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Mind the Gap: Understanding Coverage Breaks of Newly-Launched Engineering and Computer Science Journals in Core Databases

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Abstract

Journal coverage is an important factor to consider when evaluating a database. In this study, we counted the number of articles (including early access articles) in newly-launched journals (2018-2022) from two major association publishers in engineering and computer science: the Institute of Electrical and Electronics Engineers (IEEE) and the Association for Computing Machinery (ACM). We then compared these numbers with the number of articles from these journals in Web of Science (WOS) Core Collection, Scopus, and Google Scholar (GS). Results indicated that GS had higher percentages for coverage for all the journals that were assessed and outperformed WOS and Scopus in terms of how fast newly-launched journals were indexed. Findings from this study will help librarians evaluate each database in reference, instruction, and collection development.

Keywords: Engineering, Computer science, IEEE, ACM, Web of Science, Scopus, Google Scholar, Coverage, Indexing

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Introduction

Journal coverage is an important factor to consider when evaluating a database, along with other criteria such as user interface, cost, and subscription model (rental or ownership) (Brown, 2021). It is vital for researchers to be able to find the most up-to-date studies when searching in databases and it is important that libraries can provide access to them. Web of Science (WOS) and Scopus are two widely-used multidisciplinary databases in reference and instruction. WOS Core Collection is a citation-based database that indexes more than 21,858 journals, books, and conference proceedings, covering the sciences and social sciences, as well as some publications in the arts and humanities (Clarivate Analytics, 2023a). Scopus indexes more than 25,100 titles from over 5,000 international publishers, including "articles-in-press" from more than 5,500 journals (Elsevier, 2023a).

WOS Core Collection and Scopus have selection processes for new titles that require time. Scopus's independent review board evaluates new journals based on five criteria: journal policy, content, journal standing, publishing regularity, and online availability (Elsevier, 2023b). WOS Core Collection's journal selection process uses 24 "quality criteria" and four "impact criteria" (Clarivate Analytics, 2023b).

Google Scholar (GS) has also become an essential tool for reference services and teaching. A longitudinal study of OhioLINK consortium libraries and librarians revealed that by 2014 most librarians had accepted GS as a research database, and by 2019 60% of the libraries were providing a GS link on their websites (Luftig & Plungis, 2020). Another study compared users' perceptions of GS and library discovery tools, and reported that users liked GS because of its "ease of use, system quality, and satisfaction" (Oh & Colón-Aguirre, 2019, p. 883). Alotaibi and Johnson (2020) surveyed 200 international graduate students studying in the UK. Their findings revealed that students liked GS because they had confidence in their ability to find the information they needed with the search engine. Another study surveyed 119 engineering faculty and found out that faculty tended to use Google and GS first instead of library databases (Zhang, 2015).

Given the challenges of budget cuts and database price inflation, some libraries have been exploring the possibility of replacing expensive subscription-based databases with GS, but it is difficult to assess its contents. For example, it does not provide a list of journals (Brown, 2017). There has been research to assess the journal coverage of this search engine. One study used three empirical methods and estimated the size of GS to be approximately 160 million-165 million documents (Orduna-Malea et al., 2015). A more recent study estimated that GS contained 389 million records (Gusenbauer, 2019).

Based on the above research on the growth in STEM-focused multidisciplinary databases and the increasing popularity of GS, we selected WOS Core Collection, Scopus and GS for this study of engineering and computer science journal coverage. These are core engineering or computer science resources that were available through our institution. Some widely-used resources such as Compendex and Inspec were not included because our institution did not have subscriptions to these. EBSCO's Academic Search Complete (ASC) is a commonly-used reference resource at our library and we were curious about its coverage of new Institute of Electrical and Electronics Engineers (IEEE) and Association for Computing Machinery (ACM) journals. However, a review of its title list confirmed that ASC discontinued its coverage of these publishers in 2013.

Literature Review

There has been some research to compare the coverage of WOS Core Collection, Scopus, and GS. Halevi et al. (2017) compared GS's coverage of 91 articles published from 2005 to 2016 with various databases such as WOS and Scopus. They concluded that GS demonstrated a higher rate of coverage of arts and humanities, social sciences, engineering and computer science, and non-English articles. The reason behind the advantage of GS was that some databases such as WOS and Scopus were highly selective and demonstrated bias toward articles in English and journal articles as a document type. Halevi concluded that GS was a legitimate tool for information discovery and citation tracking but should not be used as the single tool for scientific literature search.

Another study examined the coverage in WOS Core Collection, Scopus and GS of 2,299 highly-cited English-language documents published in 2006 (Martín-Martín et al., 2018). They found that GS offered the highest coverage of citations being analyzed. The same research group extended its analysis to include Microsoft Academic, Dimensions, and the OpenCitations Index of CrossRef open DOI-to-DOI citations (COCI) (Martín-Martín et al., 2021). In this updated study, GS still demonstrated the most extensive coverage in most subject categories.

There also has been research on coverage disparities of databases in various subject areas. Harzing and Alakangas (2016) compared the coverage of the publications of 146 associate and full professors from the University of Melbourne, Australia, in GS, WOS and Scopus. Their study revealed that GS appeared to have the most extensive coverage, whereas the coverage of WOS and Scopus was comparable in five major disciplines: humanities, social sciences, sciences, engineering, and life sciences. For instance, in engineering, the average number of publications were 143 (GS), 103 (Scopus), and 81 (WOS). Harzing (2013) studied the coverage of the 800 most-cited publications by 20 Nobel Prize winners in chemistry, economics, medicine and physics in WOS and GS. They discovered that GS's coverage of the chemistry and physics papers had improved dramatically compared with the low level of coverage for these two disciplines reported by Bosman et al. in 2006.

In the fields of engineering and computer science, a study evaluated coverage of citations from 676 engineering dissertations from 1950 to 2017 in Compendex, Scopus

and GS (Cole et al., 2018). Their study revealed that GS outperformed Compendex and Scopus in all nine engineering disciplines that were studied. In computer science, GS contained 90% of the references from 2010 to 2017, compared with 30% for Compendex and 65% for Scopus. In electrical engineering, GS contained 95% of the references from the same decade, compared with 65% for Compendex and 80% for Scopus.

Thompson (2020) in July 2020 investigated how fast various databases were indexing new journals started in 2018, 2019 and 2020. Thompson's unpublished study included the databases and association publishers selected for the current study, with the exception that it did not provide GS data for ACM journals. According to that study, GS's coverage for new journals was very good and no subscription databases did well in indexing newly-started journals. For example, by July 2020, GS had indexed 83% of IEEE journals launched in 2020 up to that point.

Klassen (2020) found a trend of Association of Research Libraries (ARL) and Oberlin Group libraries discontinuing some discipline-specific science and engineering databases between 2011 and 2016, particularly Compendex and Inspec. In contrast, subscriptions to multidisciplinary databases such as WOS and Scopus remained more or less constant, or even increased. The continued importance of WOS and Scopus by researchers in engineering and computer science makes findings of this study pertinent.

Methodology

This study calculated the number of articles published in new journals that were started between 2018 and 2022 by two major electronic engineering and computer science association publishers: the IEEE and the ACM. We then compared these numbers with article counts in GS and two subscription-based multidisciplinary databases: WOS Core Collection and Scopus. This provided estimations of indexing coverage for each journal.

All data were collected in January 2023. We used 35 IEEE journals (five for 2022, three for 2021, 19 for 2020, five for 2019, and three for 2018). We identified journals launched by IEEE from 2018 to 2022 by reviewing the title list in IEEE Xplore. We excluded journals published by Tsinghua University Publications (TUP), which are hosted in IEEE Xplore but are not IEEE journals. The journals were located by browsing for journals and magazines, then limiting the content type to journals and sorting by "newest first." In each issue of the IEEE journals, we looked for research articles, editorials, special sections, introductions, responses, and corrections. We analyzed every issue for each journal, by counting the number of articles in each issue and subtracting front covers, tables of contents, and information for authors. This followed the method used by Thompson (2020).

ACM's newly-launched journal titles were obtained from an ACM representative in January 2023. For ACM journals, we analyzed a total of 11 journals (one for 2022, two for 2021, six for 2020, and two for 2018). For nine of the 11 ACM journals, we obtained the number of publications from the ACM Digital Library website. Because ACM Digital Library does not contain early-access articles, front covers, tables of contents, editorials, or information for authors, we were able to use its accurate count of published articles in each journal. For two of the 11 ACM journals (*Distributed Ledger*

Technologies: Research and Practice, and *ACM SIGEnergy Energy Informatics Review*), ACM Digital Library did not provide numbers of published articles. We counted the number of articles by browsing each issue. Editorials were included for these two ACM journals.

Due to the exclusion of editorials from the counts for nine of the 11 ACM journals, the counts of ACM articles indexed in WOS and Scopus may have included editorials that were not counted in the ACM journal counts. It is possible this may have affected the calculations of article coverage. Individual article verification would be needed to confirm any such effect. However, considering the number of editorials in ACM journals was small, we made the assumption that the influence on results would not be significant.

Table 1. IEEE and ACM journals started 2018-2022.

Year Launched	IEEE Journals	ACM Journals
2022	5	1
2021	3	2
2020	19	6
2019	5	0
2018	3	2
Total	35	11

Table 1 shows the IEEE and ACM journals launched from 2018 to 2022. It can be seen from the table that the number of new journals ranged from zero to six in most years, with 19 new journals by IEEE in 2019 as an outlier. Fourteen of the 19 new journals in 2019 were Gold Open Access journals funded by article processing charges (APCs).

When counting how many of these articles were indexed in each database, we searched in WOS and Scopus for each journal title with and without quotation marks, making sure there were no articles from journals with similar titles. In GS, we searched with quotation marks; if no articles were retrieved, we searched without them. In Scopus, sometimes there was a slight difference in the number of articles indexed from a specific journal with or without quotation marks. We chose to use the number retrieved with quotation marks. For GS, we selected not to "include citation." We reviewed the retrieved articles in GS and removed ones that were not published in the journals selected for the study. Retrieved articles in every database studied were scanned to check they were published in the selected journals.

Results

Table 2 lists the titles of IEEE journals started from 2018 to 2022 and the numbers of published and early access articles for each journal. It also shows the numbers of articles from each journal that were indexed in the three databases.

Table 2. Published articles, early access articles, and total articles of journals started by IEEE from 2018 to 2022.

Journal Title	Start Year	Published Articles	Early Access Articles	Total Articles	WOS Core Collection	Scopus	Google Scholar
IEEE Open Journal of Instrumentation and Measurement	2022	44	0	44	0	0	44
IEEE Open Journal of Systems Engineering	2022	0	1	1	0	0	1
IEEE Transactions on Signal and Power Integrity	2022	18	1	19	0	0	19
IEEE Journal on Flexible Electronics	2022	24	20	44	0	0	42
IEEE Journal of Control Systems	2022	26	1	27	0	0	23
IEEE Open Journal of Ultrasonics, Ferroelectrics, and Frequency Control	2021	27	1	28	0	0	24
IEEE Journal of Microwaves	2021	143	5	148	0	0	180
IEEE Canadian Journal of Electrical and Computer Engineering	2021	111	2	113	84	0	116
IEEE Transactions on Technology and Society	2020	80	12	92	84	0	89
IEEE Transactions on Artificial Intelligence	2020	152	162	314	0	242	309
IEEE Open Journal of Industry Applications	2020	75	3	78	0	0	80
IEEE Open Journal of Power Electronics	2020	167	6	173	137	166	170
IEEE Open Journal of the Communications Society	2020	438	6	444	401	424	441
IEEE Open Journal of Vehicular Technology	2020	91	9	100	91	106	113
IEEE Journal of Emerging and Selected Topics in Industrial Electronics	2020	198	27	225	0	0	262
IEEE Transactions on Quantum Engineering	2020	132	6	138	0	91	122
IEEE Open Journal of Engineering in Medicine and Biology	2020	112	9	121	89	110	116
IEEE Open Journal of Nanotechnology	2020	69	8	77	69	74	79
IEEE Journal on Selected Areas in Information Theory	2020	202	20	222	0	0	197
IEEE Open Journal of Signal Processing	2020	88	5	93	79	85	85
IEEE Open Journal of the Industrial Electronics Society	2020	121	1	122	121	120	129
IEEE Open Journal of Intelligent Transportation Systems	2020	123	6	129	122	0	131
IEEE Open Access Journal of Power and Energy	2020	157	8	165	141	169	181

IEEE Open Journal of the Computer Society	2020	86	2	88	75	0	92
IEEE Open Journal of Circuits and Systems	2020	140	5	145	110	0	139
IEEE Open Journal of the Solid-State Circuits Society	2020	48	7	55	0	0	53
IEEE Open Journal of Antennas and Propagation	2020	298	7	305	264	297	312
IEEE Journal on Miniaturization for Air and Space Systems	2019	82	14	96	0	0	93
IEEE Transactions on Medical Robotics and Bionics	2019	315	8	323	286	277	319
IEEE Transactions on Biometrics, Behavior, and Identity Science	2019	160	16	176	0	169	184
IEEE Letters on Electromagnetic Compatibility Practice and Applications	2019	102	4	106	94	0	101
IEEE Networking Letters	2019	175	15	190	0	0	188
IEEE Letters of the Computer Society	2018	37	0	37	0	0	36
IEEE Solid-State Circuits Letters	2018	425	5	430	396	422	408
IEEE Transactions on Games	2018	224	68	292	207	279	289

According to data in Table 2, there were significant gaps in coverage in WOS Core Collection and Scopus. The two subscription databases had not indexed any new journals from 2022, whereas GS appeared to have indexed almost all the articles from 2022. WOS had indexed 74.3% (84 of 113) of articles from 2021 journal *IEEE Canadian Journal of Electrical and Computer Engineering*. However, Scopus had not indexed any articles from IEEE journals started in 2021. For journals started in 2020, WOS Core Collection had not indexed any articles from six journals. On the other hand, Scopus had not indexed any articles from eight journals. For journals started in 2019, two journals were missing from both WOS Core Collection and Scopus: *IEEE Journal on Miniaturization for Air and Space Systems* and *IEEE Letters on Electromagnetic Compatibility Practice and Applications*. As far as journals started in 2018 were concerned, *IEEE Letters of the Computer Society* was not indexed by either of the two databases.

GS appeared to provide a thorough indexing of all the new IEEE journals over the time span studied, though the actual level of coverage cannot be known due to the difficulty of confirming coverage of unique articles in GS. Table 2 shows that GS's indexing totals for 12 of 35 IEEE journals exceeded the numbers of total articles. Possible reasons for this are presented in the Discussion section.

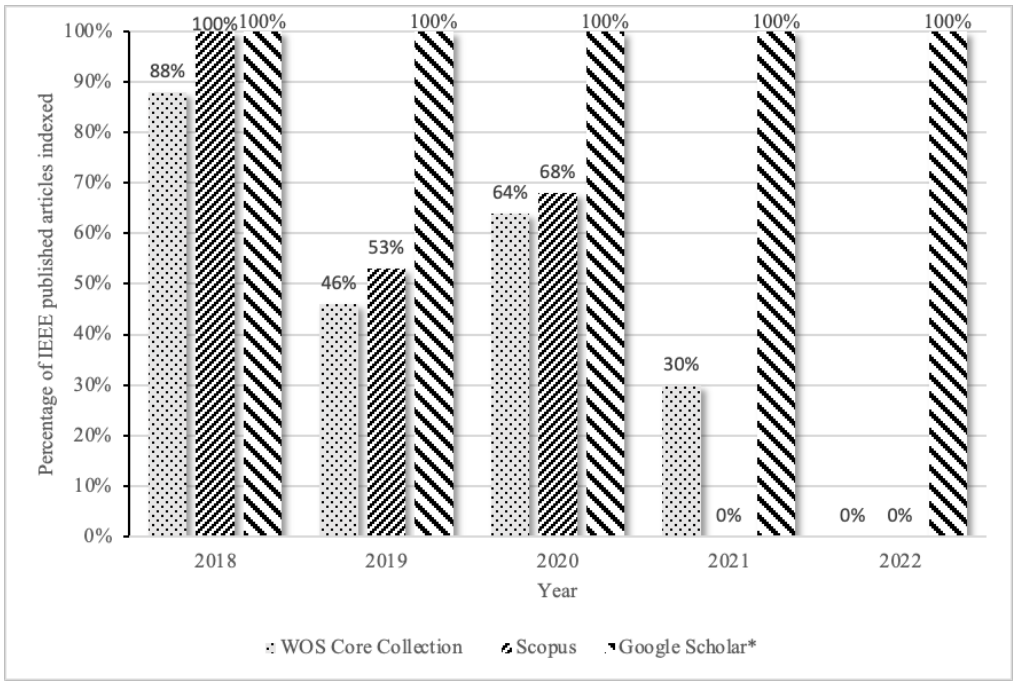

Figure 1. Percentages of published articles from IEEE journals started 2018-2022 indexed by WOS Core Collection, Scopus and GS. (*For GS, "100%" was used when the total was greater than 100%.)

Figure 1 shows the percentages of articles published from 2018 to 2022 (excluding early-access articles) indexed by WOS Core Collection, Scopus and GS. These percentages are based on an assumption that the count of indexed articles included only published articles, and not a combination of published and early-access articles. Article-level verification would be needed to validate this assumption.

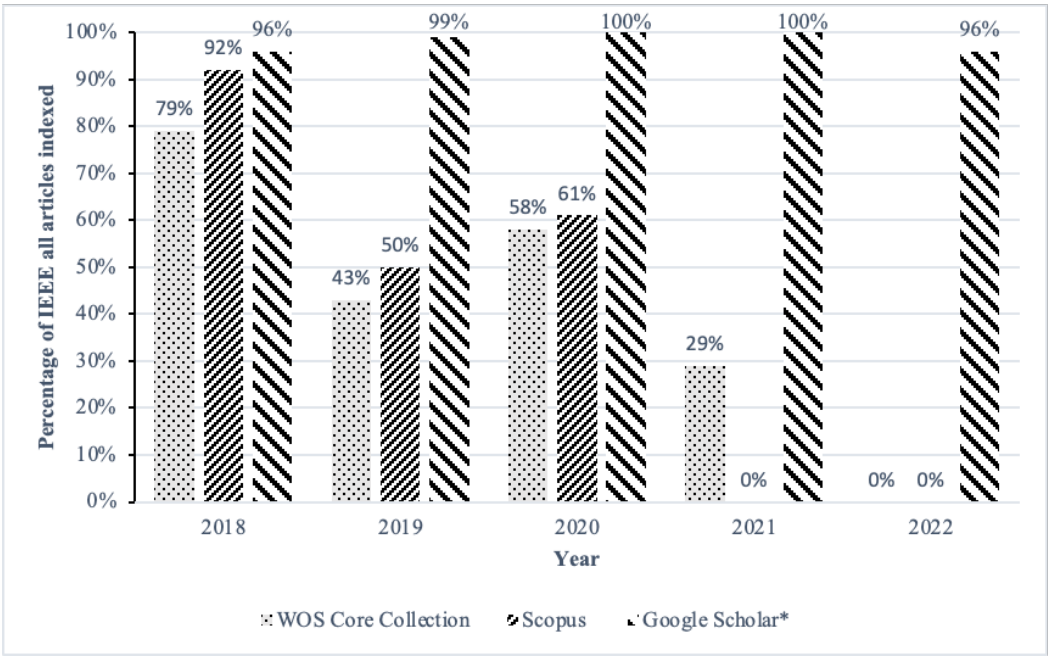

Figure 2. Percentages of IEEE published and early access articles from IEEE journals started 2018-2022 indexed by WOS Core Collection, Scopus and GS. (*For GS, "100%" was used when the total was greater than 100%.)

Figure 2 illustrates the percentages of all articles (published and early access) indexed by WOS Core Collection, Scopus and GS from 2018 to 2022. In several cases, the count of matching articles exceeded the count of articles in IEEE, in which case the percentage is reported as "100%*".

According to our data, GS appeared to have higher percentages of coverage for IEEE's newly-started journals from these five years and outperformed the subscription-based databases. Coverage rates of WOS Core Collection and Scopus were comparable. However, as noted, the actual level of coverage in GS cannot be known for sure due to the presence of an undetermined number of duplicates.

WOS Core Collection had a higher coverage percentage than Scopus for journals started in years 2021 (30% vs. 0% for published articles, and 29% vs. 0% for both published and early access articles), despite findings in some studies that the WOS Core Collection is a more selective database than Scopus (e.g., Mongeon & Paul-Hus, 2016).

Table 3. Published articles from journals started by ACM from 2018 to 2022. (ACM DL does not contain early access articles).

Journal Title	Start Year	Published Articles	WOS Core Collection	Scopus	Google Scholar
Distributed Ledger Technologies: Research and Practice	2022	11	0	0	21
ACM SIGEnergy Energy Informatics Review	2021	21	0	0	14
ACM Transactions on Evolutionary Learning and Optimization	2021	33	0	0	25
ACM Transactions on Computing for Healthcare	2020	120	0	98	120
ACM Transactions on Internet of Things	2020	99	80	25	99
ACM Transactions on Quantum Computing	2020	63	0	0	62
ACM/IMS Transactions on Data Science	2020	75	0	0	38
Digital Government: Research and Practice	2020	100	0	82	105
Digital Threats: Research and Practice	2020	126	0	91	131
ACM Transactions on Social Computing	2018	77	0	0	79
Proceedings of the ACM on Computer Graphics and Interactive Techniques	2018	167	174	170	159

Table 3 shows that neither WOS Core Collection nor Scopus had indexed journals started in 2022 or 2021. For the six new journals started in 2020, WOS Core Collection had indexed one of them (14% of 2020 articles), while Scopus had indexed four (51%). The two databases demonstrated almost the same coverage rate (71% vs. 70%) for 2018 ACM journals. Of the two journals started in 2018, neither database had indexed *ACM Transactions on Social Computing*.

As in the case for new IEEE journals, GS appeared to exhibit a high coverage rate for all ACM journals started from 2018 to 2022. Table 3 shows that the indexing totals for several ACM journals in GS exceeded the numbers of published articles. For *Proceedings of the ACM on Computer Graphics and Interactive Techniques*, the indexing totals in both WOS and Scopus exceeded the number of published articles. Possible reasons for this are presented in the Discussion section.

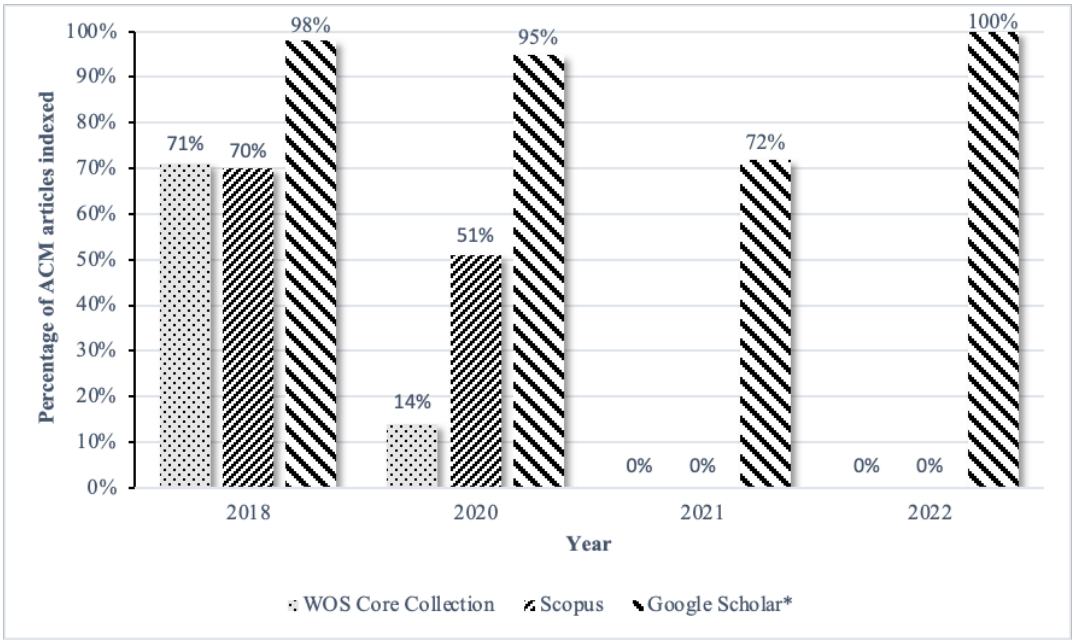

Figure 3. Percentage of published articles in journals started by ACM from 2018 to 2022 indexed by WOS Core Collection, Scopus, and GS. (*For GS, "100%" was used when the total was greater than 100%.)

Discussion

Progress in Indexing New Journals

Our data showed significant coverage gaps in WOS and Scopus. GS appeared to be two years ahead of WOS Core Collection and Scopus in terms of new journals coverage. This compares with Harzing's 2013 estimate that GS could be 9-12 months ahead of WOS in publication coverage. Based on data from the current study, it is important for librarians to use GS in reference and instruction along with WOS or Scopus when searching topics related to technology, engineering and computer science in order to retrieve the most up-to-date journal articles.

Our data indicated that WOS Core Collection and Scopus had indexed new journals from IEEE and ACM at comparable speeds. For some years, Scopus had updated faster than WOS, whereas for other years the latter updated faster. This mirrors a report by the Utrecht University Library (Bosman et al., 2006) that compared their updating speeds for the two journals with the highest impact factors from 80 categories in Journal Citation Reports. For almost half of the journals, WOS and Scopus updated at the same speed. For slightly over a quarter, Scopus updated faster and for slightly under a quarter WOS updated faster. However, their levels of coverage still appeared to be

lower than those of GS. Assuming there were no differences in how each of IEEE and ACM provided its article metadata to Scopus, WOS, and GS, these variations in updating speeds and coverage gaps may have been the result of indexing decisions by Scopus, WOS, and GS.

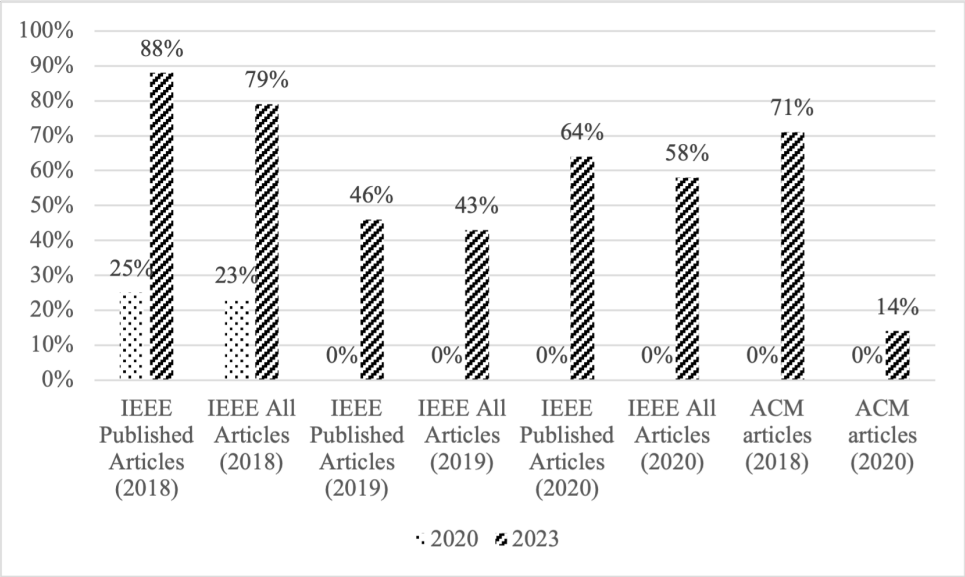

Figure 4. Percentage of articles in journals started by IEEE and ACM from 2018 to 2022 indexed by WOS in July 2020 (Thompson) and January 2023.

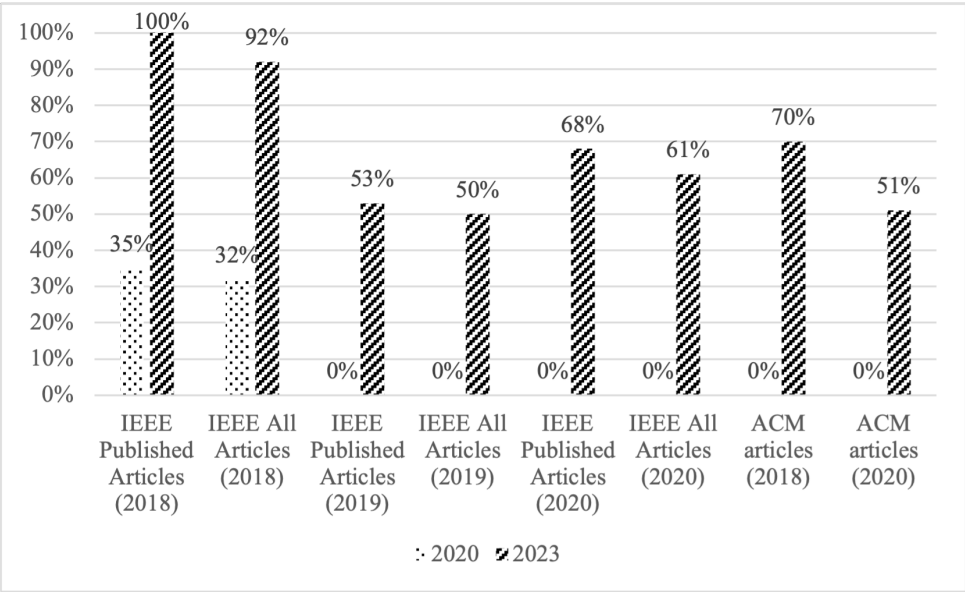

Figure 5. Percentage of articles in journals started by IEEE and ACM from 2018 to 2022 indexed by Scopus in July 2020 (Thompson) and January 2023.

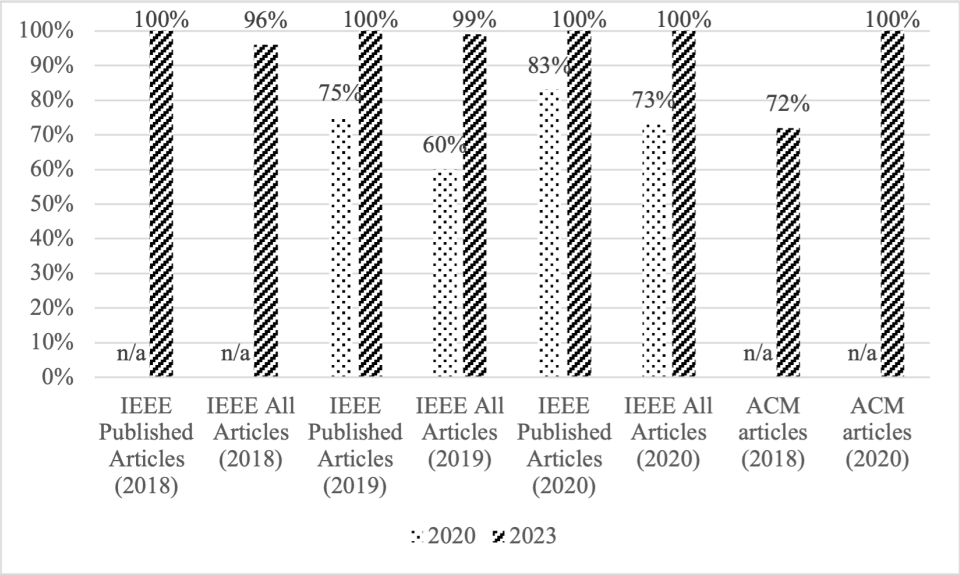

Figure 6. Percentage of articles in journals started by IEEE and ACM from 2018 to 2022 indexed by GS in July 2020 (Thompson) and January 2023. ("100%" was used when the total was greater than 100%.)

Comparison of the current study's data with Thompson (2020) shows that between 2020 and 2023 WOS and Scopus added content from IEEE and ACM journals launched in 2018-2020, but continued to lag GS in levels of coverage. Figures 4, 5, and 6 compare the percentages of articles calculated in Thompson's study and in the current one for journals started by each publisher from 2018 to 2020. In Thompson's study, WOS Core Collection and Scopus had not indexed any articles in IEEE journals started in 2019 and 2020. Data from the current study indicate that the coverage rate for new IEEE journals in all three databases increased between 2020 and 2023. In WOS Core Collection, the coverage rate for published articles in 2018 IEEE journals increased from 25% to 88%; for 2019 IEEE journals, it increased from 0% to 46%. In Scopus, the coverage rate for published articles in 2018 IEEE journals increased from 35% to 100%; for 2019 IEEE journals, it increased from 0% to 53%. Similarly, in GS, the apparent coverage rate for published articles in 2019 IEEE journals increased from 75% to 100%*; for 2020 IEEE journals, it increased from 83% to 100%*. Also in Thompson's study, WOS Core Collection and Scopus had not indexed any of the ACM journals started in 2018 and 2020 (no GS data were provided). Data in the current study indicate that these two databases also added some ACM 2018 and 2020 journal contents between 2020 and 2023. In WOS Core Collection, coverage rate for ACM 2018 articles increased from 0% to 71%; for ACM 2020 articles, it increased from 0% to 14%. Similarly, in Scopus, coverage rate for ACM 2018 articles increased from 0% to 70%; for ACM 2020 articles, it increased from 0% to 51%. However, for journals started in 2021 and 2022, WOS Core Collection and Scopus lagged GS's apparent levels of coverage by significant margins.

In the July 2020 study, data on GS was not complete. In the current study, we collected data in GS to produce a more thorough comparison between the two subscription-based databases and GS, though uncertainties around the data in GS make it difficult to draw firm conclusions.

Influence of Indexing Policy on New Journal Coverage

We hypothesize that some of the gaps in WOS and Scopus are the result of the time necessary for these resources' selection process. It is understandable that these two selective databases need time to know whether these new journals will be published regularly and can succeed in the long run. Another possibility for these gaps is the time taken by publishers to provide contents information to the indexers.

Limitations

In this study, the analysis of coverage levels in WOS, Scopus, and GS provides insights into how their coverage compares. However, coverage was calculated by comparing article counts. Without verifying the indexing of individual articles, either for all articles or by sampling, it is necessary to consider the data as indicative and not conclusive. Several article counts for IEEE and ACM articles in GS exceeded the actual number of published articles. As a result, it is impossible to be certain whether GS is indexing every unique IEEE and ACM article, or over-representing some and missing others.

Duplicates may be a significant reason why GS contained more articles than published ones for some IEEE and ACM journals. According to Harzing and Alakangas (2016), additional publications found in GS were linked to "stray citations" (p.795) which means slight citation variations produced duplicates of the same paper. They argued that comparing citation counts could produce more meaningful results than comparing publication numbers. GS also indexes institutional repositories (Brown, 2017), preprint repositories such as arXiv.org, and postprint repositories where journal articles can be archived according to the Green Open Access policies of different publishers (Vinyard & Colvin, 2022).

Another factor to consider in counting published articles was the inclusion of editorials and introductions to issues in databases. We included IEEE editorials and introductions in our study for article counts. However, as noted, ACM Digital Library excludes these, but GS includes ACM journals' editorials and introductions to issues. This may partly explain why GS, WOS and Scopus indexed more articles for some ACM journals than we counted in ACM Digital Library.

Future Directions

This study might be expanded to include other major association publishers in a variety of engineering disciplines, such as civil engineering, mechanical engineering, or aeronautics, provided that article counts could be acquired for newly-started journal titles. Also, coverage rates in other computer science and engineering databases such as Inspec and Compendex could be analyzed and compared too.

Conclusion

This study counted the number of articles (including early access articles) in journals started by IEEE and ACM from 2018 to 2022. Then we counted the numbers of articles from these journals that had been indexed in WOS Core Collection, Scopus, and GS. The

comparison of these article counts made it possible to estimate coverage rates for each journal. GS appeared to exhibit high percentages for coverage for all of the journals (though GS's inclusion of duplicates makes it impossible to have certainty about its coverage of unique articles) and appeared to outperform the fee-based databases. GS had indexed most articles in the IEEE journals. WOS Core Collection and Scopus's levels of coverage for new IEEE journals were lower than GS's, and mostly comparable to each other's. Similarly, GS had indexed most articles in ACM journals started from 2018 to 2022. Neither WOS Core Collection nor Scopus had indexed any ACM new journals started in 2022 and 2021. Compared with coverage levels reported by Thompson (2020), both WOS Core Collection and Scopus had added more articles from IEEE and ACM journals started in 2018, 2019 and 2020, between July 2020 and January 2023 - but still lagged behind the indexing coverage in GS. Our hypothesis is that these gaps were the result of the time necessary for these two databases' selection process.

This study provided a snapshot of how fast WOS Core Collection, Scopus and GS index articles from the newly-launched journals of IEEE and ACM, two major association publishers in the fields of engineering and computer science. It identified coverage gaps that may benefit reference and instruction librarians, science and engineering librarians, and acquisition librarians. The disparities in coverage are important factors to consider when providing reference and instruction services since it is vital to provide the most up-to-date publications in technology, engineering and computer science.

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