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Research Article

Lured by Likes: Evaluating the Online Visibility of Predatory Journals through Altmetric Indicators

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ABSTRACT

The purpose of this study is to evaluate the influence of questionable journals on social media. Now defunct and apparently western-biased Beall's List was used to identify predatory journals mostly from the non-western countries, and Altmetric Explorer was used to extract the social media attention. The results showed that Beall's list had 1,310 predatory journals as of March 2025, and 7,873 articles from 77 deceptive journals garnered web attention from various social media platforms, with a total Altmetric Attention Score (AAS) of 37,427. The low intake of predatory articles on social media can be considered as a parameter in identifying the deceptive journals. Predatory journals were present on 18 different platforms, with a higher presence on Mendeley, accounting for 234467 (88.13%) mentions, and Twitter, with 20949 (7.87%) mentions. The articles from the journal "Aging" received the highest social attention, with 54,748 mentions for its 4,720 articles. The geographical results showed that web discussions about the questionable articles were predominantly from English-speaking countries, including the United States, the United Kingdom, and Canada. Finally, the study reported a significant, weak positive correlation between Dimensions Citation (DC) and altmetric attention score, with a correlation coefficient value of 0.23 (rho = 0.23, $p \leq 0.001$) for the articles. The present study offers valuable insights for the entire research community on utilising altmetrics as a reliable indicator for identifying predatory journals.

Keywords: Predatory Journals, Questionable Journals, Deceptive Journals, Altmetrics, Social Media Attention, Research Misconduct.

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INTRODUCTION

Research involves applying scientific methods to carefully evaluate and study a specific topic or research subject (Patel & Patel, 2019). The planning, execution, collecting, analysis, and publication of a study are only a few of the coordinated procedures and activities that go into academic research. The process of passing through these stages and publishing a result can be pretty exciting, but there is an ethical code of conduct that applies to researchers at all levels (Sengupta & Honavar, 2017). The rapidly expanding issues of unethical citations, research misconduct, authorship, conflicts of interest, peer review, and improper journal influence measures pose significant challenges that journal editors and publishers often face (Gasparyan *et al.*, 2016). Responsibly, editors are asked to 'clean' the literature by revising or retracting linked articles, even in light of the exponential rise in the number of fraudulent and unethical research papers and wasteful, or 'predatory,' journals (Richtig *et al.*, 2018).

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Predatory publications that pose as reputable publications but are used for financial gain (Happe, 2020). There is a serious academic threat to scientific publishing from predatory publishers, who generate lower-quality scientific and research papers (Shrestha, 2021). Before submitting a manuscript, researchers should verify the journal's quality and peer-review process (Hanafizadeh & Shaikh, 2021). Authors who submit to predatory journals may anticipate acceptance of low-quality works, expedited and simplified publication processes, and accelerated academic promotion, in addition to increased publication counts (Wijewickrema, 2024).

Altmetrics, a statistic that assess the impact of research by taking into account news, blogs, social networking sites, patents, and many other sources (Das & Mishra, 2014). Since Altmetrics calculates the online impact of various study projects and provides the altmetric attention score for individual pieces of literature, it has created a new platform on which academics can promote their work using a range of social networking technologies (Buragohain, 2022). Although many previous altmetric studies have been conducted in various domains, studies examining the social media attention of predatory journals have not been undertaken to date. Chen and Wang (2022) in their study revealed that predatory journals received fewer social media mentions

compared to genuine journals. However, their study was limited by the inclusion of only a few journals indexed in now defunct and apparently western-biased Bealls' List, and a more comprehensive study is required. Thus, the present study has been undertaken with the following objectives to fill the research gap.

OBJECTIVES OF THE STUDY

- To find the year-wise distribution of research outputs with Dimension citation and Altmetric Attention Score of predatory journals.
- To assess the source-wise social media mentions for predatory journals.
- To map geographically the Twitter mentions of predatory journals.
- To measure the correlation between citation and altmetric attention score of predatory journals.

PAST STUDIES

Chen and Wang (2022) attempted to find the novelty of altmetrics in tracing predatory publications. The researchers selected 21 bogus publications from Beall's list and Kscien's list and compared their citations and altmetrics against 18 non-predatory journals from DOAJ. They reported that citations and social media attention were significantly lower for predatory journals compared to non-predatory ones. Thus, altmetrics can be used as a tool to identify predatory journals. Another similar study, conducted by Oermann *et al.*, (2019), revealed that predatory journals from the nursing domain continue to be cited by non-predatory journals. A similar phenomenon is found among marketing journals also (Moussa, 2021).

Furthermore, Oermann *et al.*, (2020) reported that scholarly reports primarily cite predatory publications in the nursing domain. Furthermore, Oermann *et al.*, (2018) found that the majority of predatory publications were published as scientific reports in nursing domains. The quality of predatory journals is very low (Oermann *et al.*, 2018), and they often cease publishing articles after one or two volumes (Oermann *et al.*, 2016). Yeo-Teh and Tang (2021) reported that most authors select predatory publications to avoid a rigorous review process. Although citation analysis of predatory journals has been conducted in many instances, altmetrics studies are scarce, and the current study aims to fill this gap.

METHODOLOGY

The study employs a quantitative approach, utilising a metric-based methodology. Beall's list was accessed in March 2025 to collect the data for the study. Beall's list comprises a total of 1,310 standalone predatory journals as of March 2025 and 77 journals that have been identified as indexed and tracked by Altmetric Explorer. Each journal was copied and searched on Altmetric Explorer to determine whether it had garnered any social attention. The results were then exported to an Excel file for the ensuing analysis. The search output was tabulated individually by year, demography-wise, source-wise, and journal-wise for further analysis. The descriptive analysis method was used for analysing the collected data.

ANALYSIS AND INTERPRETATION

Year-wise distribution of research outputs with DC & AAS

The data in Table 1 shows the year-wise distribution of research outputs, including DC and AAS. It is clear from the table that the highest number of articles was published during the years

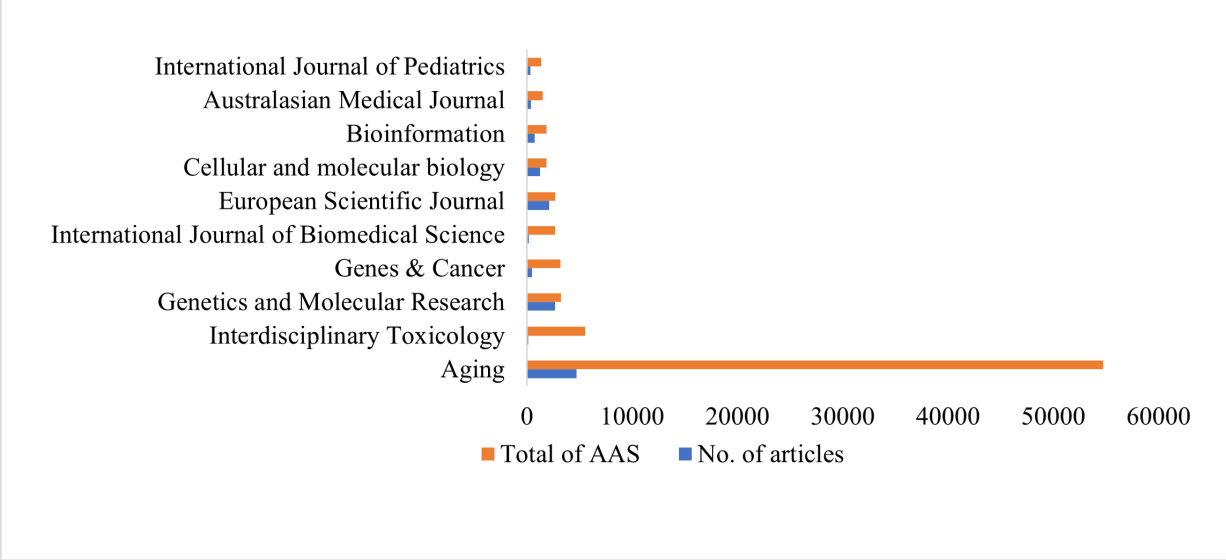

Figure 1: Top 10 journals with highest altmetric attention score.

2015-2019, with 3312 (41.97%), followed by 2010-2014 with 2557 (32.40%). It is observed from the table that the least number of outputs were published from 1970 to 1999, with 9 (0.11%). It is also deduced from the table that a total of 7873 outputs were published from 1970 to 2024. It is noted that from 2015 to 2019, the most Open-Access (OA) articles were published, with 3,199 (42.47%), while most of the Non-Open-Access (NOA) articles were published between 2014 and 2015, with 1,128 (37.65%). The majority of the Dimension citations for the articles were from the years 2010 to 2014, accounting for 387,144 (84.44%). The total AAS for the articles from 1970 to 2024 was 37427.

Source-wise distribution of mentions

Data in Table 2 shows the source-wise distribution of mentions. The articles were found mentioned in 18 different social media platforms. The highest number of mentions was recorded for Mendeley, with 234467 (88.13%) mentions, and the highest event was 5047. Twitter stood as the second source with the highest number of mentions, at 20,949 (7.87%), and the highest event was 2,627. The lowest mentions were recorded from two sources, i.e., LinkedIn and syllabi, with zero mentions, and ranked 18th for both sources.

Top 10 predatory journals with the highest Altmetric attention score

Figure 1 illustrates the top 10 journals with the highest Altmetric attention scores. It is observed that the journal named "Aging" has the highest altmetric attention score of 54748 for its 4720 articles. The journal "Interdisciplinary Toxicology" ranked second with a 5543 Altmetric attention score for its 119 articles, followed by the journal "Genetics and Molecular Research" with a 3221 AAS for its 2656 articles. The journal “Genes and Cancer" has garnered

Table 1: **Year-wise distribution of research outputs with Dimension citation & Altmetric Attention Score.**

Year	N	OA	NOA	DC	AAS
1970 - 1999	9	1	8	144	24
2000 - 2004	40	6	33	889	61
2005 - 2009	285	241	44	12179	1668
2010 - 2014	2557	2438	128	387144	10205
2015 - 2019	3312	3199	105	41144	10364
2020 - 2024	1689	1667	22	16974	15105
Total	7873	7533	340	458474	37427

Table 2: **Source-wise Distribution of Mentions.**

Source of Mention	Total Mention	%	Highest event	Lowest event
Number of Mendeley readers	234467	88.13	5047	0
Twitter mentions	20949	7.87	2627	0
Facebook mentions	3505	1.32	1823	0
News mentions	2474	0.93	163	0
Patent mentions	2082	0.78	208	0
Blog mentions	723	0.27	33	0
Wikipedia mentions	602	0.23	15	0
Video mentions	385	0.14	34	0
Policy mentions	376	0.14	22	0
Google+ mentions	198	0.07	132	0
Reddit mentions	152	0.06	8	0
Peer review mentions	97	0.04	5	0
F1000 mentions	16	0.01	1	0
Q&A mentions	6	0.00	1	0
Weibo mentions	1	0.00	1	0
Pinterest mentions	1	0.00	1	0
LinkedIn mentions	0	0.00	0	0
Syllabi mentions	0	0.00	0	0

3205 AAS and is in fourth position. The "European Scientific Journal" published 2,100 articles during the investigative period and achieved a total Altmetric score of 2,650. The "International Journal of Pediatrics" ranked 10th, with 327 articles and a total AAS of 1367.

Geographical distribution of Twitter Mentions

Figure 2 illustrates the geographical distribution of Twitter mentions related to the predatory articles. It lists the top ten countries with the highest number of Twitter mentions. The highest number of Twitter mentions came from the United States, with 4,383 (23.37%) mentions from 2,042 (21.57%) profiles, followed by the United Kingdom with 855 (4.56%) mentions from 475 (5.02%) profiles. Canada and Spain occupied the third and fourth positions with 403 (2.15%) and 359 (1.91%) posts from 310 (3.27%) and 259 (2.74%) profiles, respectively.

Correlation between altmetric attention score and Dimension citation

Figure 3 shows the results of the Spearman correlation applied between citations and altmetric attention score. The result showed a significant weak positive correlation between these two metrics, with a correlation coefficient value of 0.23, and the test is significant (rho = 0.23, $p \leq 0.001$).

RESULTS AND DISCUSSION

This study on predatory journals provides significant insight into the social media attention of predatory journals, utilising Beall's list and Altmetric Explorer. The result showed that Beall's list had 1310 predatory journals as of March 2025, and only 77 deceptive journals garnered social attention. The low coverage of these types of journals on social media suggests that they are not widely

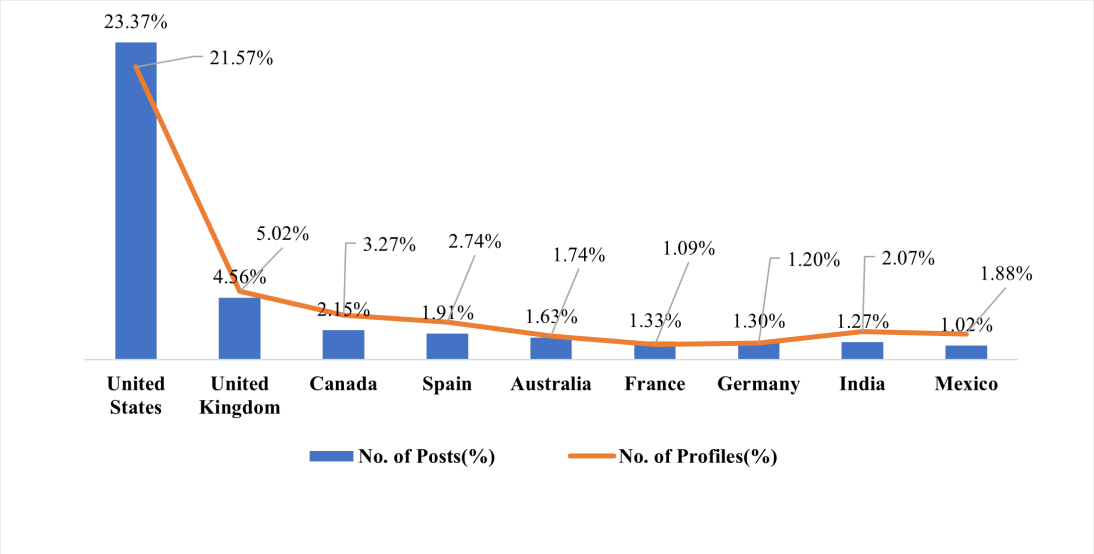

Figure 2: Geographical Distribution of Twitter Mention.

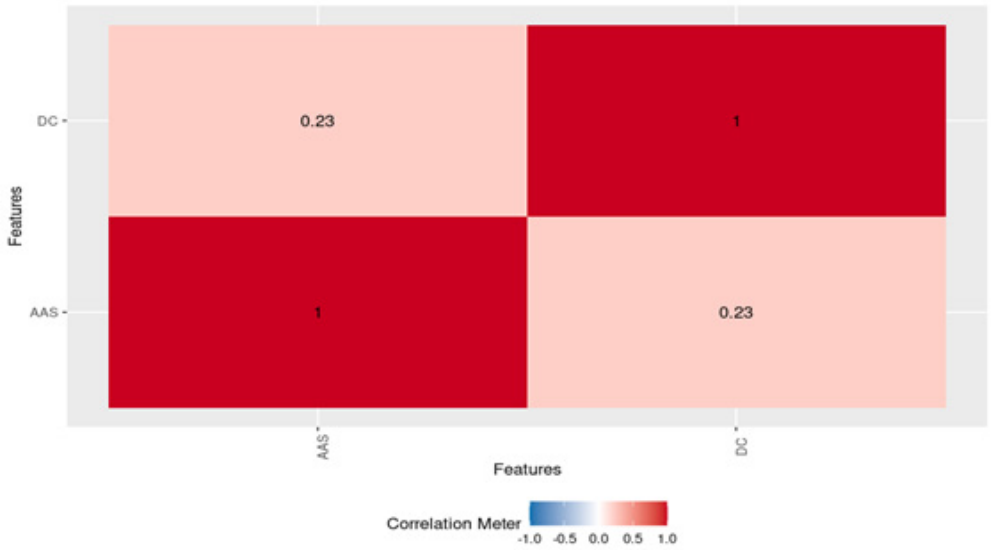

Figure 3: Correlation between DC and AAS.

accessible, a finding supported by a previous study (Chen & Wang, 2022). The low coverage is likely due to the non-availability of DOIs for the articles (Brainard, 2020). A recent 2022 report revealed that 24% of respondents who participated in a survey had knowingly published in predatory journals and attended such conferences with permission from their affiliating institutions (Vilhelmsson, 2022). The results show that OA articles outnumber NOA articles in predatory publications, indicating that many of the victims fell for the spam email invitation to submit an article (Tomlinson, 2023). Interestingly, predatory journals are getting higher social media mentions through platforms like Twitter and Facebook. A previous study revealed that mentions for these bogus articles would be less frequent on social media platforms, and they rarely receive mentions, retweets, or replies from other users.

In contrast, non-predatory journals interact with distinct, unique users roughly once in every three Tweets (Nishikawa-Pacher, 2024). The mentions of questionable journals were high from the USA, UK, and Canada, indicating that English-speaking countries discuss predatory journals more frequently than others. Finally, the study revealed a significant weak positive correlation between altmetric score and citation for the predatory articles. Regardless of their online prominence, predatory journals acquire less legitimate scholarly citations because they frequently publish poor-quality or unreviewed material (Bjork *et al*., 2020).

CONCLUSION

Monitoring Altmetrics can help researchers and institutions identify predatory publications that lack genuine impact or engagement. Predatory publications can be identified with the help of Altmetrics, which provide insights into online engagement, usage metrics, author impact, and citation patterns. Predatory journals are widely available on social media, suggesting that even though they lack academic credibility, they can still reach a broad audience. This study suggests the importance of awareness among scholars, researchers, and the general public regarding the risks associated with predatory journals.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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