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## An assessment of the DOAJ-Published Open Access Mechanical Engineering Journals

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### Abstract

The current study uses information gathered from DOAJ to analyse open access journals in the subject of mechanical engineering. It draws attention to many aspects of open access publishing, such as licencing, financing mechanism, publisher, language, and country of publication. In the area of mechanical engineering, DOAJ has registered 301 open access journals that are published by scholarly institutions, various organisations, diverse societies, well-known research centres, and commercial publishers. According to the report, eminent publishers have participated in the open access publication of journals from 44 different nations worldwide. The UK leads the list, followed by Switzerland and Indonesia, in that order. The mechanical engineering publications are published in fifteen languages, the most preferred being English. Normal peer review procedures are used by DOAJ. In the case of mechanical engineering journals, it has been discovered that anonymous peer review and double anonymous peer review are used because they assure a fair and accurate assessment of the publications. About 91.03 percent of the open access journals in mechanical engineering are not marked with the DOAJ seal and a few journals are marked with the DOAJ seal.

**Keywords:** Open Access Journals, Mechanical Engineering, DOAJ

### 1. Introduction

Everyone involved in the system of scholarly information transmission has profited from the open access movement. It has benefited writers and scholars by making their work more visible and impactful. Simultaneously, technology has made it possible for people to obtain information from all over the world with only a mouse click (Singh N). At Lund University in Sweden, the Directory of Open Access Journals was first introduced in 2003 with 300 open access journals. As of right now, it has over 20213 open access publications spanning the fields of science, technology, medicine, social science, and the humanities. With the goal of serving as the hub for all information searches for a top-notch, online directory that indexes and makes accessible top-notch, peer-reviewed open access content, DOAJ is a community-curated list of open access journals. 9,646, 344 articles may be searched online using this site, and all material is publicly accessible. Its goal is to improve scientific research publications' worldwide exposure, accessibility, reputation, usage, and influence through peer-reviewed, open access, irrespective of subject matter, location, or language. DOAJ is dedicated to remaining completely autonomous and allowing anybody to use or reuse all of its services and information.

As an autonomous, non-profit organisation, DOAJ receives all of its income from contributions; 80% come from academic institutions and the remaining 20% come from individual donors. Infrastructure Services for Open Access C.I.C. (Community Interest Company), a UK-based organisation, is in charge of managing DOAJ. The members of DOAJ's Advisory Board serve on a voluntary basis. DOAJ collaborates with many different kinds of organisations. The relationship might take many different forms, such as work agreements, joint ventures, or access to data sources that help with the application evaluation procedure. About 100 volunteer editorial staff members are employed by DOAJ to assess submissions. Before they may do their tasks, volunteers are required to sign and return an agreement and a code of conduct to DOAJ. The Code of Conduct requires all volunteers to notify the Managing Editors of any conflicts of interest.

## 2. Objectives

### The objectives of the present study are:

- To identify the leading publishers of open access journals in mechanical engineering;
- To determine language-wise distribution of journals;
- To find out the type of licensing;
- To study the geographical and language wise distribution of journals in DOAJ;
- To study peer reviewed type of journals.

## 3. Scope and limitation of the study

- Present study is limited to Mechanical Engineering subjects in DOAJ indexed.
- Present study is limited to up to 20<sup>th</sup> December 2023.
- Scope of the present study is 301 Mechanical Engineering Journals.

## 4. Research Methodology

The present data were collected by visiting the URL (<https://doaj.org/>) of DOAJ period coverage up to 20<sup>th</sup> December 2023. There are 301 mechanical engineering journals registered in the DOAJ database. The data was analysed according to the objectives and presented in tabular form with simple percentages.

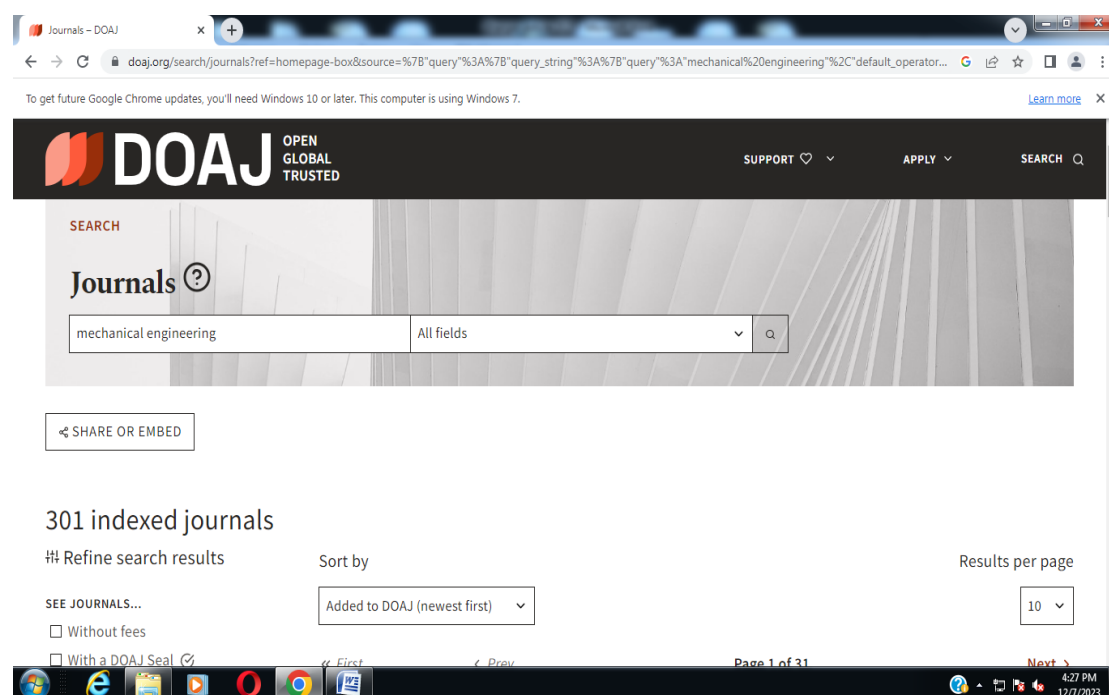


Figure 1: Search Results of DOAJ (as on 20/12/2023).

## 5. Data analysis and Interpretation

**Table 1: Publishers wise distribution open access journals in Mechanical Engineering**

S.No	Name of the Publisher	Journals	Percentage
1	Elsevier	12	3.986711
2	MDPI AG	12	3.986711
3	Springer	10	3.322259
4	Wiley	9	2.990033
4	Taylor and Francis	8	2.657807
5	KeAi Communications Co., Ltd.	6	1.993355
6	The Japan Society of Mechanical Engineering	5	1.66113
7	Hindawi Limited	5	1.66113
8	Frontiers Media SA	4	1.328904
9	Oxford University Press	4	1.328904
10	SAGE Publishing	4	1.328904
11	Sciendo	4	1.328904
12	Copernicus Publications	3	0.996678
13	EDP Sciences	3	0.996678

27	14 publishers 2 journals each	28	9.302326
211	184 publishers 1 journal each	184	61.12957
<b>TOTAL</b>		<b>301</b>	<b>100</b>

Table 1 shows that 211 publishers are involved are publishing 301 mechanical engineering open access journals in DOAJ. Out of 211, 184 publishers publish only a single open access journal, while 14 publishers publish more than one open access journal. Elsevier Publishing Company publishes 12 (3.99%) journals and MDPI AG publishers (12 journals), followed by Springer (10 journals), Wiley (9 journals), Taylor and Francis (8 journals), etc.

**Table 2- Country-wise distribution open access journals in Mechanical Engineering**

S.No	Name of the Country	Number	Percentage	Cumulative Number	Cumulative Percentage
1	UK	41	13.62126	41	13.62126
2	Indonesia	31	10.299	72	23.92027
3	Switzerland	19	6.312292	91	30.23256
4	Poland	19	6.312292	110	36.54485
5	Iran	16	5.315615	126	41.86047
6	China	15	4.983389	141	46.84385
7	Germany	11	3.654485	152	50.49834
8	Ukraine	10	3.322259	162	53.8206
9	Japan	10	3.322259	172	57.14286
10	USA	9	2.990033	181	60.13289
11	Iraq	9	2.990033	190	63.12292
12	Serbia	9	2.990033	199	66.11296
13	Romania	9	2.990033	208	69.10299
14	Egypt	8	2.657807	216	71.7608
15	Russia	7	2.325581	223	74.08638
16	Malaysia	7	2.325581	230	76.41196
17	Turkey	6	1.993355	236	78.40532
18	Colombia	6	1.993355	242	80.39867
19	India	6	1.993355	248	82.39203
20	Italy	5	1.66113	253	84.05316
21	Hungary	4	1.328904	257	85.38206
22	Spain	4	1.328904	261	86.71096
29	7 countries 3 journals each	21	6.976744	282	93.68771
37	6 countries 2 journals each	12	3.986711	294	97.67442
44	7 countries 1 journal each	7	2.325581	<b>301</b>	<b>100</b>

Table 2 shows that the contributions of mechanical engineering open access journals in DOAJ from fourty four countries. Out of fourty four countries, United Kingdom (UK) has a maximum number of contributions i.e. 41 (13.62% of total journals), followed by Indonesia 31 (10.30%), Switzerland and Poland 19 each (6.31%), Iran 16 (5.32%), China 15 (4.98%) and Germany 11 (3.65%) respectively. These 7 countries are contributed 5.50 percent of the journals and the remaining percent of the journals are contributed by other countries.

**Table 3- Language-wise distribution open access journals in Mechanical Engineering**

S.No	Language	Number	Percentage	Cumulative Number	Cumulative Percentage
1	English	221	73.42193	221	73.42193
2	Indonesian	17	5.647841	238	79.06977
3	Spanish	13	4.318937	251	83.3887
4	Russain	11	3.654485	262	87.04319
5	Protguese	4	1.328904	266	88.37209
6	Chinese	5	1.66113	271	90.03322
7	Ukrainian	4	1.328904	275	91.36213
8	French	3	0.996678	278	92.3588
9	Arabic	5	1.66113	283	94.01993
10	Turkish	3	0.996678	286	95.01661
11	Persian	5	1.66113	291	96.67774
12	Romanian	2	0.664452	293	97.34219
13	Japanese	2	0.664452	295	98.00664
14	Polish	2	0.664452	297	98.6711
15	Other languages	4	1.328904	<b>301</b>	<b>100</b>

Table 3 shows that the information about the language wise publication of open access journals in mechanical engineering. Open access journals in mechanical engineering are published in 15 different languages. Out of 301 journals, 221 (72.42%) journals are published in English language, followed by 17 journals (5.65%) are in Indonesian, 13 (4.32%) journals are in Spanish language. The four languages are contributed more the eighty percent of the journals in mechanical engineering.

**Table 4- Publication fee of open access journals in Mechanical Engineering**

S.No	Type of Journals	Number	Percentage
1	Without Article Processing Charges (APCs)	153	50.83
2	With Article Processing Charges	148	49.17
<b>TOTAL</b>		<b>301</b>	<b>100.00</b>

Table 4 shows that out 301 journals, 153 (50.83%) journals asked for article without processing charges for publications and 148 (49.17%) journals had with article processing charges.

**Table 5- Peer reviewed processes of open access journals in Mechanical Engineering**

S.No	Type of Review	Number	Percentage
1	Anonymous peer review	152	50.50
2	Double anonymous peer review	110	36.55
3	Peer Review	35	11.63
4	Open Peer Review	2	0.66
5	Editorial Review	2	0.66
<b>TOTAL</b>		<b>301</b>	<b>100.00</b>

Table 5 shows that out of 301 journals, 152 (50.50%) open access journals are anonymous peer review, 110 (46.55%) journals are double anonymous peer review, 35 (11.63%) journals are peer review, and 2 (0.66%) each journals are open peer review and educational review respectively.

### Licensing Models

The Creative Commons (CC) licences have been a fantastic platform for guiding open access content to famous levels based on the accessibility of the publishers/authors. Creative Commons licences are flexible licences that allow copyrighted works to be freely distributed. Authors can utilise a creative common licence to provide readers permission to read, use, share, and cite their work in a standard way. A Creative Commons licence allows authors to be more creative while also protecting users from copyright violations. CC Licensing in various forms is approved by the journals. BY, NC, SA, and ND elements are included in the CC Licenses.

**Table 6- Licensing model of Mechanical Engineering open access journals**

S.No	Acronym	License Description	Number	Percentage
1	CC BY	Creative Common Attribution	167	55.48
2	CC BY-NC-ND	Attribution-Non Commercial- No Derivatives	53	17.61
3	CC BY-NC	Attribution-Non Commercial Uses	46	15.28
4	CC BY SA	Attribution-Share Alike	11	3.66
5	CC BY-NC-SA	Attribution-Non Commercial- Share Alike	14	4.65
6	CC BY-ND	Attribution-No Derivatives	7	2.33
7	CC 0	Creative Common Zero	1	0.33
8	Publishers own Licence		2	0.66
<b>TOTAL</b>			<b>301</b>	<b>100.00</b>

Table 6 shows that that 55.48 percent of open access journals in mechanical engineering use CC BY licensing, followed by 53 (17.61%) journals are CC-BY-NC-ND, 46 (15.28%) journals are CC-BY-NC, 11 (3.66%) journals are CC-BY-SA, 14 (4.65%) journals are CC-BY-NC-SA, 7 (2.33%) journals are CC-BY-ND, 1 (0.33%) journals are CC0 and 2 (0.66%) journals are own license.

**Table 7- DOAJ seal wise distribution of journals in Mechanical Engineering**

S.No	DOAJ Seal	Number	Percentage
1	Yes	27	8.97
2	No	274	91.03
<b>TOTAL</b>		<b>301</b>	<b>100.00</b>

It is evident from Table 7 that 91.03 percent of the mechanical engineering open access journals lack a DOAJ seal and 8.97 percent of the journals are marked with a DOAJ seal.

**Table 8- Year wise added mechanical engineering open access journals in DOAJ**

S.No	Year	Number of Journals added	Percentage	Cumulative Number	Cumulative Percentage
1	2023	36	11.96013	36	11.96013
2	2022	46	15.28239	82	27.24252
3	2021	39	12.95681	121	40.19934
4	2020	21	6.976744	142	47.17608
5	2019	19	6.312292	161	53.48837
6	2018	27	8.9701	188	62.45847
7	2017	26	8.637874	214	71.09635
8	2016	20	6.644518	234	77.74086
9	2015	18	5.980066	252	83.72093
10	2014	8	2.657807	260	86.37874
11	2013	17	5.647841	277	92.02658
12	2012	6	1.993355	283	94.01993
13	2011	4	1.328904	287	95.34884
14	2010	5	1.66113	292	97.00997
15	2009	2	0.664452	294	97.67442
16	2008	2	0.664452	296	98.33887
17	2007	1	0.332226	297	98.6711
18	2006	3	0.996678	300	99.66777
19	2005	1	0.332226	<b>301</b>	<b>100</b>

Table 8 shows that a total 301 open access journals were added in mechanical engineering during the between the years 2002 – 2023. Out of the 301 journals, 46 (15.38%) journals added in the year 2022, 39 (12.96%) journals were added in the year 2021, 36 (11.96%) journals were added in the year 2023, 21 (6.98%) journals were added in the year 2020, 19 (6.31%) journals were added in the year 2019. These five

years (53.49%) percent of open access journals were added in mechanical engineering. The remaining (46.41%) percent of journals were added during the fourteen years.

## 6. Conclusion

Open access papers are growing more and more popular worldwide in a wide range of fields. There are now more open access journals available thanks to the introduction of new journals and the conversion of for-profit publications to an open access model. Publishers have also adopted a more supportive stance towards open access. The number of open access journals is increasing every day, which is a positive indication for this theory. DOAJ has registered 301 journals in the field of mechanical engineering which are published by the academic institutions, different organizations, varied societies, renowned research centers and also by commercial publishers. Prominent publishers have taken part in open access publication of journals which belong to 44 countries of the world and United Kingdom (UK) tops the list followed by the Indonesia and Switzerland respectively. The journals in mechanical engineering are published in 15 languages with English being the most preferable one. Open access journals are either published after receiving requisite publication charge from the authors or they are published free of cost by some publishers. In mechanical engineering journals, 50.83 percent of the journals are published free of cost and rest of them require an article processing fee before their publication.

Writers should be able to identify predatory journals and be aware of predatory publishers before they pay any publishing costs for their articles. DOAJ adheres to a set protocol for peer review before publishing in a journal. In the case of mechanical journals, it has been discovered that anonymous peer review and double anonymous peer review are used because they assure a fair and accurate examination of the publications. These also provide protection to the author and reviewer from criticism. The greatest and most widely accepted licence for people to read, share, use, and cite their copyrighted work is the Creative Commons (CC) licence. In the discipline of mechanical engineering, 61.73 percent of journals have a Creative Commons licence, indicating that the frontiers of open access mechanical engineering journals in DOAJ are expanding. The DOAJ seal is a symbol of the directory's open access journals' certification. The seal is only given to journals that have been indexed in DOAJ. DOAJ seal is awarded by DOAJ to the journals that achieve high level of openness, follow best practices and high publishing standards. About 91.03 percent of the journals in mechanical engineering are not marked with DOAJ seal and a few journals are marked with DOAJ seal. More than fifty percent of the journals in mechanical engineering were added last five years i.e. from 2019 to 2023.

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