

# Citations to questionable journals threaten research integrity: bibliometrics as a key actor in the detection

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# Introduction



# Citations are adopting different shapes

Coercive citations	Citation contagion	Gift citations	Honorary citations	Citation stacking
Citation cartels	Citation clubs	Under-citations	Over-citations	Citation bias
Citation mafia	Citation inflation	Citation farms	Citation amnesia	Citation contamination



# Research questions

Q1: How many publications included in a citation database are citing questionable journals?

Q2: What scientific discipline do they belong to?

Q3: Which countries have the highest concentration of citations to these journals?

Q4: Do these publications have a high impact?

Q5: Do they involve international collaboration?



# Data and methods

The Directory of Open Access Journals (DOAJ) is highly regarded as one of the most reliable databases of open-access journals.

We chose the journals excluded from DOAJ in the course of the year 2018 for 'Suspected misconduct from the publisher'. In 2018, DOAJ removed a total of 57 journals, the exact time and specific reason for academic misconduct was not declared.

We examined all 57 journals to select only the journals with unique titles and ISSN to make sure none had homonymy problems. Out of the 57, only 21 had exclusive titles.

We employed the Scopus citation database to examine the number of documents that are still referencing the journals that were eliminated from DOAJ.

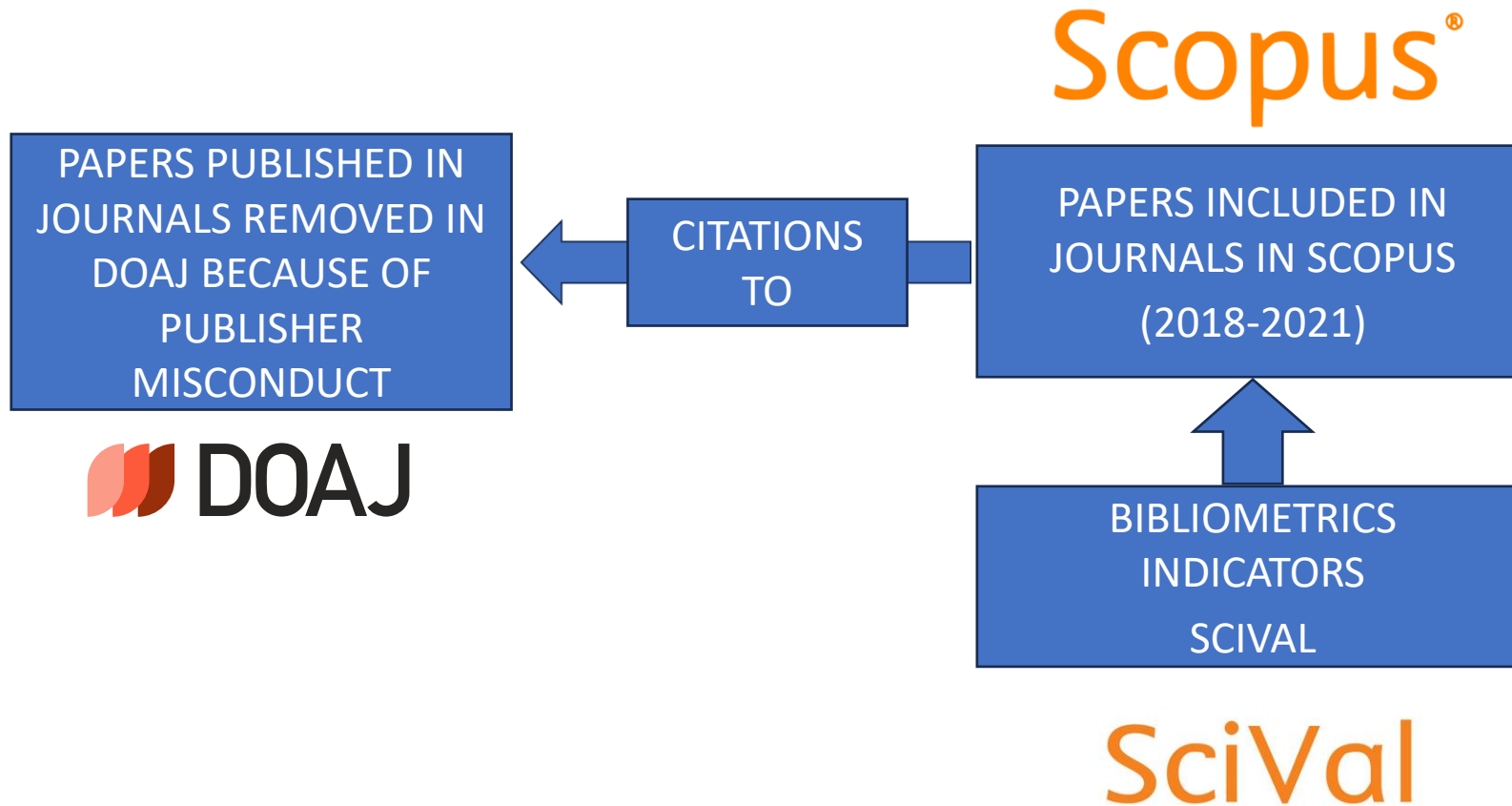
A total of 15,268 research outputs (articles, reviews, conference proceedings) published from 2018 to 2021 in journals indexed in Scopus. These outputs referenced our sample of journals removed from DOAJ by suspected editorial misconduct by the publisher. The data was downloaded in September 2021.

To analyse the citations in more detail, we used the analytical tool SciVal



# Experiment with a citation database

A citation network is formed by connecting research papers as nodes and directing links between them, such as a link from a citing paper to a cited paper.



# Results

	Overall	2018	2019	2020	2021
International Collaboration (%)	19.4	14.5	17.6	20.2	27.5
Scholarly Output	15,268	3,309	4,383	5,075	2,501
Citations	50,871	17,720	17,745	12,892	2,514
Field-Weighted Citation Impact	1.02	0.75	0.84	1.01	1.74
Outputs in Top Citation Percentiles (top 10%, field-weighted)	10.3	7.1	7.8	11.4	16.6
Publications in Top Journal Percentiles (top 10% by CiteScore Percentile)	9.1	5.8	6.8	10.4	13.8
Citations per Publication	3.3	5.4	4	2.5	1

Table 1. Bibliometric indicators applied to the set of publications citing the questionable journals.



# Results

CiteScore	
Q1 (top 25%)	2899
Q2 (top 26% - 50%)	3708
Q3 (top 51% - 75%)	3439
Q4 (top 76% - 100%)	2371
Open Access	
All Open Access	7291
Gold	3597
Hybrid gold	979
Bronze	2038
Green	2970

Table 2. Type of journal and open-access publications

Countries	Number of publication citing questionable journals	Scientific production	Citing questionable per publication
India	3,459	759209	0.456
Indonesia	1,853	163350	1.134
China	1,491	2687125	0.055
Malaysia	1,391	139835	0.995
Iraq	813	53225	1.527
Italy	630	506836	0.124
United States	596	2,647,535	0.023
Saudi Arabia	514	124325	0.413
Morocco	508	34440	1.475
Iran	437	255038	0.171
Algeria	433	32011	1.353
Pakistan	345	101226	0.341
United Kingdom	343	841011	0.041
Egypt	322	107493	0.3
Turkey	290	201123	0.144
Russian Federatio	274	423332	0.065
Viet Nam	271	53014	0.511
Nigeria	270	47844	0.564
South Korea	257	347362	0.074
France	247	461551	0.054

Table 3. Countries citing the sample set of questionable journals.





# Results

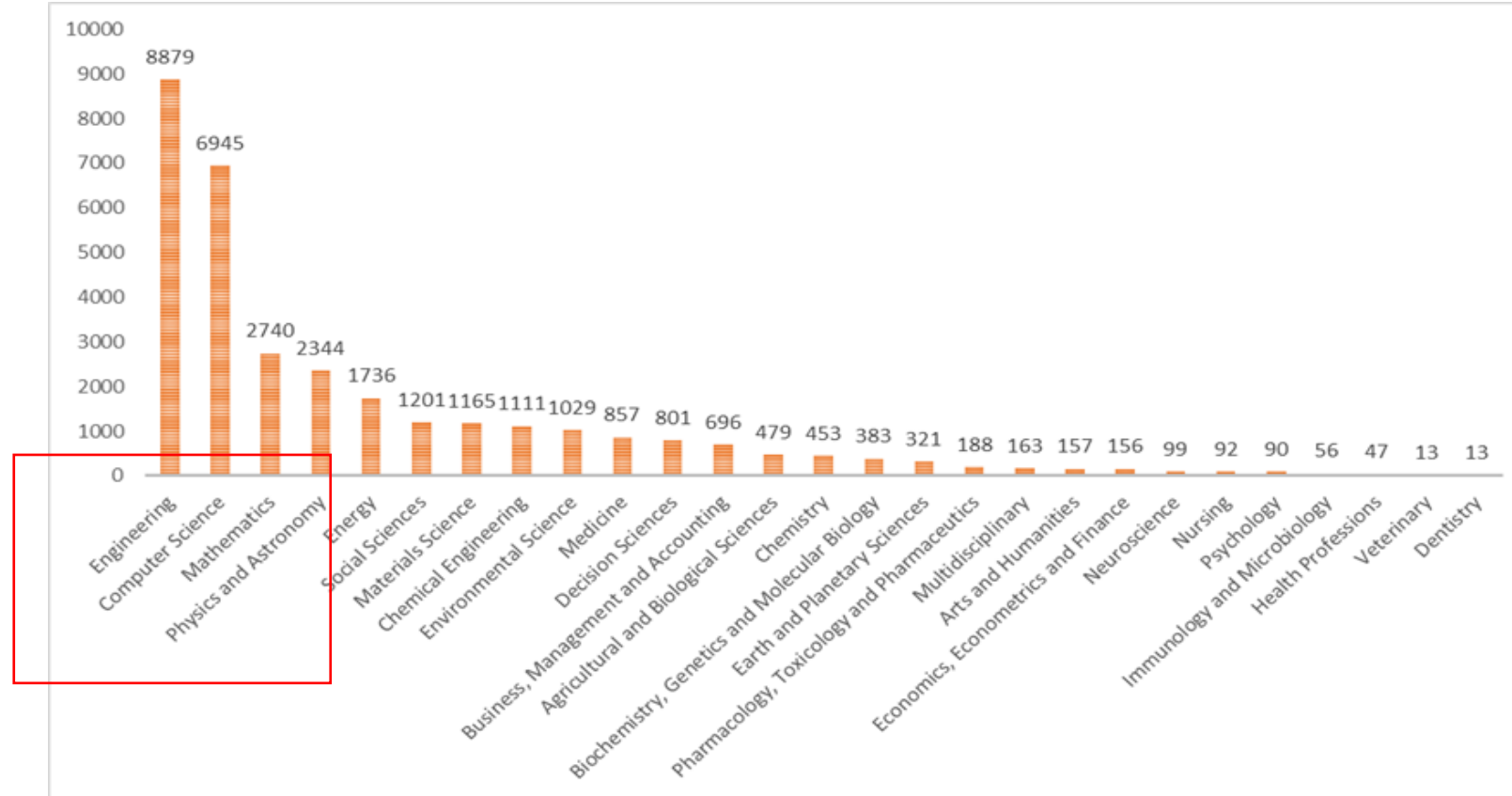


Figure 1. Subject areas of the outputs that cite the questionable journals.



# Conclusions

- We found that 15,268 outputs published between 2018 and 2021 in Scopus have cited some of these 21 journals.
- Almost 20 % of these publications were produced in collaboration with international countries.
- 10.3 % of them are included in the highest citation percentiles worldwide and 9.1 % of these outputs were published in the 10 % top journal percentiles.
- 53 % were non-open access journals, demonstrating that it is not just an issue with OA journals.
- As researchers, we must be aware of any potential citations to questionable journals. Peer reviewers and journal editors play a crucial role in the publishing process by acting as the primary checkpoint in the detection of such issues.
- However, it is important to note that simply citing a publication in a questionable journal does not automatically mean that the citing work is unethical.
- This research intends to bring visibility to the issue of citing papers from questionable journals.
- We must use our judgment to decide what is of high quality.



# DOAJ no longer uses the 'Suspected misconduct from the publisher' label in the removed journals list.

Instead, the journals previously belonging to this category are in the label **Journal not adhering to Best practice**.

They decided to start using the more neutral reason of not adhering to best practices and this is also more in line with their policy on rejection, where they do not make public information on the reasons journals are not accepted for inclusion in DOAJ.

Journals already accepted into DOAJ may be removed if they are found to be no longer adhering to DOAJ criteria or publishing best practices. This label is used for a range of issues from journals not adhering to our criteria for inclusion and publishing best practices to questionable practices. The fact that a journal was removed for this reason does not necessarily mean it is questionable.



# Thank you for your attention

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