$/article
Western Europe	69	5,620	13%	\$1,369
Eastern Europe	65	1,775	78%	\$154
Pacific/English	21	1,145	98%	\$19
Asia	47	1,014	66%	\$20
Latin America	17	548	89%	\$23
Middle East	20	498	96%	\$7
Africa	2	14	7%	\$414

Table 10.31. Region, mathematics

Includes statistics. Relatively low overall costs, partly because there's only one expensive region: Pacific/English is almost entirely no-fee. What's more typical is that a majority of fee articles are in the most expensive journals.

Other Sciences: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	216	62,268			\$1,801	97%
Fee	67	54,742	88%	51%	\$2,049	31%
No-fee	149	7,526	12%	-71%		
STEM	216	62,268			\$1,801	73%
Fee	67	54,742	88%	28%	\$2,049	36%
No-fee	149	7,526	12%	-61%		

Table 10.32. Key facts, other sciences

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	15	22%	7%	48,475	89%	78%
\$600-\$1,399	17	25%	8%	4,311	8%	7%
\$200-\$599	16	24%	7%	919	2%	1%
\$0.01-\$199	19	28%	9%	1,037	2%	2%
No fee	149		69%	7,526		12%

Table 10.33. Fee level, other sciences

Region	Journals	Articles	%No-fee	\$/article
Western Europe	51	33,724	6%	\$2,230
Pacific/English	12	21,710	0%	\$1,690
Latin America	50	1,693	88%	\$7
Asia	46	1,504	55%	\$77
Middle East	22	1,349	86%	\$22
Eastern Europe	29	1,289	60%	\$76
Africa	6	999	100%	\$0

Table 10.34. Region, other sciences

Includes megajournals and multidisciplinary journals that appear to be mostly biomed and STEM, a small group of journals publishing conference reports and some fields that don't appear to fit anywhere else. By far the most expensive "subject," dominated by Western Europe and Pacific/English and in the most expensive journals—that's pretty much all due to megajournals and their ilk.

Physics: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	157	28,972			\$1,182	30%
Fee	84	19,553	67%	16%	\$1,752	12%
No-fee	73	9,419	33%	-22%		
STEM	157	28,972			\$1,182	14%
Fee	84	19,553	67%	-2%	\$1,752	16%
No-fee	73	9,419	33%	4%		

Table 10.35. Key facts, physics

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	35	42%	22%	15,989	82%	55%
\$600-\$1.399	20	24%	13%	1,941	10%	7%
\$200-\$599	13	15%	8%	1,188	6%	4%
\$0.01-\$199	16	19%	10%	435	2%	2%
No fee	73		46%	9,419		33%

Table 10.36. Fee level, physics

Region	Journals	Articles	%No-fee	\$/article
Western Europe	76	21,022	37%	\$1,013
Pacific/English	13	5,698	4%	\$2,222
Eastern Europe	27	817	75%	\$193
Asia	25	760	48%	\$82
Latin America	9	431	61%	\$147
Middle East	5	189	93%	\$8
Africa	2	55	9%	\$101

Table 10.37. Region, physics

Includes optics. SCOAP³-funded journals are treated as no-fee, which may explain Western Europe's moderate cost per article.

Technology: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	231	25,609			\$534	-41%
Fee	75	9,350	37%	-37%	\$1,463	-7%
No-fee	156	16,259	63%	52%		
STEM	231	25,609			\$534	-49%
Fee	75	9,350	37%	-47%	\$1,463	-3%
No-fee	156	16,259	63%	104%		

Table 10.38. Key facts, technology

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	16	21%	7%	6,677	71%	26%
\$600-\$1,399	17	23%	7%	611	7%	2%
\$200-\$599	20	27%	9%	1,214	13%	5%
\$0.01-\$199	22	29%	10%	848	9%	3%
No fee	156		68%	16,259		63%

Table 10.39. Fee level, technology

Region	Journals	Articles	%No-fee	\$/article
Western Europe	69	19,165	61%	\$652
Asia	53	2,005	69%	\$252
Eastern Europe	57	1,930	83%	\$33
Latin America	27	1,378	78%	\$46
Pacific/English	12	688	29%	\$781
Middle East	10	385	77%	\$30
Africa	3	58	60%	\$135

Table 10.40. Region, technology

Distinguished from engineering (and chemistry and physics) by journal titles and specific subjects: it's a fuzzy distinction. One of the lowest-cost STEM subjects, largely because almost two-thirds of articles (and four of five in Western Europe) are published without fees.

Zoology: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	260	12,485			\$521	-43%
Fee	126	8,265	66%	14%	\$787	-50%
No-fee	134	4,220	34%	-19%		
STEM	260	12,485			\$521	-50%
Fee	126	8,265	66%	-4%	\$787	-48%
No-fee	134	4,220	34%	8%		

Table 10.41. Key facts, zoology

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	22	17%	8%	1,846	22%	15%
\$600-\$1.399	20	16%	8%	2,238	27%	18%
\$200-\$599	33	26%	13%	2,412	29%	19%
\$0.01-\$199	51	40%	20%	1,769	21%	14%
No fee	134		52%	4,220		34%

Table 10.42. Fee level, zoology

Region	Journals	Articles	%No-fee	\$/article
Western Europe	76	3,904	25%	\$1,055
Asia	59	2,616	32%	\$161
Latin America	43	2,126	50%	\$155
Eastern Europe	45	1,967	35%	\$345
Middle East	26	1,210	42%	\$176
Pacific/English	7	552	11%	\$1,302
Africa	4	110	71%	\$203

Table 10.43. Region, zoology

Includes veterinary medicine and marine biology. Second lowest-cost STEM subject, with relatively few articles in high-cost journals.

11. Humanities & Social Sciences

The humanities and social sciences (H&SS) have many more gold OA journals than other segments (more than 5,900 in all), but they're mostly smaller journals from universities and colleges, and very few charge fees. Total potential revenue is a tiny fraction of the other segments, less than one-fifteenth that of biomed.

	Jrn.	Art.	Art%	\$/Art
H&SS	5,937	169,306		\$123
Fee	784	37,307	22%	\$558
No-fee	5,153	131,999	78%	

Table 11.1. Key facts, H&SS

Articles and Journals

	2018	2017	2016	2015	2014	2013
Journals	5,508	5,727	5,577	5,258	4,788	4,302
%No-fee	87%	87%	87%	88%	88%	89%
Articles	169,306	171,584	163,123	147,097	130,659	116,277
%No-fee	78%	80%	79%	81%	82%	83%

Table 11.2. Articles and journals by year, H&SS

A small drop in articles in 2018, but reasonable growth over the years. No-fee percentages are declining, but very slowly.

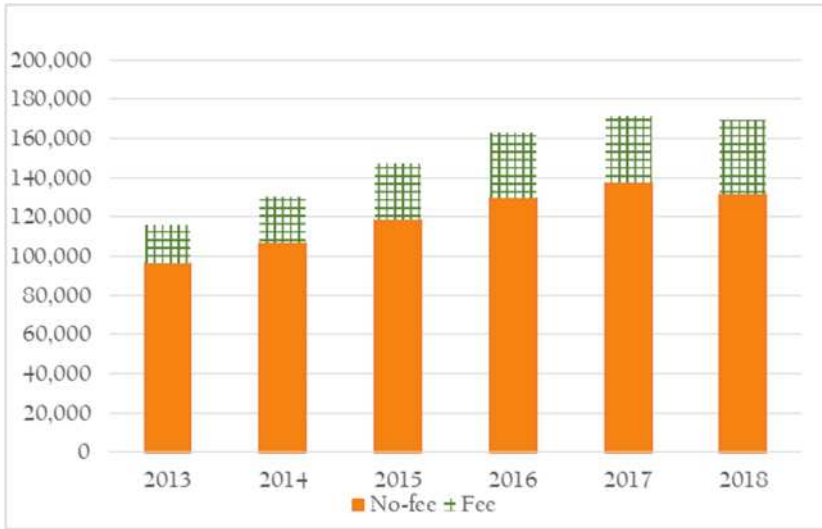


Figure 11.1. Fee and no-fee articles by year, H&SS

Article Volume

	Journals	Articles	%No-fee	\$/article
Largest: 600+	8	6,970	31%	\$1,181
Large: 150-599	122	19,020	46%	\$223
Med.: 60-149	727	43,121	75%	\$109
Small: 20-59	3,485	84,729	89%	\$38
Smallest: 0-19	1,595	15,466	89%	\$25

Table 11.3. Article volume, H&SS

A most unusual distribution, with small journals having the most articles and largest journals the fewest—although the expensive articles are still in the largest journals.

Fee Level

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	40	5%	1%	4,670	13%	3%
\$600-\$1,399	90	11%	2%	4,503	12%	3%
\$200-\$599	148	19%	2%	8,774	24%	5%
\$0.01-\$199	506	65%	9%	19,360	52%	11%
No fee	5,153		87%	131,999		78%

Table 11.4. Fee level, H&SS

Not only do 78% of articles have no fee at all, a majority of those with fees have nominal fees.

Starting Date

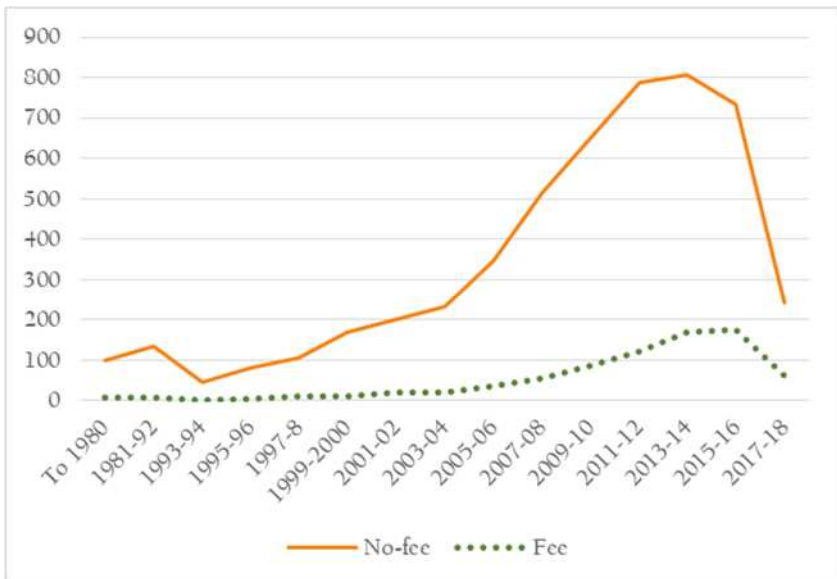


Figure 11.2. Starting date, H&SS

Steady growth through the 1990s, faster growth after 2002—and a broad six-year near-peak before introductions started to decline in 2015.

Revenue

	Articles	Revenue	\$/article
\$1,400+	4,670	\$11,667,829	\$2,498
\$600-\$1.399	4,503	\$4,674,269	\$1,038
\$200-\$599	8,774	\$3,087,604	\$352
\$0.20-\$199	19,360	\$1,386,346	\$72
No fee	131,999		
Total	169,306	\$20,816,048	\$123

Table 11.5. Revenue, H&SS

Given the small sums involved in H&SS, it's a bit surprising that per-article costs in the most expensive journals are so high—actually higher than for biomed or STEM.

Region

Region	Journals	Articles	%No-fee	\$/article
Western Europe	1,661	47,529	73%	\$341
Latin America	1,507	46,377	97%	\$4
Eastern Europe	1,008	31,751	71%	\$44
Asia	935	18,684	70%	\$31
Pacific/English	463	11,558	86%	\$82
Middle East	296	11,162	58%	\$68
Africa	67	2,245	24%	\$344

Table 11.6. Region, H&SS

Latin America nearly equals Western Europe in article volume—at not much more than 1% of the per-article cost.

Publisher Category

Category	Journals	Articles	%No-fee	\$/article
Univ/college	4,507	121,414	85%	\$21
Open Access	546	19,725	41%	\$707
Society/govt	464	13,060	92%	\$25
Miscellaneous	277	9,433	66%	\$73
Traditional	143	5,674	44%	\$583

Table 11.7. Publisher category, H&SS

University and college publishers absolutely dominate both in journals and articles, at a very low cost per article,

Growth and Shrinkage

Change 2017-18	Count	Percent	Cum%
Grew 50%+	742	12.5%	
Grew 25-49.9%	550	9.3%	21.8%
Grew 10-24.99%	633	10.7%	32.4%
Even, \pm 9.99%	1,786	30.1%	62.5%
Shrank 10-24.99%	756	12.7%	75.2%
Shrank 25-49.99%	729	12.3%	87.5%
Shrank 50%+	741	12.5%	

Table 11.8. Growth and shrinkage, H&SS

More shrinkage than growth.

Subject

Subject	Jour.	Art.	%No-fee	\$/article
Anthropology	489	13,835	78%	\$81
Arts & Architecture	315	8,682	73%	\$147
Economics	791	20,288	66%	\$100
Education	843	26,140	81%	\$62
History	324	8,592	95%	\$8
Language & Literature	763	20,205	81%	\$32
Law	364	8,930	92%	\$19
Library Science	145	3,363	98%	\$8
Media & Communications	221	6,092	89%	\$53
Miscellany	211	8,875	73%	\$95
Philosophy	207	5,161	94%	\$50
Political Science	318	8,334	89%	\$23
Psychology	209	8,244	50%	\$1,095
Religion	208	5,128	69%	\$127
Sociology	529	17,437	71%	\$148

Table 11.9. Subject, H&SS

As in Chapters 9 and 10, this table is alphabetic by country to serve as an introduction to the pages following the partial list of countries. Do note that Psychology stands out—not only the only H&SS subject with an average cost over \$1,000, but the only one above \$150. Psychology accounts for about half of all H&SS revenues.

Country of Publication

Table 11.10 shows the 29 countries with at least 1,000 H&SS articles in 2018. Consider the top three by article volume: two in the global South with *extremely* low costs per article, one in Western Europe with very low costs per article. For that matter, even the United States shows two-digit costs per article, in part because 85% of articles have no fees at all. Switzerland is an anomaly and, to a lesser degree, so are the United Kingdom and South Africa.

Country	Journals	Articles	%No-fee	\$/article
Brazil	834	29,989	97%	\$4
Indonesia	785	14,697	67%	\$19
Spain	543	13,690	91%	\$57
United States	300	7,869	85%	\$84
Turkey	179	7,823	57%	\$80
Switzerland	47	7,268	27%	\$1,282
Russia	129	7,220	78%	\$24
United Kingdom	247	6,895	42%	\$703
Poland	221	6,672	69%	\$55
Italy	228	5,706	92%	\$12
Romania	199	5,163	66%	\$29
Colombia	200	4,464	100%	\$0
Ukraine	78	3,766	44%	\$35
Argentina	156	3,200	99%	\$0
France	150	3,171	99%	\$0
Germany	99	2,691	75%	\$99
Mexico	80	2,518	97%	\$4
Iran	91	2,349	71%	\$17
Canada	96	2,242	95%	\$68
Netherlands	63	2,130	85%	\$164
Portugal	63	1,934	68%	\$196
Serbia	80	1,856	87%	\$12
South Africa	47	1,713	16%	\$420
Chile	75	1,556	100%	\$0
Cuba	29	1,396	93%	\$5
Croatia	66	1,332	95%	\$19
Australia	57	1,294	73%	\$102
Norway	76	1,266	91%	\$101
Ecuador	26	1,094	100%	\$0

Table 11.10. Country of publication, H&SS with >1000 articles in 2018

Anthropology: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	489	13,835			\$81	-91%
Fee	58	3,042	22%	-62%	\$368	-77%
No-fee	431	10,793	78%	86%		
H&SS	489	13,835			\$81	-34%
Fee	58	3,042	22%	0%	\$368	-34%
No-fee	431	10,793	78%	0%		

Table 11.11. Key facts, anthropology

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	6	10%	1%	302	10%	2%
\$600-\$1,399	6	10%	1%	106	3%	1%
\$200-\$599	17	29%	3%	922	30%	7%
\$0.01-\$199	29	50%	6%	1,712	56%	12%
No fee	431		88%	10,793		78%

Table 11.12. Fee level, anthropology

Region	Journals	Articles	%No-fee	\$/article
Western Europe	178	4,573	81%	\$156
Latin America	117	3,475	98%	\$4
Eastern Europe	95	3,465	53%	\$49
Asia	43	924	75%	\$63
Pacific/English	34	779	90%	\$10
Middle East	21	608	72%	\$261
Africa	1	11	100%	\$0

Table 11.13. Region, anthropology

Includes archæology and sports sciences. Low costs even for H&SS—and, curiously, the Middle East is the only region other than Western Europe with three-digit average cost per article. Note Latin America's near-zero costs for the second largest volume.

Arts & Architecture: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	315	8,682			\$147	-84%
Fee	36	2,302	27%	-54%	\$555	-65%
No-fee	279	6,380	73%	76%		
H&SS	315	8,682			\$147	20%
Fee	36	2,302	27%	20%	\$555	-1%
No-fee	279	6,380	73%	-6%		

Table 11.14. Key facts, arts & architecture

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	4	11%	1%	457	20%	5%
\$600-\$1,399	6	17%	2%	419	18%	5%
\$200-\$599	8	22%	3%	384	17%	4%
\$0.01-\$199	18	50%	6%	1,042	45%	12%
No fee	279		89%	6,380		73%

Table 11.15. Fee level, arts & architecture

Region	Journals	Articles	%No-fee	\$/article
Western Europe	144	3,700	67%	\$293
Latin America	67	1,971	100%	\$0
Eastern Europe	48	1,313	80%	\$26
Middle East	10	830	23%	\$72
Pacific/English	23	467	72%	\$194
Asia	22	386	83%	\$16
Africa	1	15	100%	\$0

Table 11.16. Region, arts & architecture

Includes most journals related to the fine arts and some related to architecture and urban planning—but note two other subjects: language & literature and media & communications. A bit higher costs than H&SS in general, but still mostly no-fee and with almost half of fee articles at nominal fees, Latin America has the second most articles with no fees at all.

Economics: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	791	20,288			\$100	-89%
Fee	177	6,922	34%	-41%	\$294	-81%
No-fee	614	13,366	66%	57%		
H&SS	791	20,288			\$100	-18%
Fee	177	6,922	34%	55%	\$294	-47%
No-fee	614	13,366	66%	-15%		

Table 11.17. Key facts, economics

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	5	3%	1%	93	1%	0%
\$600-\$1.399	14	8%	2%	845	12%	4%
\$200-\$599	34	19%	4%	1,999	29%	10%
\$0.01-\$199	124	70%	16%	3,985	58%	20%
No fee	614		78%	13,366		66%

Table 11.18. Fee level, economics

Region	Journals	Articles	%No-fee	\$/article
Eastern Europe	228	7,124	58%	\$91
Asia	191	3,890	72%	\$27
Latin America	161	3,639	98%	\$6
Western Europe	113	2,585	56%	\$317
Middle East	59	2,173	37%	\$145
Pacific/English	32	680	79%	\$39
Africa	7	197	29%	\$490

Table 11.19. Region, economics

Includes most business and management topics. Despite the “all about money” slant, cost per article is on the low side even for H&SS, especially for fee articles. Regions are unusual, with Eastern Europe on top and Asia and Latin America following.

Education: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	843	26,140			\$62	-93%
Fee	148	5,024	19%	-67%	\$321	-80%
No-fee	695	21,116	81%	93%		
H&SS	843	26,140			\$62	-50%
Fee	148	5,024	19%	-13%	\$321	-43%
No-fee	695	21,116	81%	4%		

Table 11.20. Key facts, education

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	3	2%	0%	144	3%	1%
\$600-\$1,399	14	9%	2%	575	11%	2%
\$200-\$599	22	15%	3%	1,357	27%	5%
\$0.01-\$199	109	74%	13%	2,948	59%	11%
No fee	695		82%	21,116		81%

Table 11.21. Fee level, education

Region	Journals	Articles	%No-fee	\$/article
Latin America	210	9,197	96%	\$5
Asia	222	5,114	65%	\$39
Western Europe	177	4,825	75%	\$195
Eastern Europe	77	2,509	64%	\$59
Pacific/English	88	2,170	88%	\$50
Middle East	58	1,931	88%	\$19
Africa	11	394	23%	\$340

Table 11.22. Region, education

Latin America is most prolific—with truly nominal costs.

History: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	324	8,592			\$8	-99%
Fee	13	411	5%	-92%	\$166	-89%
No-fee	311	8,181	95%	128%		
H&SS	324	8,592			\$8	-94%
Fee	13	411	5%	-78%	\$166	-70%
No-fee	311	8,181	95%	22%		

Table 11.23. Key facts, history

	Jour.	%APC	%All	Art.	%APC	%All
\$200-\$599	2	15%	1%	177	43%	2%
\$0.01-\$199	11	85%	3%	234	57%	3%
No fee	311		96%	8,181		95%

Table 11.24. Fee level, history

Region	Journals	Articles	%No-fee	\$/article
Western Europe	130	2,925	98%	\$2
Latin America	100	2,752	100%	\$0
Eastern Europe	44	1,339	85%	\$39
Pacific/English	25	1,091	100%	\$0
Middle East	12	265	76%	\$15
Asia	11	185	69%	\$16
Africa	2	35	46%	\$82

Table 11.25. Region, history

Includes most aspects of cultural research focused on the past and a number of local and regional journals. One of the two lowest-cost subjects, with a single-digit overall average—and no journals charging more than \$599. While \$0 for Latin America isn't that unusual, \$2 for Western Europe and \$0 for Pacific/English are out of the ordinary.

Language & Literature: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	763	20,205			\$32	-96%
Fee	79	3,925	19%	-67%	\$165	-89%
No-fee	684	16,280	81%	93%		
H&SS	763	20,205			\$32	-74%
Fee	79	3,925	19%	-12%	\$165	-70%
No-fee	684	16,280	81%	3%		

Table 11.26. Key facts, language & literature

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	1	1%	0%	25	1%	0%
\$600-\$1,399	3	4%	0%	42	1%	0%
\$200-\$599	16	20%	2%	838	21%	4%
\$0.01-\$199	59	75%	8%	3,020	77%	15%
No fee	684		90%	16,280		81%

Table 11.27. Fee level, language & literature

Region	Journals	Articles	%No-fee	\$/article
Western Europe	276	5,318	91%	\$39
Latin America	150	5,182	99%	\$1
Eastern Europe	131	3,766	79%	\$22
Asia	106	2,082	68%	\$30
Middle East	24	1,908	30%	\$68
Pacific/English	66	1,685	79%	\$51
Africa	10	264	11%	\$304

Table 11.28. Region, language & literature

Includes linguistics and a number of other fields as well as author-specific journals. Low costs by any standard, and a fairly typical H&SS profile.

Law: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	364	8,930			\$19	-98%
Fee	27	718	8%	-86%	\$236	-85%
No-fee	337	8,212	92%	120%		
H&SS	364	8,930			\$19	-85%
Fee	27	718	8%	-64%	\$236	-58%
No-fee	337	8,212	92%	18%		

Table 11.29. Key facts, law

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	1	4%	0%	25	3%	0%
\$600-\$1.399	4	15%	1%	64	9%	1%
\$200-\$599	4	15%	1%	132	18%	1%
\$0.01-\$199	18	67%	5%	497	69%	6%
No fee	337		93%	8,212		92%

Table 11.30. Fee level, law

Region	Journals	Articles	%No-fee	\$/article
Latin America	141	3,405	100%	\$0
Western Europe	78	2,302	90%	\$58
Eastern Europe	54	1,611	92%	\$5
Asia	60	1,036	74%	\$19
Middle East	10	246	85%	\$9
Pacific/English	15	171	100%	\$0
Africa	6	159	62%	\$32

Table 11.31. Region, law

Includes forensics and criminology. Another very low-cost subject, and another case where Latin America publishes the most articles and charges no fees at all.

Library Science: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	145	3,363			\$8	-99%
Fee	5	77	2%	-96%	\$371	-76%
No-fee	140	3,286	98%	133%		
H&SS	145	3,363			\$8	-93%
Fee	5	77	2%	-90%	\$371	-33%
No-fee	140	3,286	98%	25%		

Table 11.32. Key facts, library science

	Jour.	%APC	%All	Art.	%APC	%All
\$200-\$599	3	60%	2%	59	77%	2%
\$0.01-\$199	2	40%	1%	18	23%	1%
No fee	140		97%	3,286		98%

Table 11.33. Fee level, library science

Region	Journals	Articles	%No-fee	\$/article
Western Europe	41	1,047	98%	\$6
Latin America	30	816	100%	\$0
Pacific/English	29	646	100%	\$0
Eastern Europe	18	383	89%	\$54
Asia	19	279	97%	\$1
Middle East	6	177	100%	\$0
Africa	2	15	27%	\$100

Table 11.34. Region, library science

Includes bibliography, archives, museums and some aspects of information science that don't seem specifically akin to computer science. Tied for lowest cost per article, and another case where no journals charge \$600 or more (and where neither Latin America nor Pacific/English have any fee-charging journals).

Media & Communications: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	221	6,092			\$53	-94%
Fee	17	649	11%	-82%	\$495	-68%
No-fee	204	5,443	89%	113%		
H&SS	221	6,092			\$53	-57%
Fee	17	649	11%	-52%	\$495	-11%
No-fee	204	5,443	89%	15%		

Table 11.35. Key facts, media & communications

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	1	6%	0%	57	9%	1%
\$600-\$1,399	4	24%	2%	160	25%	3%
\$200-\$599	2	12%	1%	114	18%	2%
\$0.01-\$199	10	59%	5%	318	49%	5%
No fee	204		92%	5,443		89%

Table 11.36. Fee level, media & communications

Region	Journals	Articles	%No-fee	\$/article
Western Europe	87	2,786	83%	\$104
Latin America	66	2,036	100%	\$1
Pacific/English	18	442	100%	\$0
Asia	22	353	65%	\$24
Eastern Europe	22	343	98%	\$2
Middle East	5	110	75%	\$17
Africa	1	22	0%	\$828

Table 11.37. Region, media & communication

Includes film, journalism, communication theory and some related fields. Not all that unusual, except possibly that seeming contradiction for Latin America. One journal with fairly high fees published three articles in 2018—less than one-half of one percent of all Latin America articles in media & communication, but enough to average to more than \$0.49 per article.

Miscellany: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	211	8,875			\$95	-90%
Fee	38	2,363	27%	-54%	\$356	-77%
No-fee	173	6,512	73%	75%		
H&SS	211	8,875			\$95	-23%
Fee	38	2,363	27%	21%	\$356	-36%
No-fee	173	6,512	73%	-6%		

Table 11.38. Key facts, miscellany

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	1	3%	0%	15	1%	0%
\$600-\$1,399	6	16%	3%	361	15%	4%
\$200-\$599	6	16%	3%	855	36%	10%
\$0.01-\$199	25	66%	12%	1,132	48%	13%
No fee	173		82%	6,512		73%

Table 11.39. Fee level, miscellany

Region	Journals	Articles	%No-fee	\$/article
Latin America	81	3,153	86%	\$5
Western Europe	39	2,687	67%	\$229
Eastern Europe	38	1,477	77%	\$29
Asia	27	673	52%	\$26
Pacific/English	14	462	43%	\$224
Middle East	7	276	98%	\$1
Africa	5	147	20%	\$324

Table 11.40. Region, miscellany

Includes multidisciplinary and interdisciplinary journals that appear to have strong HSS components and a few journals that didn't fit anywhere else.

Philosophy: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	207	5,161			\$50	-95%
Fee	10	307	6%	-90%	\$841	-46%
No-fee	197	4,854	94%	125%		
H&SS	207	5,161			\$50	-59%
Fee	10	307	6%	-73%	\$841	51%
No-fee	197	4,854	94%	21%		

Table 11.41. Key facts, philosophy

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	2	20%	1%	83	27%	2%
\$600-\$1,399	2	20%	1%	42	14%	1%
\$200-\$599	1	10%	0%	69	22%	1%
\$0.01-\$199	5	50%	2%	113	37%	2%
No fee	197		95%	4,854		94%

Table 11.42. Fee level, philosophy

Region	Journals	Articles	%No-fee	\$/article
Western Europe	207	5,161	94%	\$50
Pacific/English	72	1,750	93%	\$126
Eastern Europe	56	1,457	95%	\$21
Asia	40	1,164	98%	\$2
Middle East	25	544	100%	\$0
Latin America	5	136	74%	\$14

Table 11.43. Region, philosophy

Includes specific philosophies and philosophers—but note that religion is a separate and roughly equal-size subject. Relatively expensive fee articles for H&SS, but there are so few of them that overall cost per article is on the low side. Africa has no active DOAJ-listed philosophy journals.

Political Science: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	318	8,334			\$23	-98%
Fee	29	940	11%	-81%	\$201	-87%
No-fee	289	7,394	89%	112%		
H&SS	318	8,334			\$23	-82%
Fee	29	940	11%	-49%	\$201	-64%
No-fee	289	7,394	89%	14%		

Table 11.44. Key facts, political science

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	2	7%	1%	7	1%	0%
\$600-\$1.399	4	14%	1%	142	15%	2%
\$200-\$599	2	7%	1%	31	3%	0%
\$0.01-\$199	21	72%	7%	760	81%	9%
No fee	289		91%	7,394		89%

Table 11.45. Fee level, political science

Region	Journals	Articles	%No-fee	\$/article
Eastern Europe	84	2,802	84%	\$4
Latin America	79	2,010	99%	\$0
Western Europe	86	1,985	91%	\$80
Asia	35	642	59%	\$28
Middle East	12	411	100%	\$0
Pacific/English	18	391	100%	\$0
Africa	4	93	75%	\$13

Table 11.46. Region, political science

Includes military and defense topics and most of governmental affairs. On the low-cost side for H&SS, with only three regions having two-digit costs per article (and none reaching three digits).

Psychology: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	209	8,244			\$1,095	20%
Fee	46	4,087	50%	-15%	\$2,208	41%
No-fee	163	4,157	50%	20%		
H&SS	209	8,244			\$1,095	790%
Fee	46	4,087	50%	125%	\$2,208	296%
No-fee	163	4,157	50%	-35%		

Table 11.47. Key facts, psychology

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	8	17%	4%	3,012	74%	37%
\$600-\$1.399	11	24%	5%	345	8%	4%
\$200-\$599	9	20%	4%	280	7%	3%
\$0.01-\$199	18	39%	9%	450	11%	5%
No fee	163		78%	4,157		50%

Table 11.48. Fee level, psychology

Region	Journals	Articles	%No-fee	\$/article
Western Europe	60	4,161	18%	\$2,081
Latin America	63	1,851	99%	\$0
Eastern Europe	32	903	79%	\$25
Asia	23	600	80%	\$18
Pacific/English	16	407	43%	\$759
Middle East	14	302	65%	\$21
Africa	1	20	0%	\$756

Table 11.49. Region, psychology

Includes a few journals that might really be psychiatry (and in medicine). *By far* the highest-cost subject in H&SS, the only one with four-digit average cost per article (or more than \$150, for that matter); it accounts for more than 40% of all H&SS revenue. But still, there's Latin America, second most prolific region, where costs average less than \$0.50 per article.

Religion: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	208	5,128			\$127	-86%
Fee	32	1,569	31%	-47%	\$416	-73%
No-fee	176	3,559	69%	66%		
H&SS	208	5,128			\$127	4%
Fee	32	1,569	31%	39%	\$416	-25%
No-fee	176	3,559	69%	-11%		

Table 11.50. Key facts, religion

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	1	3%	0%	0	0%	0%
\$600-\$1,399	3	9%	1%	277	18%	5%
\$200-\$599	11	34%	5%	788	50%	15%
\$0.01-\$199	17	53%	8%	504	32%	10%
No fee	176		85%	3,559		69%

Table 11.51. Fee level, religion

Region	Journals	Articles	%No-fee	\$/article
Asia	99	1,528	76%	\$33
Western Europe	30	1,380	50%	\$212
Latin America	24	705	96%	\$9
Middle East	19	511	100%	\$0
Africa	8	433	0%	\$632
Eastern Europe	18	418	88%	\$70
Pacific/English	10	153	100%	\$0

Table 11.52. Region, religion

Includes journals devoted to specific religions, religious leaders, and other subjects where the religious aspect is key; also aspects of religious and non-religious thought (e.g. atheism). Asia is most active in this area, and while overall costs are typical for H&SS, costs for fee-based articles are a bit on the low side—note the modest cost per article in Asia.

Sociology: Selected Tables

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	529	17,437			\$148	-84%
Fee	69	4,971	29%	-51%	\$517	-67%
No-fee	460	12,466	71%	71%		
H&SS	529	17,437			\$148	20%
Fee	69	4,971	29%	29%	\$517	-7%
No-fee	460	12,466	71%	-8%		

Table 11.53. Key facts, sociology

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	5	7%	1%	450	9%	3%
\$600-\$1.399	13	19%	2%	1,125	23%	6%
\$200-\$599	11	16%	2%	769	15%	4%
\$0.01-\$199	40	58%	8%	2,627	53%	15%
No fee	460		87%	12,466		71%

Table 11.54. Fee level, sociology

Region	Journals	Articles	%No-fee	\$/article
Western Europe	150	5,505	63%	\$371
Latin America	162	4,728	94%	\$10
Eastern Europe	79	3,134	58%	\$38
Pacific/English	50	1,470	87%	\$146
Middle East	34	1,278	50%	\$30
Asia	46	882	74%	\$20
Africa	8	440	25%	\$218

Table 11.55. Region, philosophy

Includes gender studies, social science and some journals that didn't fit elsewhere. Fairly typical profile.

12. Africa

Africa (excluding the Middle East) has a fairly long history of open access publishing, but it's on a small scale (at least in *DOAJ* as of 1/1/2019), with by far the fewest journals and articles of any region. A significant number of African OA journals were added to *DOAJ* during 2018—but it's still a small number, and a decline in article count since 2016 continues.

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	158	7,117			\$224	-75%
Fee	72	4,237	60%	2%	\$376	-76%
No-fee	86	2,880	40%	-3%		
Biomed	37	2,426	34%	-4%	\$251	-81%
Fee	15	1,913	79%	12%	\$318	-83%
No-fee	22	513	21%	-29%		
STEM	54	2,446	34%	-16%	\$86	-92%
Fee	19	611	25%	-64%	\$346	-77%
No-fee	35	1,835	75%	141%		
H&SS	67	2,245	32%	33%	\$344	180%
Fee	38	1,713	76%	246%	\$451	-19%
No-fee	29	532	24%	-70%		

Table 12.1. Key facts, Africa

Africa is relatively strong in H&SS, relatively weak in STEM. Because a higher than usual percentage of H&SS articles have fees, the overall cost for H&SS is high: in fact, it's the most expensive segment. (Biomed, by contrast, is *very* inexpensive compared to the segment as a whole.)

Articles and Journals

	2018	2017	2016	2015	2014	2013
Journals	151	156	153	146	134	120
%No-fee	53%	54%	54%	53%	53%	52%
Articles	7,117	7,615	8,729	6,709	5,885	4,163
%No-fee	40%	42%	31%	32%	33%	35%

Table 12.2. Articles and journals by year, Africa

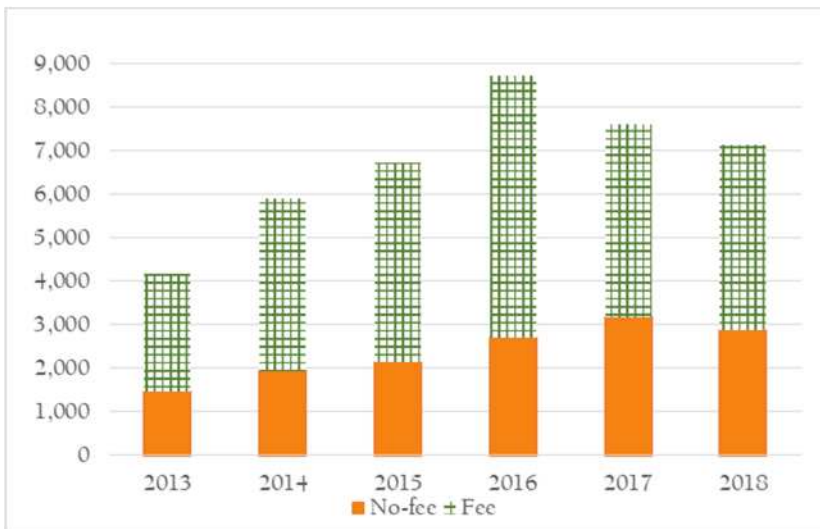


Figure 12.1. Fee and no-fee articles by year, Africa

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

Article Volume

	Journals	Articles	%No-fee	\$/article
Largest: 600+	3	1,655	48%	\$92
Large: 150-599	7	1,294	4%	\$356
Med.: 60-149	29	1,649	36%	\$299
Small: 20-59	85	2,218	55%	\$198
Smallest: 0-19	34	301	71%	\$159

Table 12.3. Article volume, Africa

Very few large and largest journals. While the increasing percentage of no-fee articles as journals get smaller is typical, the extremely percentage of no-fee articles in large journals is not—and neither is the fact that the largest journals have the *lowest* average cost per article.

Fee Level

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	1	1%	1%	8	0%	0%
\$600-\$1.399	20	28%	13%	865	20%	12%
\$200-\$599	23	32%	15%	1,640	39%	23%
\$0.01-\$199	28	39%	18%	1,724	41%	24%
No fee	86		54%	2,880		40%

Table 12.4. Fee level, Africa

Only one expensive journal, and a very small one (in 2018) at that. Less expensive journals dominate.

Starting Date

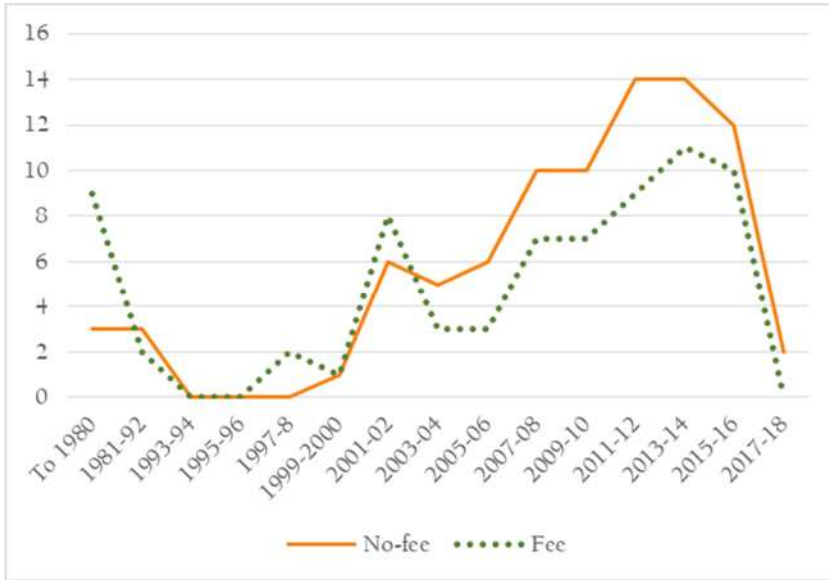


Figure 12.2. Starting date, Africa

Revenue

	Articles	Revenue	\$/article
\$1,400+	8	\$12,000	\$1,500
\$600-\$1.399	865	\$734,312	\$849
\$200-\$599	1,640	\$572,031	\$349
\$0.20-\$199	1,724	\$273,195	\$158
No fee	2,880		

Table 12.5. Revenue, Africa

Publisher Category

Category	Journals	Articles	%No-fee	\$/article
Univ/college	69	2,945	66%	\$82
Open Access	48	1,823	21%	\$507
Society/govt	22	1,486	30%	\$162
Miscellaneous	16	780	9%	\$187
Traditional	3	83	49%	\$472

Table 12.6. Publisher category, Africa

Universities and colleges take the lead—and traditional publishers are basically absent.

Growth and Shrinkage

Change 2017-18	Count	Percent	Cum%
Grew 50%+	18	11.4%	
Grew 25-49.9%	22	13.9%	25.3%
Grew 10-24.99%	21	13.3%	38.6%
Even, \pm 9.99%	28	17.7%	56.3%
Shrank 10-24.99%	25	15.8%	72.2%
Shrank 25-49.99%	22	13.9%	86.1%
Shrank 50%+	22	13.9%	

Table 12.7. Growth and shrinkage, Africa

More shrinkage than growth (43.7% to 38.6%).

Subject

Subject	Jour.	Art.	%No-fee	\$/article
Medicine	33	2,256	21%	\$259
Other Sciences	6	999	100%	\$0
Sociology	8	440	25%	\$218
Religion	8	433	0%	\$632
Education	11	394	23%	\$340
Engineering	11	354	34%	\$239
Agriculture	9	323	56%	\$141
Language & Literature	10	264	11%	\$304
Ecology	8	236	84%	\$64
Economics	7	197	29%	\$490
Biology	4	170	18%	\$135
Law	6	159	62%	\$32
Miscellany	5	147	20%	\$324
Earth Sciences	2	134	100%	\$0
Chemistry	3	121	60%	\$71
Zoology	4	110	71%	\$203
Political Science	4	93	75%	\$13
Technology	3	58	60%	\$135
Physics	2	55	9%	\$101
Computer Science	4	42	21%	\$383
History	2	35	46%	\$82
Media & Communications	1	22	0%	\$828
Psychology	1	20	0%	\$756
Arts & Architecture	1	15	100%	\$0
Library Science	2	15	27%	\$100
Mathematics	2	14	7%	\$414
Anthropology	1	11	100%	\$0

Table 12.8. Subject, Africa

Country of Publication

Country	Journals	Articles	%No-fee	\$/article
South Africa	87	3,295	30%	\$367
Algeria	19	1,093	100%	\$0
Uganda	1	786	0%	\$180
Nigeria	8	613	18%	\$175
Morocco	13	299	84%	\$29
Kenya	5	260	14%	\$225
Tunisia	6	165	45%	\$80
Libya	2	125	46%	\$54
Mauritius	2	120	10%	\$270
Ethiopia	4	99	100%	\$0
Ghana	5	67	51%	\$49
Cameroon	1	61	0%	\$171
Dem. Rep. Congo	1	50	100%	\$0
Mali	1	23	0%	\$34
South Sudan	1	22	100%	\$0
Zimbabwe	1	21	100%	\$0
Angola	1	18	100%	\$0

Table 12.9. Country of publication, Africa

Four more countries than in GOAJ3.

13. Asia

Asia's presence in *DOAJ* has changed character markedly over the last four years. India's presence dropped dramatically in 2016 and again in 2017, but is now trending up again, while Indonesia's journal count has nearly tripled since 2016, particularly improving this year because its malware problem has been fixed. Overall, articles have rebounded considerably from *GOAJ3*.

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	2,063	71,078			\$161	-82%
Fee	664	30,567	43%	-26%	\$374	-76%
No-fee	1,399	40,511	57%	36%		
Biomed	512	32,477	46%	29%	\$238	-82%
Fee	168	14,712	45%	-35%	\$526	-72%
No-fee	344	17,765	55%	83%		
STEM	616	19,917	28%	-31%	\$157	-85%
Fee	242	10,183	51%	-26%	\$307	-80%
No-fee	374	9,734	49%	57%		
H&SS	935	18,684	26%	10%	\$31	-75%
Fee	254	5,672	30%	38%	\$102	-82%
No-fee	681	13,012	70%	-11%		

Table 13.1. Key facts, Asia

Very low costs across the board and mostly no-fee articles except in STEM. Relatively strong in biomed, relatively weak in STEM.

Articles and Journals

	2018	2017	2016	2015	2014	2013
Journals	1,957	2,016	1,861	1,671	1,464	1,254
%No-fee	68%	68%	67%	66%	66%	66%
Articles	71,078	72,226	69,408	61,385	53,492	46,035
%No-fee	57%	57%	58%	55%	57%	55%

Table 13.2. Articles and journals by year, Asia

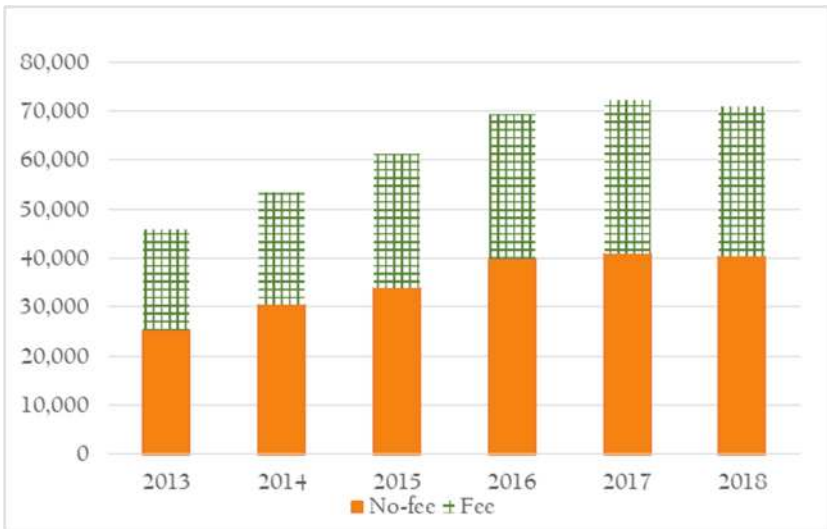


Figure 13.1. Fee and no-fee articles by year, Asia

A slight drop in 2018 (but the 2017 count in GOAJ3 was 41,451).

Article Volume

	Journals	Articles	%No-fee	\$/article
Largest: 600+	6	3,604	20%	\$538
Large: 150-599	98	18,328	44%	\$309
Med.: 60-149	271	16,940	58%	\$148
Small: 20-59	1,045	24,959	66%	\$49
Smallest: 0-19	643	7,247	75%	\$16

Table 13.3. Article volume, Asia

The usual correlation between journal size and article cost, but large journals publish relatively fewer articles, with the most coming from small journals.

Fee Level

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	17	3%	1%	2,807	9%	4%
\$600-\$1,399	26	4%	1%	2,458	8%	3%
\$200-\$599	100	15%	5%	10,020	33%	14%
\$0.01-\$199	521	78%	25%	15,282	50%	22%
No fee	1,399		68%	40,511		57%

Table 13.4. Fee level, Asia

Just as more articles are in small and smallest journals than in larger ones, most in fee journals are in lower-cost journals.

Starting Date

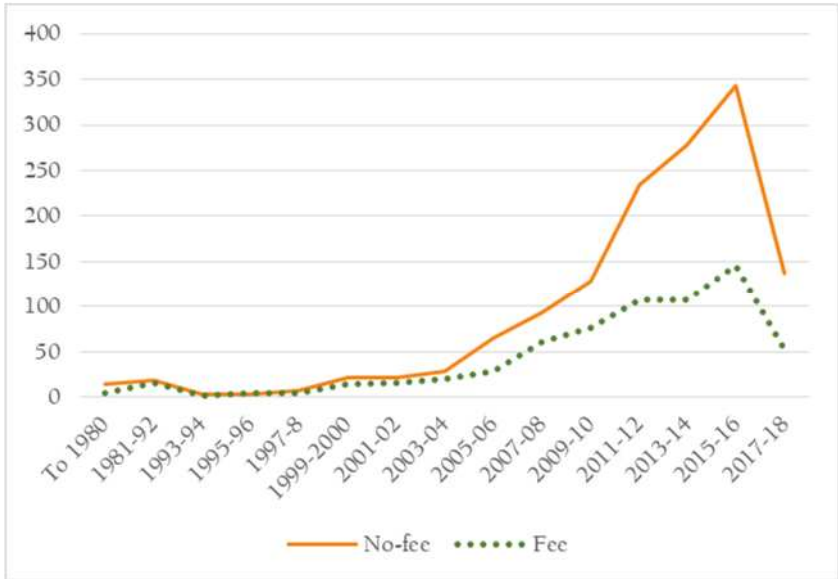


Figure 13.2. Starting date, Asia

Significant growth started in 2003, increased rapidly from 2009 to 2016, and has dropped but not disappeared since.

Revenue

	Articles	Revenue	\$/article
\$1,400+	2,807	\$4,998,090	\$1,781
\$600-\$1,399	2,458	\$2,285,257	\$930
\$200-\$599	10,020	\$3,112,471	\$311
\$0.20-\$199	15,282	\$1,043,104	\$68
No fee	40,511		
Total	71,078	\$11,438,922	\$161

Table 13.5. Revenue, Asia

As is usual, the most expensive journals account for most revenues, although nominally-priced journals publish many more journals.

Publisher Category

Category	Journals	Articles	%No-fee	\$/article
Univ/college	1,488	34,974	59%	\$58
Open Access	256	18,078	54%	\$276
Society/govt	181	7,767	51%	\$188
Traditional	81	6,853	67%	\$344
Miscellaneous	57	3,406	42%	\$183

Table 13.6. Publisher category, Asia

Universities and colleges publish seven out of ten journals and a majority of articles.

Growth and Shrinkage

Change 2017-18	Count	Percent	Cum%
Grew 50%+	219	10.6%	
Grew 25-49.9%	167	8.1%	18.7%
Grew 10-24.99%	223	10.8%	29.5%
Even, \pm 9.99%	774	37.5%	67.0%
Shrank 10-24.99%	267	12.9%	80.0%
Shrank 25-49.99%	201	9.7%	89.7%
Shrank 50%+	212	10.3%	

Table 13.7. Growth and shrinkage, Asia

While there's a very large group of stable journals, shrinkage did slightly exceed growth (33% to 2.5%)

Subject

Subject	Jour.	Art.	%No-fee	\$/article
Medicine	461	30,792	56%	\$239
Education	222	5,114	65%	\$39
Economics	191	3,890	72%	\$27
Engineering	95	3,672	40%	\$242
Agriculture	100	2,686	37%	\$231
Zoology	59	2,616	32%	\$161
Language & Literature	106	2,082	68%	\$30
Technology	53	2,005	69%	\$252
Earth Sciences	46	1,899	64%	\$136
Computer Science	79	1,718	67%	\$25
Biology	51	1,685	38%	\$216
Religion	99	1,528	76%	\$33
Other Sciences	46	1,504	55%	\$77
Ecology	39	1,354	35%	\$113
Law	60	1,036	74%	\$19
Mathematics	47	1,014	66%	\$20
Anthropology	43	924	75%	\$63
Sociology	46	882	74%	\$20
Physics	25	760	48%	\$82
Chemistry	27	689	55%	\$54
Miscellany	27	673	52%	\$26
Political Science	35	642	59%	\$28
Psychology	23	600	80%	\$18
Arts & Architecture	22	386	83%	\$16
Media & Communications	22	353	65%	\$24
Library Science	19	279	97%	\$1
History	11	185	69%	\$16
Philosophy	9	110	50%	\$22

Table 13.8. Subject, Asia

Even medical articles are moderately-priced.

Country of Publication

Country	Journals	Articles	%No-fee	\$/article
Indonesia	1,340	27,425	60%	\$29
India	254	18,624	56%	\$257
China	87	8,589	45%	\$278
South Korea	88	5,199	60%	\$194
Malaysia	62	2,192	54%	\$119
Pakistan	49	2,097	38%	\$178
Taiwan	33	1,700	77%	\$83
Hong Kong	20	1,086	60%	\$436
Japan	26	1,020	30%	\$984
Thailand	27	974	58%	\$81
Bangladesh	19	669	68%	\$30
Nepal	15	452	100%	\$0
Singapore	13	336	79%	\$301
Sri Lanka	13	301	98%	\$2
Philippines	9	197	68%	\$22
Mongolia	4	118	64%	\$27
Kyrgyzstan	3	51	100%	\$0
Viet Nam	1	48	100%	\$0

Table 13.9. Country of publication, Asia

Indonesia excels at small, inexpensive journals, with nearly two-thirds of all *DOAJ*-listed journals in the region but only 39% of the articles. Japan stands out for its high costs per article.

14. Eastern Europe

The fourth largest for journals and articles, with low costs and most articles no-fee. Rich in H&SS, lean in biomed and a bit lean in STEM. After three years of essentially steady publishing, article count declined in 2018.

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	2,032	75,051			\$93	-90%
Fee	418	25,485	34%	-42%	\$273	-83%
No-fee	1,614	49,566	66%	58%		
Biomed	327	16,666	22%	-37%	\$99	-92%
Fee	81	6,269	38%	-46%	\$262	-86%
No-fee	246	10,397	62%	109%		
STEM	697	26,634	35%	-13%	\$148	-86%
Fee	168	9,938	37%	-46%	\$396	-74%
No-fee	529	16,696	63%	101%		
H&SS	1,008	31,751	42%	78%	\$44	-64%
Fee	169	9,278	29%	33%	\$150	-73%
No-fee	839	22,473	71%	-9%		

Table 14.1. Key facts, Eastern Europe

If you're wondering when you'll see positive relative percentages for cost per article: see Chapters 17 and 18.

Articles and Journals

	2018	2017	2016	2015	2014	2013
Journals	1,872	1,952	1,926	1,844	1,703	1,515
%No-fee	79%	79%	80%	80%	80%	80%
Articles	75,051	80,245	80,172	80,351	74,918	66,841
%No-fee	66%	68%	70%	70%	71%	69%

Table 14.2. Articles and journals by year, Eastern Europe

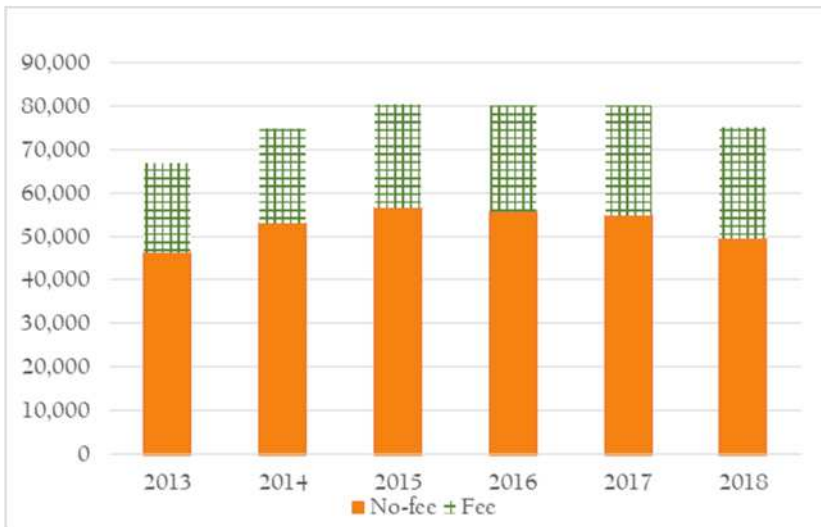


Figure 14.1. Fee and no-fee articles by year Eastern Europe

Article Volume

	Journals	Articles	%No-fee	\$/article
Largest: 600+	6	2,237	35%	\$24
Large: 150-599	116	15,474	40%	\$189
Med.: 60-149	501	29,050	64%	\$101
Small: 20-59	1,038	25,280	84%	\$40
Smallest: 0-19	371	3,010	92%	\$16

Table 14.3. Article volume, Eastern Europe

A reminder: volume categories are based on *peak* volume 2013-2018: each of the six largest journals had 600 or more articles in at least one of those years. The largest journals here are certainly anomalous, not only because of low current article count but also the second-lowest cost per article of any volume level.

Fee Level

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	4	1%	0%	198	1%	0%
\$600-\$1.399	34	8%	2%	3,110	12%	4%
\$200-\$599	113	27%	6%	7,371	29%	10%
\$0.01-\$199	267	64%	13%	14,806	58%	20%
No fee	1,614		79%	49,566		66%

Table 14.4. Fee level, Eastern Europe

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

Revenue

	Articles	Revenue	\$/article
\$1,400+	198	\$333,491	\$1,684
\$600-\$1.399	3,110	\$2,761,771	\$888
\$200-\$599	7,371	\$2,847,560	\$386
\$0.20-\$199	14,806	\$1,025,095	\$69
No fee	49,566		
Total	75,051	\$6,967,917	\$93

Table 14.5. Revenue, Eastern Europe

Very little revenue from expensive journals, most from the two mid-range categories. Note: table moved for page-fitting reasons.

Starting Date

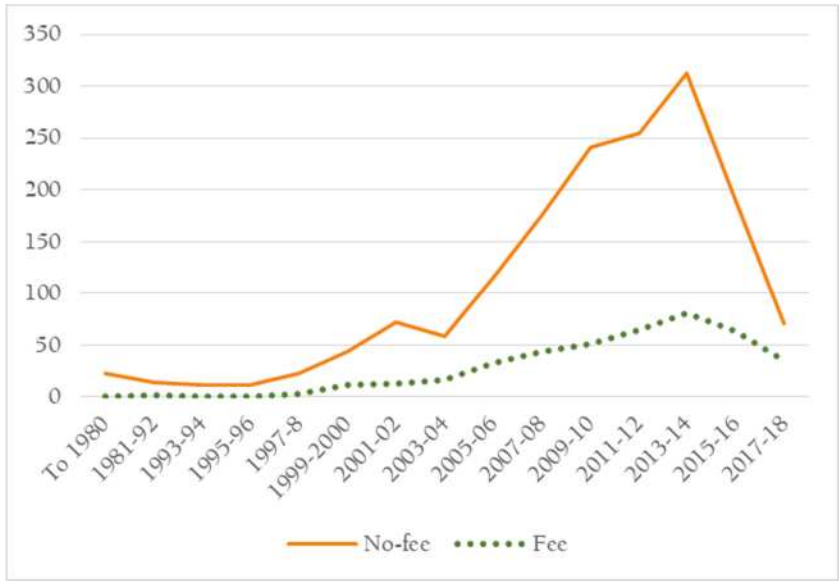


Figure 14.2. Starting date, Eastern Europe

Substantial growth since 2003, with a peak in 2013-2014.

Publisher Category

Category	Journals	Articles	%No-fee	\$/article
Univ/college	1,225	47,660	71%	\$44
Open Access	480	12,671	51%	\$242
Miscellaneous	114	6,392	59%	\$161
Society/govt	172	6,343	71%	\$63
Traditional	41	1,985	53%	\$186

Table 14.6. Publisher category, Eastern Europe

Universities and colleges dominate.

Growth and Shrinkage

Change 2017-18	Count	Percent	Cum%
Grew 50%+	175	8.6%	
Grew 25-49.9%	159	7.8%	16.4%
Grew 10-24.99%	219	10.8%	27.2%
Even, $\pm 9.99\%$	636	31.3%	58.5%
Shrank 10-24.99%	302	14.9%	73.4%
Shrank 25-49.99%	281	13.8%	87.2%
Shrank 50%+	260	12.8%	

Table 14.7. Growth and Shrinkage, Eastern Europe

Considerably more shrinkage than growth (41.5% to 27.2%).

Subject

Subject	Jour.	Art.	%No-fee	\$/article
Medicine	265	13,319	68%	\$101
Economics	228	7,124	58%	\$91
Engineering	116	5,963	54%	\$165
Agriculture	102	4,422	61%	\$146
Language & Literature	131	3,766	79%	\$22
Anthropology	95	3,465	53%	\$49
Biology	62	3,347	42%	\$90
Sociology	79	3,134	58%	\$38
Political Science	84	2,802	84%	\$4
Ecology	62	2,600	37%	\$228
Education	77	2,509	64%	\$59
Earth Sciences	95	2,312	85%	\$65
Computer Science	66	2,300	87%	\$32
Zoology	45	1,967	35%	\$345
Technology	57	1,930	83%	\$33
Mathematics	65	1,775	78%	\$154
Law	54	1,611	92%	\$5
Miscellany	38	1,477	77%	\$29
History	44	1,339	85%	\$39
Arts & Architecture	48	1,313	80%	\$26
Other Sciences	29	1,289	60%	\$76
Chemistry	33	1,259	64%	\$173
Philosophy	40	1,164	98%	\$2
Psychology	32	903	79%	\$25
Physics	27	817	75%	\$193
Religion	18	418	88%	\$70
Library Science	18	383	89%	\$54
Media & Communications	22	343	98%	\$2

Table 14.8. Subject, Eastern Europe

Even medicine is generally low-cost.

Country of Publication

Country	Journals	Articles	%No-fee	\$/article
Russia	290	16,422	85%	\$17
Poland	526	16,251	60%	\$158
Ukraine	185	10,687	46%	\$53
Romania	317	9,208	68%	\$37
Serbia	155	4,635	76%	\$35
Croatia	109	3,132	77%	\$105
Czech Republic	97	2,569	63%	\$129
Bulgaria	52	2,361	29%	\$398
Lithuania	55	1,841	48%	\$263
Slovenia	51	1,365	85%	\$69
Moldova	28	1,033	60%	\$6
Hungary	33	1,032	80%	\$174
Slovakia	43	1,021	72%	\$49
Belarus	9	573	83%	\$25
Macedonia	8	553	14%	\$283
Latvia	11	510	39%	\$595
Bosnia and Herzegovina	20	475	77%	\$97
Montenegro	8	410	76%	\$26
Estonia	18	392	76%	\$133
Cyprus	5	181	41%	\$220
Georgia	3	166	100%	\$0
Kazakhstan	2	95	85%	\$1
Albania	4	94	65%	\$51
Armenia	2	35	100%	\$0
Turkmenistan	1	10	100%	\$0

Table 14.9. Country of publication, Eastern Europe

Latvia and Bulgaria are the only countries with average article costs higher than \$300.

15. Latin America

Second largest number of gold OA journals and third largest number of articles, with two-thirds of the articles from Brazil and 86% no-fee. Strongest in H&SS (more articles than in biomed and STEM combined), with an astonishing 97% of those articles in no-fee journals—but even the worst case, STEM, is 69% no-fee.

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	2,291	84,491			\$45	-95%
Fee	148	11,739	14%	-76%	\$326	-79%
No-fee	2,143	72,752	86%	106%		
Biomed	305	18,125	21%	-40%	\$117	-91%
Fee	43	4,071	22%	-68%	\$521	-72%
No-fee	262	14,054	78%	159%		
STEM	479	19,989	24%	-42%	\$76	-93%
Fee	77	6,284	31%	-54%	\$242	-84%
No-fee	402	13,705	69%	120%		
H&SS	1,507	46,377	55%	131%	\$4	-97%
Fee	28	1,384	3%	-86%	\$132	-76%
No-fee	1,479	44,993	97%	24%		

Table 15.1. Key facts, Latin America

Articles and Journals

	2018	2017	2016	2015	2014	2013
Journals	2,168	2,245	2,242	2,169	2,023	1,912
%No-fee	94%	94%	94%	94%	93%	93%
Articles	84,491	85,168	80,664	75,145	69,783	64,079
%No-fee	86%	86%	86%	86%	84%	83%

Table 15.2. Articles and journals by year, Latin America

fter years of 6% to 9% annual growth, 2018 is down less than 1%.

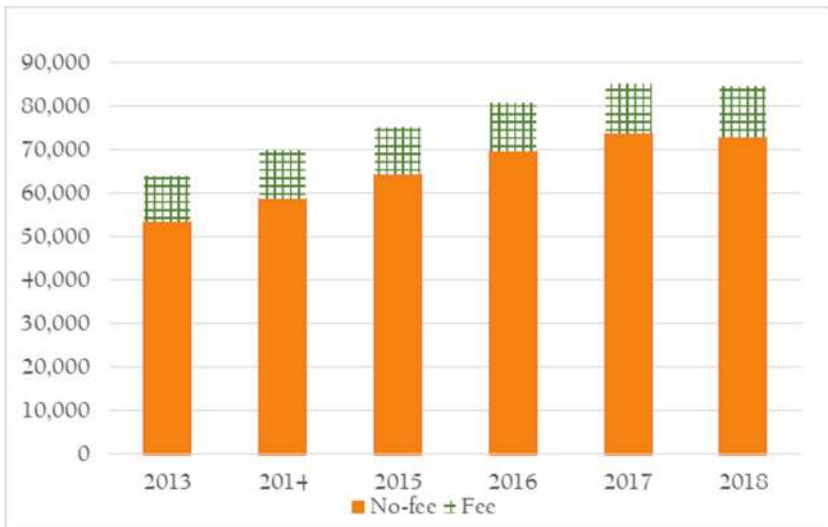


Figure 15.1. Fee and no-fee articles by year, Latin America

Article Volume

	Journals	Articles	%No-fee	\$/article
Large: 150-599	81	13,500	58%	\$173
Med.: 60-149	443	29,088	83%	\$44
Small: 20-59	1,430	38,307	97%	\$5
Smallest: 0-19	337	3,596	98%	\$3

Table 15.3. Article volume, Latin America

No, there's no formatting error: there aren't any Latin America OA journals with 600 or more articles per year.

Fee Level

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	2	1%	0%	345	3%	0%
\$600-\$1.399	12	8%	1%	1,069	9%	1%
\$200-\$599	53	36%	2%	5,441	46%	6%
\$0.01-\$199	81	55%	4%	4,884	42%	6%
No fee	2,143		94%	72,752		86%

Table 15.4. Fee level, Latin America

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

Starting Date



Figure 15.2. Starting date, Latin America

Always strong, with a broad peak in 2009-2014.

Revenue

	Articles	Revenue	\$/article
\$1,400+	345	\$536,700	\$1,556
\$600-\$1.399	1,069	\$891,144	\$834
\$200-\$599	5,441	\$1,970,271	\$362
\$0.20-\$199	4,884	\$428,365	\$88
No fee	72,752		
Total	84,491	\$3,826,481	\$45

Table 15.5. Revenue, Latin America

Publisher Category

Category	Journals	Articles	%No-fee	\$/article
Univ/college	1,956	67,061	90%	\$31
Society/govt	260	14,632	71%	\$112
Miscellaneous	57	2,091	92%	\$27
Open Access	14	485	42%	\$84
Traditional	4	222	100%	\$0

Table 15.6. Publisher category, Latin America

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

Growth and Shrinkage

Change 2017-18	Count	Percent	Cum%
Grew 50%+	253	11.0%	
Grew 25-49.9%	232	10.1%	21.2%
Grew 10-24.99%	268	11.7%	32.9%
Even, \pm 9.99%	755	33.0%	65.8%
Shrank 10-24.99%	304	13.3%	79.1%
Shrank 25-49.99%	246	10.7%	89.8%
Shrank 50%+	233	10.2%	

Table 15.7. Growth and shrinkage, Latin America

A large stable section, and barely more shrinkage than growth.

Country of Publication

Country	Journals	Articles	%No-fee	\$/article
Brazil	1,244	56,512	82%	\$59
Colombia	318	7,936	98%	\$2
Argentina	201	4,295	93%	\$31
Mexico	120	4,049	82%	\$30
Cuba	79	3,682	97%	\$2
Chile	107	2,594	89%	\$62
Ecuador	43	1,437	100%	\$0
Costa Rica	53	1,367	100%	\$0
Peru	46	1,225	95%	\$13
Venezuela	29	508	67%	\$68
Uruguay	18	361	100%	\$0
Paraguay	8	184	100%	\$0
Nicaragua	6	77	100%	\$0
Bolivia	5	71	100%	\$0
El Salvador	3	49	100%	\$0
Barbados	1	43	100%	\$0
Guatemala	3	43	44%	\$27
Puerto Rico	4	30	100%	\$0
Jamaica	1	13	0%	\$1,000
Guam	1	8	0%	\$350
Bahamas	1	7	100%	\$0

Table 15.8. Country of Publication, Latin America

Brazil dominates; Colombia, Cuba, Ecuador, Costa Rica and Peru (among countries with more than 1,000 articles) all have nearly all no-fee publishing. (Of course, Ecuador, Costa Rica, and eight countries with fewer articles have *no* fee publishing.)

Subject

Subject	Jour.	Art.	%No-fee	\$/article
Medicine	277	16,387	81%	\$89
Education	210	9,197	96%	\$5
Agriculture	103	5,623	47%	\$120
Language & Literature	150	5,182	99%	\$1
Sociology	162	4,728	94%	\$10
Economics	161	3,639	98%	\$6
Anthropology	117	3,475	98%	\$4
Law	141	3,405	100%	\$0
Miscellany	81	3,153	86%	\$5
History	100	2,752	100%	\$0
Earth Sciences	80	2,661	86%	\$40
Engineering	70	2,434	97%	\$5
Ecology	60	2,188	74%	\$22
Zoology	43	2,126	50%	\$155
Media & Communications	66	2,036	100%	\$1
Political Science	79	2,010	99%	\$0
Arts & Architecture	67	1,971	100%	\$0
Psychology	63	1,851	99%	\$0
Biology	28	1,738	48%	\$383
Other Sciences	50	1,693	88%	\$7
Philosophy	56	1,457	95%	\$21
Technology	27	1,378	78%	\$46
Library Science	30	816	100%	\$0
Religion	24	705	96%	\$9
Chemistry	8	642	20%	\$316
Mathematics	17	548	89%	\$23
Physics	9	431	61%	\$147
Computer Science	12	265	100%	\$0

Table 15.9. Subject, Latin America

16. Middle East

The second-smallest region for both journals and articles. Low cost, 71% no-fee, with no-fee articles growing every year.

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	897	38,880			\$59	-93%
Fee	157	11,099	29%	-51%	\$208	-87%
No-fee	740	27,781	71%	71%		
Biomed	349	17,003	44%	23%	\$41	-97%
Fee	43	3,330	20%	-72%	\$211	-89%
No-fee	306	13,673	80%	169%		
STEM	252	10,715	28%	-32%	\$79	-92%
Fee	55	3,109	29%	-58%	\$274	-82%
No-fee	197	7,606	71%	128%		
H&SS	296	11,162	29%	21%	\$68	-45%
Fee	59	4,660	42%	89%	\$162	-71%
No-fee	237	6,502	58%	-25%		

Table 16.1. Key facts, Middle East

Articles and Journals

	2018	2017	2016	2015	2014	2013
Journals	846	874	848	773	693	576
%No-fee	82%	82%	82%	82%	81%	80%
Articles	38,880	36,571	36,099	31,981	28,427	23,424
%No-fee	71%	72%	69%	69%	71%	70%

Table 16.2. Articles and journals by year, Middle East

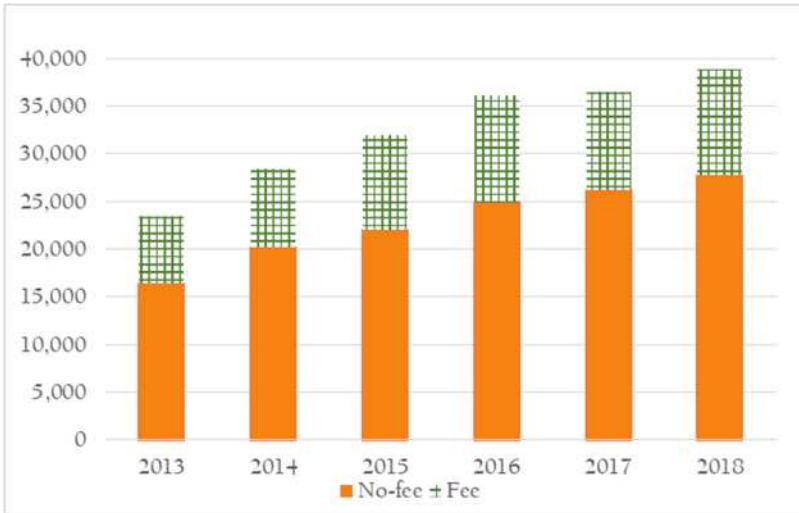


Figure 16.1. Fee and no-fee articles by year, Middle East

Article Volume

	Journals	Articles	%No-fee	\$/article
Largest: 600+	4	1,850	3%	\$189
Large: 150-599	50	9,027	51%	\$135
Med.: 60-149	173	11,983	79%	\$38
Small: 20-59	541	14,541	85%	\$18
Smallest: 0-19	129	1,479	89%	\$18

Table 16.3. Article volume, Middle East

Fee Level

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	3	2%	0%	109	1%	0%
\$600-\$1,399	7	4%	1%	1,035	9%	3%
\$200-\$599	30	19%	3%	2,317	21%	6%
\$0.01-\$199	117	75%	13%	7,638	69%	20%
No fee	740		82%	27,781		71%

Table 16.4. Fee level, Middle East

Very few very large or expensive journals.

Starting Date



Figure 16.2. Starting date, Middle East

Slow to start and until 1999 or so, peaking in 2013-14.

Revenue

	Articles	Revenue	\$/article
\$1,400+	109	\$200,410	\$1,839
\$600-\$1,399	1,035	\$736,383	\$711
\$200-\$599	2,317	\$758,718	\$327
\$0.20-\$199	7,638	\$614,893	\$81
No fee	27,781		
Total	38,880	\$2,310,404	\$59

Table 16.5. Revenue, Middle East

Publisher Category

Category	Journals	Articles	%No-fee	\$/article
Univ/college	616	23,409	76%	\$34
Traditional	62	5,979	76%	\$93
Open Access	96	3,935	71%	\$110
Society/govt	70	2,866	56%	\$104
Miscellaneous	53	2,691	37%	\$85

Table 16.6. Publisher category, Middle East

Predominantly universities and colleges, and even OA publishers offer mostly no-fee articles.

Growth and Shrinkage

Change 2017-18	Count	Percent	Cum%
Grew 50%+	145	16.2%	
Grew 25-49.9%	79	8.8%	25.0%
Grew 10-24.99%	102	11.4%	36.3%
Even, \pm 9.99%	277	30.9%	67.2%
Shrank 10-24.99%	106	11.8%	79.0%
Shrank 25-49.99%	100	11.1%	90.2%
Shrank 50%+	88	9.8%	

Table 16.7. Growth and shrinkage, Middle East

Slightly more growth than shrinkage and a strong stable center.

Subject

Subject	Jour.	Art.	%No-fee	\$/article
Agriculture	45	1,863	58%	\$21
Anthropology	21	608	72%	\$261
Arts & Architecture	10	830	23%	\$72
Biology	24	1,039	88%	\$14
Chemistry	20	703	90%	\$25
Computer Science	14	429	87%	\$62
Earth Sciences	26	969	96%	\$1
Ecology	20	519	76%	\$16
Economics	59	2,173	37%	\$145
Education	58	1,931	88%	\$19
Engineering	44	2,601	61%	\$192
History	12	265	76%	\$15
Language & Literature	24	1,908	30%	\$68
Law	10	246	85%	\$9
Library Science	6	177	100%	\$0
Mathematics	20	498	96%	\$7
Media & Communications	5	110	75%	\$17
Medicine	325	15,964	80%	\$43
Miscellany	7	276	98%	\$1
Other Sciences	22	1,349	86%	\$22
Philosophy	5	136	74%	\$14
Physics	5	189	93%	\$8
Political Science	12	411	100%	\$0
Psychology	14	302	65%	\$21
Religion	19	511	100%	\$0
Sociology	34	1,278	50%	\$30
Technology	10	385	77%	\$30
Zoology	26	1,210	42%	\$176

Table 17.8. Subject, Middle East

Very little medical publishing, with agriculture standing out. Only anthropology averages more than \$200 per article.

Country of Publication

Country	Journals	Articles	%No-fee	\$/article
Iran	432	15,820	74%	\$42
Turkey	332	15,183	73%	\$46
Egypt	51	3,338	58%	\$205
Saudi Arabia	18	2,208	94%	\$18
Iraq	23	864	26%	\$83
United Arab Emirates	15	659	9%	\$210
Oman	7	302	100%	\$0
Jordan	5	233	64%	\$49
Yemen	5	110	80%	\$30
Israel	2	57	100%	\$0
Kuwait	1	52	100%	\$0
Qatar	4	38	97%	\$26
Lebanon	1	16	100%	\$0
Palestine	1	0		

Table 16.9. Country of publication, Middle East

Iran and Turkey have each added more than a hundred *DOAJ* journals in 2018. Abandoning the APCLand/OAWorld split didn't result in a huge increase for Egypt because Hindawi changed its journals to United Kingdom during 2018. Palestine does have one *DOAJ*-listed journal, but it hasn't published any articles since 2015. Note that only Egypt and United Arab Emirates have three-digit average cost per article, each just over \$200—and the latter has by far the lowest no-fee percentage.

17. Pacific/English

The “region” of Australia, Canada (with apologies to Québec), New Zealand and the United States. Second most articles, third *fewest* journals, the lowest no-fee percentage and one of two four-digit average costs.

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	917	92,102			\$1,371	50%
Fee	310	71,558	78%	34%	\$1,764	12%
No-fee	607	20,544	22%	-47%		
Biomed	294	35,575	39%	9%	\$1,574	21%
Fee	196	28,426	80%	14%	\$1,969	7%
No-fee	98	7,149	20%	-33%		
STEM	160	44,969	49%	20%	\$1,541	48%
Fee	79	41,495	92%	34%	\$1,670	11%
No-fee	81	3,474	8%	-75%		
H&SS	463	11,558	13%	-47%	\$82	-33%
Fee	35	1,637	14%	-36%	\$577	3%
No-fee	428	9,921	86%	10%		

Table 17.1. Key facts, Pacific/English

Light on H&SS, rich in STEM, and expensive except for H&SS. A full 50% more expensive per article than OA as a whole, partly because there’s so little no-fee publishing in biomed and STEM.

Articles and Journals

	2018	2017	2016	2015	2014	2013
Journals	859	861	817	762	691	614
%No-fee	65%	66%	68%	69%	71%	75%
Articles	92,102	83,101	77,685	72,183	66,769	60,260
%No-fee	22%	22%	21%	20%	20%	20%

Table 17.2. Articles and journals by year, Pacific/English

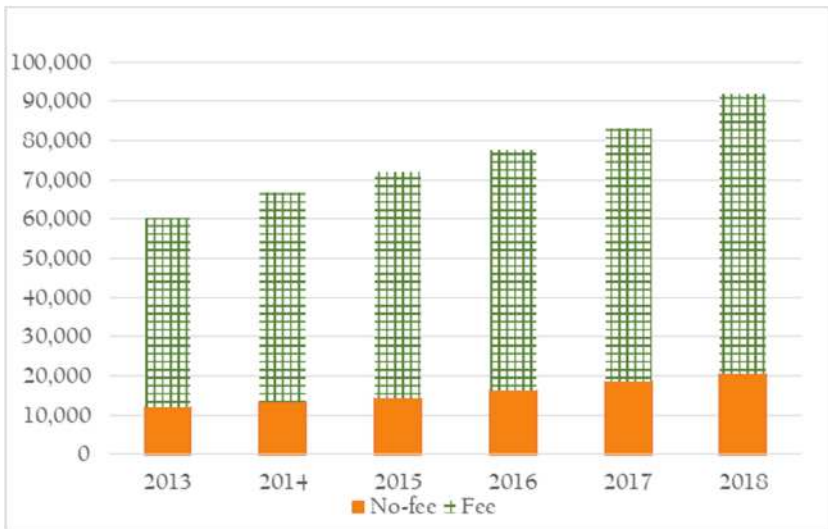


Figure 17.1. Fee and no-fee articles by year, Pacific/English

Article Volume

	Journals	Articles	%No-fee	\$/article
Largest: 600+	21	52,421	8%	\$1,581
Large: 150-599	71	16,391	19%	\$1,664
Med.: 60-149	152	10,965	39%	\$1,025
Small: 20-59	406	10,204	68%	\$446
Smallest: 0-19	267	2,121	84%	\$149

Table 17.3. Article volume, Pacific/English

More than half of all articles are in the handful of very large journals—but the highest cost per article is in large but not largest journals.

Fee Level

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	164	53%	18%	56,370	79%	61%
\$600-\$1.399	58	19%	6%	9,747	14%	11%
\$200-\$599	68	22%	7%	4,777	7%	5%
\$0.01-\$199	20	6%	2%	664	1%	1%
No fee	607		66%	20,544		22%

Table 17.4. Fee level, Pacific/English

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

Revenue

	Articles	Revenue	\$/article
\$1,400+	56,370	\$114,146,401	\$2,025
\$600-\$1.399	9,747	\$9,997,326	\$1,026
\$200-\$599	4,777	\$2,011,176	\$421
\$0.20-\$199	664	\$80,730	\$122
No fee	20,544		
Total	92,102	\$126,235,632	\$1,371

Table 17.5. Revenue, Pacific/English

This table speaks for itself, most loudly with \$2,025.

Starting Date



Figure 17.2. Starting date, Pacific/English

No-fee OA began early in Pacific/English, started growing in 1999/2000, and grew rapidly to the peak years of 2011-2014, whereas fee journals really didn't mean much until 2003, with that sharp growth spurt in 2013-2014.

Publisher Category

Category	Journals	Articles	%No-fee	\$/article
Open Access	159	36,771	7%	\$1,603
Society/govt	162	24,822	17%	\$1,623
Traditional	148	14,236	4%	\$1,643
Univ/college	387	10,860	75%	\$322
Miscellaneous	61	5,413	92%	\$23

Table 17.6. Publisher category, Pacific/English

Relatively little university publishing, lots of OA publishers, almost exclusively fee for OA, traditional and—oddy—society journals.

Growth and Shrinkage

Change 2017-18	Count	Percent	Cum%
Grew 50%+	162	17.7%	
Grew 25-49.9%	103	11.2%	28.9%
Grew 10-24.99%	93	10.1%	39.0%
Even, $\pm 9.99\%$	194	21.2%	60.2%
Shrank 10-24.99%	106	11.6%	71.8%
Shrank 25-49.99%	136	14.8%	86.6%
Shrank 50%+	123	13.4%	

Table 17.7. Growth and shrinkage, Pacific/English

Shrinkage *barely* exceeds growth, 39.8% to 39.2%. More very fast growth than very fast decline.

Country of Publication

Country	Journals	Articles	%No-fee	\$/article
United States	663	82,739	19%	\$1,447
Canada	149	4,925	62%	\$693
Australia	92	4,236	46%	\$735
New Zealand	13	202	100%	\$0

Table 17.8. Country of publication, Pacific/English

This pseudo-region is three or four very different stories: one very large set of journals with 81% fee-based articles at high prices; two modest sets at fairly typical prices with either a slight majority of fee articles or a significant majority of no-fee articles—and New Zealand, with very little publishing but no fees at all.

Subject

As usual, medicine is most prevalent—but the next five stand out for having essentially *no* no-fee articles (0% for other sciences to 4% for physics. Those five also have the highest average costs.

Subject	Jour.	Art.	%No-fee	\$/article
Medicine	250	28,007	25%	\$1,459
Other Sciences	12	21,710	0%	\$1,690
Biology	44	7,568	3%	\$1,999
Engineering	14	7,093	2%	\$1,713
Physics	13	5,698	4%	\$2,222
Computer Science	20	2,785	25%	\$578
Chemistry	7	2,437	12%	\$728
Education	88	2,170	88%	\$50
Ecology	29	1,878	23%	\$1,004
Language & Literature	66	1,685	79%	\$51
Sociology	50	1,470	87%	\$146
Mathematics	21	1,145	98%	\$19
History	25	1,091	100%	\$0
Anthropology	34	779	90%	\$10
Agriculture	14	744	15%	\$1,404
Technology	12	688	29%	\$781
Economics	32	680	79%	\$39
Library Science	29	646	100%	\$0
Zoology	7	552	11%	\$1,302
Philosophy	25	544	100%	\$0
Arts & Architecture	23	467	72%	\$194
Miscellany	14	462	43%	\$224
Media & Communications	18	442	100%	\$0
Psychology	16	407	43%	\$759
Political Science	18	391	100%	\$0
Earth Sciences	11	239	45%	\$927
Law	15	171	100%	\$0
Religion	10	153	100%	\$0

Table 17.9. Subject, Pacific/English

Then there are history, library science, philosophy, media & communications, law and religion: no-fee standouts in a fee-heavy region.

18. Western Europe

The most journals, by far the most articles, and the highest cost per article: that's Western Europe, especially the United Kingdom and Switzerland, both of which publish more articles than any other *region*, including Pacific/English. (Without those two, Western Europe would still be the largest region, but only by about 6,000 articles in 2018.)

	Jrn.	Art.	Art%	Rel%	\$/Art	Rel%
All	3,822	342,951			\$1,449	59%
Fee	1,737	259,141	76%	30%	\$1,918	22%
No-fee	2,085	83,810	24%	-42%		
Biomed	1,238	130,570	38%	7%	\$1,983	53%
Fee	973	118,566	91%	30%	\$2,184	18%
No-fee	265	12,004	9%	-69%		
STEM	923	164,852	48%	18%	\$1,346	30%
Fee	563	127,612	77%	12%	\$1,739	15%
No-fee	360	37,240	23%	-28%		
H&SS	1,661	47,529	14%	-42%	\$341	177%
Fee	201	12,963	27%	24%	\$1,249	124%
No-fee	1,460	34,566	73%	-7%		

Table 18.1. Key facts, Western Europe

Very lean (and extremely expensive) in H&SS, somewhat rich in STEM.

Articles and Journals

	2018	2017	2016	2015	2014	2013
Journals	3,612	3,665	3,536	3,331	3,063	2,712
%No-fee	53%	54%	54%	55%	55%	56%
Articles	342,951	286,458	242,950	213,946	191,003	151,649
%No-fee	24%	26%	28%	27%	28%	30%

Table 18.2. Articles and journals by year, Western Europe

Rapid growth every year, from 12% to 25%.

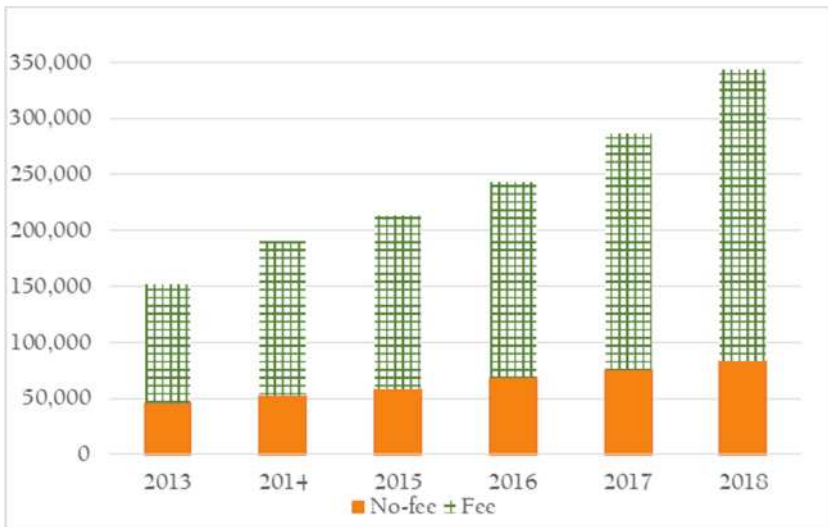


Figure 18.1. Fee and no-fee articles by year, Western Europe

No-fee publishing has grown each year, but slowly—whereas fee articles have grown rapidly.

Article Volume

	Journals	Articles	%No-fee	\$/article
Largest: 600+	103	159,979	16%	\$1,810
Large: 150-599	340	78,672	11%	\$1,671
Med.: 60-149	696	50,701	30%	\$977
Small: 20-59	1,834	46,390	62%	\$516
Smallest: 0-19	849	7,209	73%	\$349

Table 18.3. Article volume, Western Europe

Fee Level

	Jour.	%Fee	%All	Art.	%Fee	%All
\$1,400+	892	51%	23%	199,684	77%	58%
\$600-\$1.399	521	30%	14%	38,394	15%	11%
\$200-\$599	254	15%	7%	17,032	7%	5%
\$0.01-\$199	70	4%	2%	4,031	2%	1%
No fee	2,085		55%	83,810		24%

Table 18.4. Fee level, Western Europe

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

Revenue

	Articles	Revenue	\$/article
\$1,400+	199,684	\$451,155,104	\$2,259
\$600-\$1.399	38,394	\$38,197,692	\$995
\$200-\$599	17,032	\$7,349,639	\$432
\$0.20-\$199	4,031	\$341,755	\$85
No fee	83,810		
Total	342,951	\$497,044,191	\$1,449

Table 18.5. Revenue, Western Europe

Nearly half a billion dollars in potential revenue, almost 90% of it in the most expensive journals, with an extremely high average cost.

Starting Date



Figure 18.2. Starting date, Western Europe

A fair amount of early no-fee OA activity, growing fairly smoothly to a broad peak 2011-2014—while fee publishing reached a sharper peak in 2013-2014, with most growth after 2004.

Publisher Category

Category	Journals	Articles	%No-fee	\$/article
Open Access	1,397	183,410	9%	\$1,704
Traditional	676	94,983	30%	\$1,600
Univ/college	1,299	41,883	68%	\$453
Society/govt	285	16,642	47%	\$529
Miscellaneous	165	6,033	56%	\$790

Table 18.6. Publisher category, Western Europe

OA publishers (with almost no no-fee articles) and traditional publishers (with somewhat more) dominate, with roughly equal average costs and with universities a distant third.

Growth and Shrinkage

Change 2017-18	Count	Percent	Cum%
Grew 50%+	812	21.2%	
Grew 25-49.9%	438	11.5%	32.7%
Grew 10-24.99%	402	10.5%	43.2%
Even, ±9.99%	890	23.3%	66.5%
Shrank 10-24.99%	433	11.3%	77.8%
Shrank 25-49.99%	446	11.7%	89.5%
Shrank 50%+	401	10.5%	

Table 18.7. Growth and shrinkage, Western Europe

Substantially more growth than shrinkage (43.2% to 33.5%).

Country of Publication

Two giants of essentially all-fee OA at the top, both with very high average costs—but then come France and Spain, with low costs and predominantly no-fee OA publishing.

Country	Journals	Articles	%No-fee	\$/article
United Kingdom	1,438	146,986	6%	\$1,934
Switzerland	290	97,620	5%	\$1,803
France	206	22,697	98%	\$24
Spain	674	19,194	90%	\$68
Germany	256	18,887	53%	\$468
Netherlands	213	17,093	37%	\$1,284
Italy	334	9,628	78%	\$158
Portugal	87	2,870	72%	\$140
Greece	32	1,606	66%	\$125
Norway	89	1,437	91%	\$92
Sweden	38	1,204	55%	\$784
Austria	49	1,051	56%	\$241
Finland	24	746	78%	\$194
Belgium	35	594	85%	\$87
Ireland	16	501	46%	\$907
Denmark	24	347	91%	\$26
Iceland	6	291	100%	\$0
Azerbaijan	6	132	10%	\$45
Luxembourg	3	38	100%	\$0
Malta	2	29	100%	\$0

Table 18.8. Country of publication, Western Europe

Subject

Three subjects with very little no-fee publishing and around \$2,000 average cost top the list: medicine (as usual), other sciences/megajournals, and biology. Looking further down the list, psychology stands out for its high average cost; history and library science for single-digit average costs. Only three STEM fields average less than \$1,000 per article: technology, earth sciences and computer science. Other than psychology, no H&SS subject tops the \$400 mark.

Subject	Jour.	Art.	%No-fee	\$/article
Medicine	1,054	103,152	11%	\$1,900
Other Sciences	51	33,724	6%	\$2,230
Biology	184	27,418	4%	\$2,298
Chemistry	58	21,633	10%	\$1,295
Physics	76	21,022	37%	\$1,013
Ecology	96	20,970	24%	\$1,200
Technology	69	19,165	61%	\$652
Earth Sciences	149	12,305	29%	\$960
Agriculture	96	10,385	14%	\$1,629
Engineering	82	10,108	9%	\$1,387
Computer Science	101	6,016	13%	\$855
Mathematics	69	5,620	13%	\$1,369
Sociology	150	5,505	63%	\$371
Language & Literature	276	5,318	91%	\$39
Education	177	4,825	75%	\$195
Anthropology	178	4,573	81%	\$156
Psychology	60	4,161	18%	\$2,081
Zoology	76	3,904	25%	\$1,055
Arts & Architecture	144	3,700	67%	\$293
History	130	2,925	98%	\$2
Media & Communications	87	2,786	83%	\$104
Miscellany	39	2,687	67%	\$229
Economics	113	2,585	56%	\$317
Law	78	2,302	90%	\$58
Political Science	86	1,985	91%	\$80
Philosophy	72	1,750	93%	\$126
Religion	30	1,380	50%	\$212
Library Science	41	1,047	98%	\$6

Table 18.9. Subject, Western Europe

Appendix A. Methods, Changes and Caveats

The Investigation

This research began with the master dataset prepared for *GOAJ3: Gold Open Access Journals 2012-2017*, but proceeded somewhat differently than last year. I downloaded *DOAJ* metadata on December 18, 2018 in order to allow time to test matching techniques and other issues—and, in the process, determined that it made sense to build the base spreadsheet, then add and delete rows as needed for adds and deletions through midnight, December 31, 2018 or shortly thereafter.

The 2017 dataset included 10,707 journals. The December 18, 2018 download consisted of 12,378 records (12,379 including one test record). After trying a number of matching options, I proceeded as follows:

- The best and most unique match appeared to be normalized URL (that is, stripped of `http://` or `https://`) followed by start date—but even here, it was necessary to disambiguate a few odd cases. That done, 9,450 rows matched in both spreadsheets. Of those, 8,240 had the same title, publisher and country; 895 had the same title and country, but with different publisher names (including all the changes from BioMed Central to BMC and DeGruyter's spinoff of Sciendo); 267 had the same title but changed both publisher and country; and 48 had different titles and possibly other changes.
- Why didn't I use ISSNs? Other than the fact that I hadn't stored them previously, they're not universal: in the December 18, 2018 *DOAJ* metadata, 7,558 rows included print ISSNs and 10,728 included e-ISSNs.

- Other matching techniques, including partial-match manual inspection, yielded another 641 cases where the two spreadsheets clearly had the same journal—including eight date changes, 141 publisher changes, 66 country changes and several hundred URL changes. The total at this point: 10,091 matches, with 614 remaining unmatched 2017 rows and 2,287 unmatched 2018 rows.
- Checking *DOAJ* adds and removes showed 2,272 additional journals for 2018. That suggests a very small number of 2018 changes that I couldn't match—around 15. That only meant redoing pre-2018 article counts for those 15 journals.
- Of the unmatched 2017 journals, 252 were removed by *DOAJ*; 128 represent ISRN pieces; and 233 are unaccounted for.
- The base dataset for 2018 was 12,378 journals as of December 18, 2018. I was able to take several days to assign *GOAJ* subjects and add regions to countries for added journals and do a number of consistency checks. I was also able to refine publisher category assignments, dealing with changes in publisher and searching for most “miscellaneous” publishers with one or two journals, changing them to one of the four meaningful categories where appropriate. (Where the name of the journal and publisher are identical, they were assigned “o”—open—as a publisher category.) This moved more than half of the “miscellaneous” journals to some meaningful category, most commonly “u,”
- Shortly after midnight UCT on January 1, 2019 (that is, late in the afternoon on December 31, 2018 in California), I downloaded the *DOAJ* metadata once more, as well as the deletions-and-additions data¹. Adding and subtracting as appropriate (nine reported deletions, 46 new rows), the final count was 12,415 journals.
- The first round of testing, with the spreadsheet arranged by publisher and journal, began January 2, 2019 and was completed on March 22, 2019. During the course of testing, a few duplicates

¹ Technically, that's a lie. Observing in downloaded data that no journals have been added between 10 p.m. and midnight on December 31 (not unreasonably!), I actually downloaded the metadata at 10:31 pm, December 31, 2018. A recheck shows that no journals were missed as a result.

turned up—perhaps three or four accidental duplications and a few others where the same journal appears with titles in two different languages. These are coded “XD,” as are many more journals that either changed titles before 2013 or ceased publishing before 2013.

- Journals with fees were rechecked between March 27 and April 2, 2019, to assure more consistent conversion rates for fees not stated in US Dollars. Exceptions are two journals coded XM or XX in the first pass, that could be analyzed the second time around, and that have currencies other than the 22 most commonly used by DOAJ journals; those used rates as of April 15-16, 2019.
- The second pass, for 1,143 journals that seemed likely to have additional articles for 2018, began April 2, 2019 and was completed around April 12; a “prepass” of XX and XM journals took place April 13-14, 2019. I rechecked XX and XM journals a final time on April 15-17, 2019. Thanks to the good work of DOAJ staff and the journal publishers they contacted, *most* of the problematic journals were now OK, leaving only 17 XM (malware) cases and 100 XX (unreachable/unworkable) cases, in addition to eight XN (not OA) journals and 110 XD (dead or duplicate). These are discussed further in Chapter 2.
- That leaves 12,180 journals that published at least one article between 2013 and 2018 and were accessible during the testing period, January 2, 2019 to April 17, 2019.

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 have 11 journals marked as approximate counts, but only eight for 2018). I’m certain that some manual counts are off by one or two.

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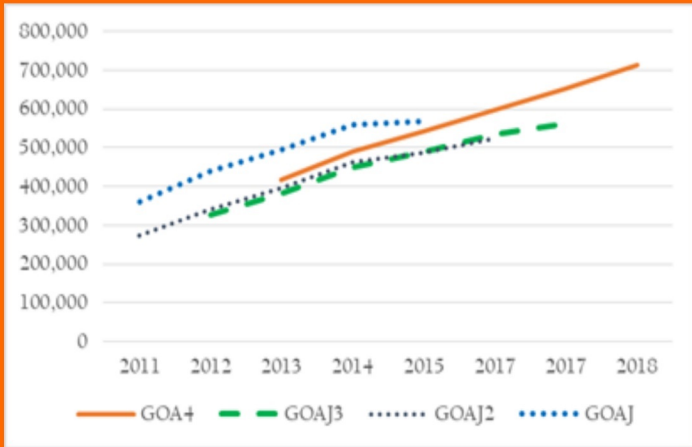
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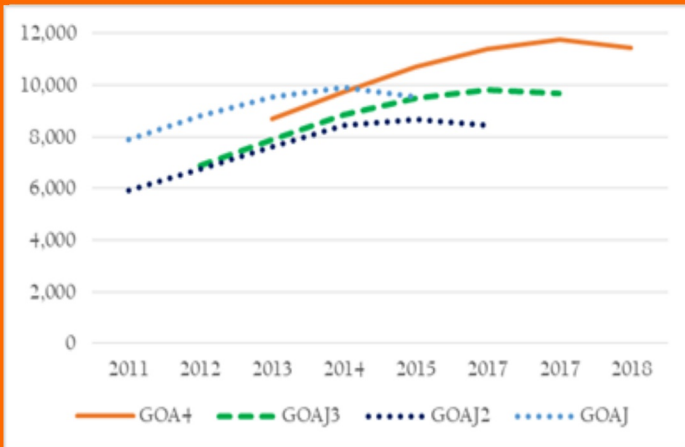
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Articles by Year



Active Journals by Year