Global Awareness and Pandemic in Predatory Journals and Publishing: A Bibliometric Analysis

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Abstract

Open access publishing not only increases accessibility to library materials and publications but also provokes the growth of predatory journals. The objectives of this study were to 1) corroborate the increasing concern of predatory journals, 2) identify journals publishing articles that commented on this issue, and 3) pinpoint occupations, academic disciplines, and geographic locations of these authors. This bibliometric study covered 2010-2020 tracking the library and information science literatures on the subject of predatory journals and outlined the trends. Analytical results of this study showed that there was an increasing global awareness of predatory journals among academic librarians and the scholarly community. The findings suggest a critical need for establishing information literacy in academia in the context of predatory journals, prompting academic librarians and scholarly authors to collaboratively deal with the pandemic of predatory publications.

Article Type: Research paper

Introduction

According to Ranganathan, the First Law of Library Science “Books are for use” entails accessibility as a core value of library services (Gorman, 1998). The development of digital technology has made a significant and continuous impact on library services, especially in the area of data retrieval and access (Coyle, 2016). Following the advent of the internet and the World Wide Web, abundant electronic resources are available at the fingertips of users. The spread of open access publishing, a term generally referred to as the free availability of literature on the public internet, has expanded the outreach of electronic resources further. Unlike conventional publishing, Suber (2012) defines open access literature as “digital, online, free of charge, and free of most copyright and licensing restrictions,” which is known as the access revolution that removes price barriers for readers (p. 4). Open access publishing has greatly enhanced the accessibility of library materials and publications for the public; however, its chief downside is that it creates an environment for predatory journals to target potential authors more easily.

Predatory journal publication is one of the major negative consequences in this open access wave. The term predatory was first used by Beall (2010) to describe publishers whose mission was to exploit this open access model through requesting authors to pay open access fees for their own profit at the expense of academic integrity, namely the quality of science and genuine peer review (p. 15). Like any other business in the market, publishing companies

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cannot survive without a healthy balance sheet. Publication costs are traditionally passed to both academic authors and individual and library subscribers, but many funding agencies have requested that their grantees publish in journals that are freely available for online users – also known as open access (OA). For example, the US National Institutes of Health (NIH) has mandated research papers of their grantees be made freely available to the public through PubMed Central within 12 months of publication since 2008.

Although NIH grantees are unlikely to consider predatory journals, more and more researchers are seeking OA options for their publications, and more and more journals have begun to implement OA standards. Unfortunately, some of these journals are created with the prime goal to profit from the publication. In 2019, 43 leading scholars from 10 countries agreed that "predatory journals and publishers are entities that prioritize self-interest at the expense of scholarship and are characterized by false or misleading information, deviation from best editorial and publication practices, a lack of transparency, and/or the use of aggressive and indiscriminate solicitation practices" (Grudniewicz et al., 2019, p. 211). In short, the need to publish research has given predatory journals an opportunity for growth in the name of scholarship. A possible reason behind this is not all academic authors, especially doctoral students and junior scholars, have a clear understanding of predatory journals (Taylor, 2019). In such a scholarly enterprise, it is important to assess how the library community is prepared to face this OA trend and whether academia is fully aware of the complex issue of predatory journals and the publishing business.

The objectives of this bibliometric study were to identify publication trends, top journals, and prolific authors as well as the occupations, academic disciplines, and geographic locations of the authors according to the library and information science literatures that discuss predatory journals. Bibliometrics, a term replacing statistical bibliography, are mathematic and statistical analyses of books and other mediums of communication (Pritchard, 1969). According to the Online Dictionary of LIS (ODLIS), bibliometrics are "the use of mathematical and statistical methods to study and identify patterns in the usage of materials and services within a library or to analyze the historical development of a specific body of literature, especially its authorship, publication, and use" (Reitz, 2015). This study tracked publications ranging from 2010 to 2020 on the subject of predatory journals. The span of 10 years allowed the author to examine whether there had been a growth or a decline in the publication of journal articles as they were related to predatory journals. This paper outlines the findings of the study in an effort to establish any noticeable changes and the progression of research on the topic of predatory journals.

Research Questions

R1. How many articles on the subject of predatory journals are published per year?
R2. What are the top five journals publishing the most articles on this subject?
R3. Who published the most articles on this subject and what are their occupations?
R4. What are the academic disciplines of these authors?
R5. What is the geographic distribution of these authors?

Literature Review

Open Access Publishing

How did predatory journals become a byproduct of OA publishing? The OA movement was originally motivated by restricted access to academic research and began in the 1990s when access to the Internet became widely available (Suber, 2002, 2012). The OA initiative advocates for free online access to research articles. In practice, there are two main ways to publish OA research articles: gold OA publishing and green OA publishing. According to Harnad et al. (2004, 2008), gold OA means that authors publish their works in OA journals that may be accessed without requestion. Green OA, on the other hand, often requires authors who publish in non-OA journals to deposit their accepted or

post-print manuscripts into their institutional repositories.

However, OA publishing is not always free to the authors, who are sometimes charged to make their research OA. Costs incurred by OA journal publishing, often known as article publishing or processing charge (APC), range from free to $5,000 or more. *Cell*, for instance, a top peer-reviewed journal in the life sciences, has the impact factor of 41.582 in 2020; APC for *Cell* is $9,900 as displayed in the APC price list on the Cell Press website. Not only APCs are requested by the publishers to maintain their business including implement OA models or make up for lost subscriptions, but higher citation rate for OA articles also induces academic authors to pay APCs (Nelson and Eggett, 2017). This pay-to-publish OA model can become troublesome when a journal provides fake or no peer review, false impact factors, and/or fake editors and physical addresses.

The growing popularity of OA journals cannot be denied, and in turn the prevalence of predatory journals cannot be ignored. Severin et al. (2020) notes that in 2008 OA publications only made up 20.4% of all scholarly outputs, but in years after 2010, OA publications made up more than one third (p. 5). Moreover, Shen and Björk (2015) identified 8,000 predatory journals that rapidly increased their number of article publication from 53,000 in 2010 to an estimated 420,000 in 2014. Thus, learning the characteristics of predatory journals is of upmost importance, even for experienced researchers, which can be challenging because predatory practices tend to manipulate the measuring of impact factors and scholarly indexing, steal identities of real scholars, and mimic visual elements of credible journals such as website layouts, personalized emails, and manuscript formatting templates (Taylor, 2019). There are also disciplinary differences in scholarly communication, with each discipline having its own list of important and trusted OA journals, further complicating the evaluation of OA publications (Mullen, 2010).

Research on Predatory Journals

Beall, a librarian from the University of Colorado at Denver, is the pioneer who named and created a list of predatory journals and publishers based on their abuse and use of the author-pay models in OA publishing. The listing was built initially on the basis of a review on *Bentham Open*, a website containing hundreds of peer-reviewed and freely available journals (Beall, 2009), and subsequently according to a comparative review on nine other OA publishers (Beall, 2010). Beall has argued that predatory journals and publishers are the gloomy consequence of the OA movement and researchers should have appropriate lists to identify predatory journals in their own field (Beall, 2013).

Thus, Beall created *Beall's List of Potential Predatory Journals and Publishers* in 2012 that contained journals and publishers he viewed as potentially predatory; however, he eventually decided to end the blog in 2017 due to the intense pressure from his employer and rising criticism from peer academic librarians (Beall, 2017). The rationale for discontinuing the site was that a list made by a single person might be subjective; therefore, the representativeness and applicability of *Beall's List* can be questioned. The named predatory open access publishers are especially hostile toward Beall and his list to such an extent that there have been several past legal threats (Silver, 2017). Beall's blog was also criticized for his outrageous words and unrightful judgements, particularly the case of blacklisting the publisher *Frontiers* (Bloudoff-Indelicato, 2015; Teixeira da Silva, 2017). Regardless of his controversial style towards predatory OA publishers, Beall's work illustrates one scholar's attempt to combat predatory journals that threaten the integrity of scholarly communication.

While seeking a better definition of predatory journals, Cobey et al. (2018) have noted that academic authors and other stakeholders are not fully aware of the distinction between low-quality and intentionally dubious journals, nor do they receive sufficient education about navigating journal selection and submission process. Recognizing the problem associated with predatory practices, Pyne (2017) conducted a case study on incentives to publish in predatory

journals in a small business school at a relatively new university and found that most faculty published in predatory journals, but there was limited evidence to suggest such predatory publications would reduce their probability of being hired, receiving tenure and promotion, and getting internal research awards. Further, Demir (2018) suggested that predatory journal publications were largely submitted by academics in developing countries and used for pursuing early or rapid promotion and receiving incentive allowances. Demir's (2018) study also indicated predatory practices were already widespread based on the findings that predatory journals were located in 52 different countries and researchers from 146 countries chose to publish in predatory journals.

Related Bibliometric Research

Nwagwu and Ojemeni (2015) analyzed the bibliometric characteristics of 32 biomedical OA journals from two Nigerian publishers appeared in the *Beall's List*. Beshyah, Basher and Beshyah (2020) studied the threat of predatory journalism to medical research by searching Scopus database with the term "predatory journalism and publishing" in a time frame from 2012 to 2018. One focused on Nigerian OA publishing and another emphasized medical OA publications. Similar bibliometric studies to this one were unable to be found, but studies using similar methodologies were referenced over the course of the current study.

For instance, Parks (2015) researched the publication patterns and authorship with the use of "academic law librar*" as the search term to gather articles related to law libraries and law librarians in the three specialized databases: LISS, LISTA, and ISTA. Bhui and Sahoo (2018) studied the trend of public library research in India through bibliometric techniques to query Shodhganga, a collection of Indian theses hosted by the INFLIBNET center, with the use of such search terms as public library, public library services, community information service, information seeking behavior, and public library collection. Altogether, these two studies employed distinct article databases and search terms to collect articles relevant to the research questions. The collected articles were listed and analyzed using Excel worksheets in both studies. Their methodologies and research designs are comparable to the retrieval methods of this study.

Overall, the impact of predatory practices is contentious and has brought to the attention by academic librarians. The purpose of this study was therefore to quantify the publication patterns and authorship involved in shaping the awareness of predatory practices in the library community. As previous bibliometric studies on predatory journals and publishers were limited to either a certain country or a specific academic discipline, the author aimed at filling a gap in scholarship by providing a more comprehensive understanding of the scholarly interest on this subject.

Methodology

This study utilized article databases and search terms to collect articles related to predatory practices. Because the term 'predatory publishers' was coined in 2010 by Beall (2010), this study included English language articles published between 2010 and 2020. This study was conducted initially in July 2020 and later in November 2021 to obtain the full coverage of data in the year 2020. To focus on assessing the role of the library community, this study was limited to results from three specialized databases: *Library and Information Science Source* (*LISS*), *Library, Information Science & Technology Abstracts* (*LISTA*), and *Information Science & Technology Abstracts* (*ISTA*). This study did not include short items with few or no bibliographic references such as correspondences or columns. In consideration of obtaining scholarly trusted and complete articles for analysis, only peer-reviewed and full-text articles were collected in this study. Furthermore, due to time and resource constraints, this study chose to look at peer-reviewed and full-text articles available at the author's institutions, the University of Southern Mississippi and Mississippi State University, via library subscriptions.

The following searches were performed: "predatory publishing" or "predatory journals"; both were the most relevant topical terms that prompted automatically when the first word "predatory" was keyed in. All duplicates appearing in more than one of the databases searched were removed in order to create an appropriate compilation of articles. The specific number of unduplicated and applicable articles was noted, as well as the title of the article, the year of publication, author's name and affiliation, and the name of the journal in which the article appeared. Further research on job title, category of disciplines, country/continent where the institution is located were conducted to determine occupations, academic disciplines, and geographic locations of the authors.

Academic affiliation and job title as shown in these articles were used to determine the academic discipline of these authors. According to the *Library of Congress Classification* (*LCC*), these academic disciplines were categorized by Philosophy, Psychology & Religion (B), Social Science (H), Law (K), Education (L), Fine Arts (N), Language & Literature (P), Science (Q), Medicine (R), Agriculture (S), Technology (T), and Library Science (Z). Although *LCC* was developed for shelving books, the philosophy behind this classification system was to divide the entire field of knowledge into main classes in correspondence largely to academic disciplines.

The data were entered and sorted in a Microsoft Excel worksheet. Items listed in the worksheet included article title, publication year, journal name, author name, author occupation, academic discipline, and geographic location. Other worksheets were created to present the findings of this study in table and figure forms. Through analyzing the list of collected articles, the author was able to establish the top five journals on this topic, most prolific authors and their occupations, academic disciplines, and geographic locations as well as exploring the progression of research conducted on this topic.

Limitations and Assumptions

The findings of this study may not be generalizable because results reflect only publications from the three selected LIS databases. It is also worth noting that the same search terms may yield different search results if executed at different times or in different libraries in light of database subscription packages. The number of articles in the search results would probably be increased if 'full text' was removed as a search limiter, yet full-text articles could provide more useful information for data analysis than titles with abstracts only. For this study, the number difference caused by 'full text' limiter was 2 articles. Moreover, many valuable but personal discussions on OA and predatory journals occurring in blogs, such as *Open Access Archivagelism* by Harnad and others related to *Beall's List*, were not included because of their possible subjectivity. Substantial discussions outside the library community were also excluded. Hence, future studies that include more comprehensive database searches as well as blogs and/or other non-peer-reviewed literatures may produce different results.

In addition, the author made some assumptions over the course of this study. First, the author assumed that the information retrieved, including author information, from the three LIS databases was accurate and complete. It was further assumed that the database articles in this study were indexed accurately and completely such that all relevant articles were retrieved and that the databases were functioning properly at the time of data collection.

Results

R1. How many articles on the subject of predatory journals are published per year?

The searches performed in the selected databases yielded 104 unduplicated articles that met the inclusion criteria of this study. The results showed that no such articles were published in the first three years since the term 'predatory publishers' was created by Beall in 2010 (Table 1). Nonetheless, there was a growing trend of publications on the subject matter since 2013, with a sharp increase from 2015 to 2017 (Figure 1).

Table 1. Published Articles on the Subject of Predatory Publishing/Journals by Year		
Year of Publication	**# of Articles**	**% of Total**
2010	0	0
2011	0	0
2012	0	0
2013	1	0.96
2014	1	0.96
2015	6	5.77
2016	12	11.54
2017	24	23.08
2018	16	15.38
2019	20	19.23
2020	24	23.08
Total	**104**	**100**

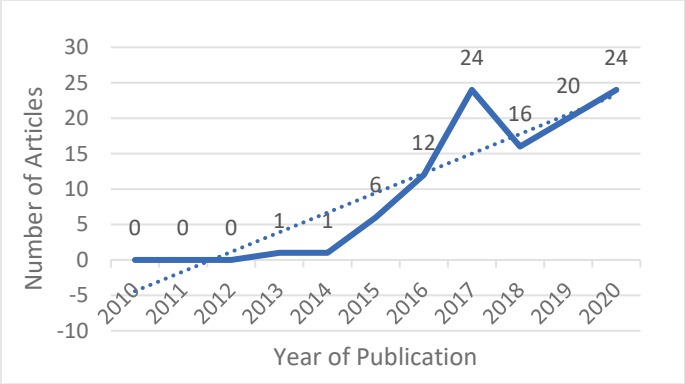

Figure 1 THE GROWTH OF LITERATURE ON THE SUBJECT OF PREDATORY PUBLISHING/JOURNALS FROM 2010-2020.

R2. What are the top five journals publishing the most articles on this subject?

As listed in Table 2, there were 41 scholarly journals publishing the 104 articles noted in the previous section. The top five journals published 48% of these 104 articles between 2013 and 2020; they were *Learned Publishing, Scientometrics, Journal of the Medical Library Association, Publishing Research Quarterly,* and *Journal of Scholarly Publishing*.

These results supported the general principle of Bradford's Law as the top journal, *Learned Publishing*, published 16.3 percent of all the articles (17 out of 104) and the frequency sharply decreased until the majority of the journals published only one or two articles over the decade of 2010-2020. The Bradford's Law states that "the bibliometric principle that a disproportionate share of the significant research results on a given subject is published in a relatively small number of the scholarly journals in the field, a pattern of exponentially diminishing returns first noted by Samuel C. Bradford in 1934" (Reitz, 2015).

R3. Who published the most articles on this subject and what are their occupations?

Further analyses on authorship showed a total of 225 authors among those 104 articles on the topic of predatory journals and publishing. Almost half of them, 51 by number or 49%, were single-authored. The other articles were written by 2, 3, 4, 6, 7, and 9 authors totaling 21, 15, 11, 3, 1, and 2 articles, respectively.

The most prolific authors were Jingfeng Xia and Jamie Teixeira da Silva. Jingfeng Xia, the Dean of Library at East Stroudsburg University of Pennsylvania, published three single-authored and two co-authored articles, accounting for 4.8% of the total authorship of 225 authors. Jamie Teixeira da Silva, a retired public health nutritionist residing in Japan, published one single-authored and four co-authored articles, also contributing 4.8% of the total authorship.

There were three authors who contributed four articles each, thus representing 3.8% of the total authorship. They were Williams Ezinwa Nwagwu, Aceil Al-khatib and Panagiotis Tsigaris. Nwagwu, a researcher from the Africa Regional Center for Information Science at the University of Ibadan in Nigeria, published three single-authored and one co-authored articles. Al-khatib, a university faculty in Jordan, published one single-authored and three co-authored articles. Tsigaris, a university faculty in Canada, contributed four co-authored articles.

Pippa Smart, the Editor of *Learned Publishing*, published three single-authored articles or 2.9% of the total authorship. Furthermore, there were three authors who published two single-authored articles each, which counted for 1.9% of the total authorship. These authors were Jeffery Beall, Tove Faber Frandsen, and Alexandru-Ionuţ PetriŞor. At the time of publication, Beall was an

Table 2. Journals Publishing Articles on the Subject of Predatory Publishing/Journals and the Numbers from 2010 to 2020

Journal Title	# of Articles
Learned Publishing	17
Scientometrics	10
Journal of the Medical Library Association	8
Publishing Research Quarterly	8
Journal of Scholarly Publishing	7
International Journal of Legal Information	4
Insights: The UKSG Journal	3
Journal of Academic Librarianship	3
The Serials Librarian	3
Canadian Journal of Information & Library Sciences	2
El Profesional de La Información	2
European Science Editing	2
IFLA Journal	2
LIBRES: Library & Information Science Research Electronic Journal	2
Journal of the Association for Information Science & Technology	2
Journal of Librarianship & Scholarly Communication	2
Journal of Medical Internet Research	2
Serials Review	2
Annals of Library & Information Studies	1
Aslib Journal of Information Management	1
College & Research Libraries	1
Information Development	1
Information Services & Use	1
International Journal of Knowledge Management & Practices	1
Journal of Documentation	1
Journal of East Asian Libraries	1
Journal of Educational Media & Library Sciences	1
Journal of Electronic Resources in Medical Libraries	1
Journal of Informetrics	1
Journal of Information Systems Education	1
Journal of Library & Information Studies	1
Journal of Librarianship & Information Science	1
Journal of the Canadian Health Libraries Association (JCHLA)	1
Library Management	1
Library Review	1
Malaysian Journal of Library & Information Science	1
Medical Reference Services Quarterly	1
Partnership: The Canadian Journal of Library & Information Practice & Research	1
Qualitative & Quantitative Methods in Libraries	1
Reference Librarian	1
Theological Librarianship	1

Note. Shaded cells indicate the top five journals.

academic librarian at the University of Denver and Frandsen and PetriŞor were university faculty in Denmark and in Romania, respectively. Another three authors published one single-authored and one co-authored articles each; they were Frank Houghton, a faculty member in Ireland, Jennifer Huffman, an academic librarian at the University of Wisconsin-Stevens Point, and Stefan Eriksson, a faculty in Sweden.

Although the data retrieved in this study did not match the percentage predicted by Lotka's Law of Scientific Productivity, they supported the general principle of few authors with more than one publication because the remaining 188 authors published one article only (83.56%). For reference, the Lotka's Law states that "the bibliometric principle that the number of authors making *n* contributions to the scholarly literature of a given field is about C/n^a, with C (the number making a single contribution) a constant. Accurate when applied to large bodies of literature over a significant period of time, Lotka's empirical law of scientific productivity means that

in a field in which *a* = 2, about 61% of all published authors make just one contribution, about 15 percent have two publications (1/2² x .61), about 7 percent make three contributions (1/3² x .61), and less than 1 percent produce ten or more publications (1/10² x .61)" (Reitz, 2015).

Table 3. The Most Prolific Authors Publishing Articles on the Subject of Predatory Publishing/Journals

Author's Name & Country	# of Publications	% of Total Authorships
Jingfeng Xia (USA)	5	4.8
Jamie Teixeira da Silva (Japan)	5	4.8
Aceil Al-Khatib (Jordan)	4	3.8
Panagiotis Tsigaris (Canada)	4	3.8
Williams Ezinwa Nwagwu (Nigeria)	4	3.8
Pippa Smart (USA)	3	2.9
Jeffery Beall (USA)	2	1.9
Tove Faber Frandsen (Denmark)	2	1.9
Alexandru-Ionuţ PetriŞor (Romania)	2	1.9
Frank Houghton (Ireland)	2	1.9
Jennifer Huffman (USA)	2	1.9
Stefan Eriksson (Sweden)	2	1.9

R4. What are the academic disciplines of these authors?

Sixty-seven of the 225 authors in this study were identified as academic librarians (29.8%) while the remaining 158 authors were classified as university faculty or researchers (Figure 2). The academic disciplines of these authors were ascertained based on their academic affiliations and job titles provided in the articles and categorized by using the *Library of Congress Classification* (*LCC*) system. The data retrieved showed that the majority of authors were from the field of Library Science (45.33%), followed by Medicine (15.56%) and Social Sciences (15.56%).

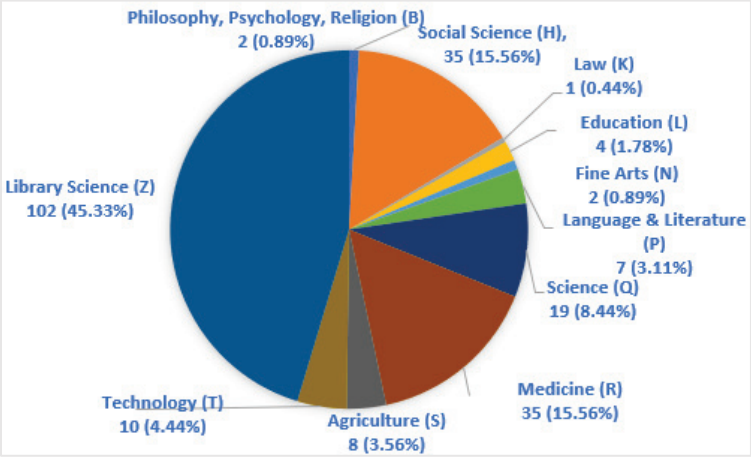

Figure 2 DISPOSITION OF ACADEMIC DISCIPLINE OF THE AUTHORS PUBLISHING ARTICLES ON THE SUBJECT OF PREDATORY PUBLISHING/JOURNALS.

R5. What is the geographic distribution of these authors?

Another objective of studying authorship was to determine if a geographic pattern existed. After the geographic location of these authors was noted, each author was grouped by country and then by continent (Table 4). Such analyses showed that these authors were from 39 countries in six continents, covering Asia (17%), Africa (9%), North America (50%), South America (2%), Europe (21%), and Oceania (1%). Eighty-eight of the 225 authors were originated from the United States (39%) and 24 were from Canada (11%).

Discussion and Conclusion

According to the data retrieved by the methodology of this research, there has been a noticeable increase in the number of articles on the topic of predatory journals published between 2010 and 2020, from no articles in the first three years to a sharp increase beginning in

Table 4. Geographic Distribution of the Authors Publishing Articles on the Subject of Predatory Publishing/Journals

Continent	% of total	Country	# of Authors
Asia	17%	Bangladesh	1
		India	7
		Indonesia	1
		Iran	8
		Japan	6
		Jordan	4
		Kuwait	1
		Malaysia	1
		Russian Federation	5
		Saudi Arabia	1
		Taiwan	1
		Turkey	2
Africa	9%	Egypt	1
		Ethiopia	2
		Ghana	1
		Kenya	4
		Malawi	5
		Nigeria	4
		South Africa	5
North America	50%	USA	88
		Canada	24
South America	2%	Brazil	3
		Colombia	1
Europe	21%	Croatia	1
		Czech Republic	7
		Denmark	2
		Finland	1
		France	1
		Hungary	1
		Ireland	2
		Italy	12
		Latvia	1
		Lithuania	1
		Romania	2
		Spain	7
		Slovak Republic	1
		Sweden	5
		UK	3
Oceania	1%	Australia	2

2015. After Beall proposed the term 'predatory publishers' in 2010 (Beall, 2010), the first article that appeared in the scholarly-review journals in this study was also written by Beall in 2013. It is intriguing that the discussion of predatory publications appears to be nonexistent in the library community in the three years after its initial introduction. It is not until 2014 that three additional academic librarians from the Miami University introduced the concept of a "Faculty Learning Community" comprising faculty, graduate students, staff, and librarians to discuss topics such as OA and predatory publishing (Bazeley, Waller, & Resnis, 2014). It is obvious that academic librarians have played a vital role in alerting the academic community to the dangers of issues surrounding predatory journals. The discussion got off to a slow start but research interests on the subject of predatory practices flourished in subsequent years. Such is evident by the 43-fold increase in the published articles on this matter between 2016-2020.

As aforementioned, a core group of journals publishing articles on the topic of predatory journals accounted for 48% of all the articles and the top five journals were identified. Knowing what journals publish articles on such a pertinent issue can help to facilitate not only the research process but also serials collection development; however, it is important to remember that this list of journals is based on the three selected LIS databases only.

The data used to examine authorship tendencies are consistent with the general principle of Lotka's Law except the exact percentage. Of the 225 authors publishing the articles about predatory journals, only 12 are repeat authors and six of these (2.7%) publish more than twice on the topic. Furthermore, 53 of the 104 articles (51%) are co-authored, ranging from two to nine authors. This is indicative of collaborative research and publishing on the topic.

Either academic librarians (29.8%) or faculty/researchers (70.2%) published these articles on the subject of predatory publishing. In terms of academic discipline, the majority of the articles were from authors in the field of Library Science (45.33%), followed by the Medicine

(15.56%), and the Social Sciences (15.56%). Results of the study indicate authors from a variety of academic disciplines publish articles in the LIS journals, including Philosophy, Psychology & Religion (B), Social Science (H), Law (K), Education (L), Fine Arts (N), Language & Literature (P), Science (Q), Medicine (R), Agriculture (S), and Technology (T). Not only does it reveal scholarly awareness of the predatory issue from all disciplines, but there is a general interest from all disciplines in scholarly conversation through the LIS literatures.

The information regarding the geographic distribution of the authors suggests there is ongoing global awareness of predatory journals and publishing. The authors are from 39 countries and represent every continent except Antarctica: 88 of the 225 authors originated from the United States (39%) and 24 from Canada (11%). Despite the North America dominance, some top-producing authors (Table 3) are from Japan, Nigeria, Demark, Romania, Ireland, and Sweden. This suggests that predatory practices is a topic of global interest.

As long as the need to publish research exists, academic authors are highly likely to encounter predatory practices in their career path. Only when equipped with information literacy about predatory journals and publishers, they are able to distance themselves from predatory publications; this is especially true for early career researchers. Also, in order to achieve high levels of research quality and make genuine contributions to scholarly literature, academic authors are advised to be knowledgeable in the identification of predatory journals and publishers. In this regard, library instruction can be of great help to establish such information literacy. It is the responsibility of academic librarians and scholarly authors to work collaboratively against the pandemic of predatory practices.

To reduce the threat from predatory journals, further actions are needed. Academic authors must pay attention to the dangers of predatory practices. It may help if a monitoring mechanism is established in the tenure and promotion procedure by academic institutions or in the review process by funding agencies. The following monitoring criteria might be useful: 1) checking the proportion of predatory publications in the tenure and promotion application and 2) asking for budget justification on the APC expenditure in grant proposals. Such initiatives are reminiscent of using journal impact factors as a parameter to evaluate promotion and research proposals.

This study in predatory journals is exploratory; other related or further studies are needed for a comparative perspective. For example, applying the same bibliometric techniques in different subject databases to explore the knowledge gaps between the LIS field and other academic communities. A further study could use the same topic but include blogs and/or other non-peer-reviewed literatures to increase sample size. Additionally, this study could be repeated over time to assess whether upward and other trends on the topic remain or not. The data spreadsheet obtained for this study is available upon request.

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