

## **An Analysis of Open Access Publication Productivity of Science and Technology in DOAJ: An Overview**

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### **Abstract**

Open Access literature is a providing universal access to information and knowledge. "Open Access" is a term used to explain a new technique of access to literature, that is, any reader has access to literature on the Internet at no cost. The basic purpose of this study is to provide a broad view of role towards open access journal movement, particularly the number of journals added in technology discipline in the Directory of Open Access Journals (DOAJ). Open Access articles are freely available online. Open access has make wider the possibilities both for disseminating one's own research and at the same time accessing the research work of others. Electronic publishing improved the way most researchers access literature in their field. Currently, Open Access is changing the way electronic resources are distributed. In this context the study has made an attempt to know the Open Access Science articles in DOAJ published during 2000 to 2018. It also made an attempt to know the number of Science articles published by various, countries, publishers and also in various languages.

**KEYWORDS:** DOAJ, Open Access, Literature Productivity and Technology

### **Introduction**

Open Access literature is a providing universal access to information and knowledge. "Open Access" is a term used to explain a new technique of access to literature, that is, any reader has access to literature on the Internet at no cost. The copyright owner more often than not the author enables the client to honestly examine, download, duplicate, print, circulate, look, connection to the full content of the article, slither it for ordering, convert the revealed information to programming, or utilize the article for some other legal reason (Kwan, 2003). Therefore, the best method to make the information available to the major part of the world is to go for Open Access mode of publishing, which overcomes obstacles between information and user. (Rather and Shah, 2008).

The open access journals in the opinion of many researchers, is considered to be a case of difficult innovation that is revolutionizing the industry. Analyzes the traditional journal publishing system, the recent open access models of journal publishing as an evolving phenomenon, the nature and extent of open access as a troublesome innovation and the implications for key stakeholders. The open access publishing has gained traction because technology has contributed to lower publication costs, easier access to research articles, and speedier publishing processes. The open access has not significantly impacted traditional publishers because of strategies employed by the major publishers and slow adoption of open access by some researchers (Allahar, H. 2017).

Keeping in view, the study has been made an attempt to know the availability of open access articles in the field of Technology in Directory of Open Access Journals (DOAJ). The study is also aims to know the yearwise growth of articles, language and subject wise publication of articles.

### Directory of Open Access Journals (DOAJ)

The study is confined only to know the availability of Open Access journals in Technology subject in DOAJ which was launched in the year 2003 at Lund University, Sweden. It has started with **300** open access journals and today it contains **12,439** open access journals, **3,670,160** Articles and **129** Countries have been contributing their scholarly literature to DOAJ. It covers all areas of science, technology, medicine, social science and humanities. In order to know the availability of Open Access journals related to Science subject in DOAJ, the term “**Technology**” has entered in the search box of the DOAJ website. A total of **257** journals and **1,17,243** Articles relating to Technology are retrieved. Further, the journals have been classified according to Subject, language, year and publishers.

### Analysis and Interpretation of Data

#### Subject wise distribution of Articles in DOJA

**Table -1: Subject wise distribution of Articles in DOJA**

Subject	Total	Percentage (%)
Engineering	43500	32.01
Applied optics, Photonics	8146	6.01
Electronics	7524	5.55
Physics	6968	5.14
Microscopy	6953	5.13
Descriptive and experimental mechanics	6953	5.13
Technology (General)	5485	4.05
Biology (General)	5112	3.77
Environmental sciences	4593	3.39
Chemistry	4589	3.39
Environmental technology. Sanitary engineering	4582	3.38
Geography. Anthropology. Recreation	4484	3.31
Chemical technology	4331	3.20
Science (General)	4023	2.97

Table-1 shows the distribution of DOJA articles by subjects among the top fourteen subjects, the majority of articles are published by Engineering (32.01%), followed by Applied optics (6.01%) and Electronics (5.55%).

#### Top Ten Publishers

**Table – 2: Top Ten Publishers**

Publishers	No. of Articles	Percentage (%)
MDPI AG	21862	36.25
Copernicus Publications	12244	20.30
Hindawi Limited	3205	5.31
Agro print Timisoara	2187	3.63

Prince of Songkla University	1981	3.28
Lembaga Penelitian dan Pengabdian kepada Masyarakat (LP2M)	1855	3.08
Universidad National de Colombia	1747	2.90
Beilstein-Institute	1614	2.68
Belarusian National Technical University	1392	2.31
Editura University din Oradea	1324	2.20

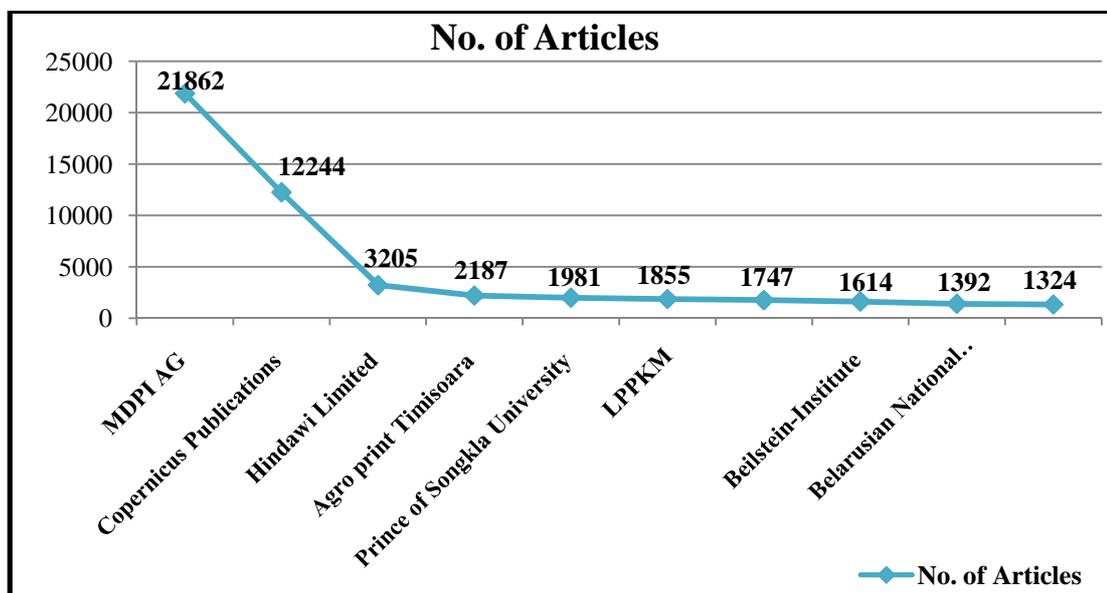


Figure-1: Number of articles added by top ten Publishers

Table-2 shows the distribution of DOJA articles by various publishers. Among the top ten publishers, the majority of articles are published by MDPI AG (36.25%), followed by Copernicus Publications (20.30%) and Hindawi Limited (5.31%) The study has also found that very less percentage of articles published by Editura University din Oradea 1324 (2.20%).

### Distribution of Articles by Language

Table – 3: Distribution of Articles by Language

Language	No. of Articles	Percentage (%)
English	69517	71.25
Spanish	10419	10.68
Indonesian	5411	5.55
Portuguese	3872	3.97
Russian	2063	2.11
Romanian	1333	1.37
Lithuanian	1121	1.15
Persian	932	0.96
Turkish	862	0.88
Arabic	461	0.47
French	435	0.45
Chinese	423	0.43
Polish	236	0.24
German	227	0.23
Ukrainian	127	0.13

Malay	50	0.05
Italian	46	0.05
Czech	31	0.03
<b>Total</b>	<b>97566</b>	<b>100.00</b>

Table-3 shows the majority of the articles have published in English Language (71.25%) followed by Spanish (10.68%) and Indonesian (5.55%). The data presented in the table also shows that of (0.03%) open access journals are published from Czech language respectively.

#### Number of Articles added to DOJA by Year

**Table – 4: Number of Articles added to DOJA by Year**

<b>Year</b>	<b>No. of Articles published</b>	<b>Percentage (%)</b>
2018	15862	20.04
2017	12381	15.64
2016	9532	12.04
2015	7337	9.27
2014	6200	7.83
2013	5824	7.36
2012	6087	7.69
2011	3938	4.97
2010	3453	4.36
2009	2156	2.72
2008	1647	2.08
2007	1451	1.83
2006	862	1.09
2005	788	1.00
2004	624	0.79
2003	366	0.46
2002	279	0.35
2001	214	0.27
2000	170	0.21
<b>Total</b>	<b>79171</b>	<b>100.00</b>

Table-4 reveals the number of articles added in DOJA in different years. The majority of articles added in the year 2018 (20.04%) and in the year 2017 (15.64%). It is also observed from the study that (12.04%) of articles added in year 2016 and (9.27%) in the year 2015. The table also shows that very less percentage of articles have been added in the year 2000 (0.21%), 2005(1%) and 2010 (4.36%).

#### Discussion and Conclusion

In the present study, explained the number of Open access articles published in DOAJ in the study based on articles added in Subject, Publisher, Language and year wise. The study found that majority of articles have been published from Engineering (32.01%), followed by Applied optics (6.01%). The highest number of articles added in the year 2018 (20.04%) followed by 2017 (15.64%). the majority of articles are published by the publisher MDPI AG (36.25%) followed by Copernicus Publications (20.30). DOAJ is comprehensive and covers open access scientific and

scholarly journals that use an appropriate quality control system, and it will not be limited to particular languages or subject areas.

Open Access publishing as it overcomes financial, institutional, valid, reality boundaries among data and client on one hand and on the other, it expands availability, brings more great visibility and effect, get used to the research, authorize better evaluation of research, builds quality of research, and keeps away from copy actions in research. Directory of Open Access articles need to increase the visibility and ease of use of open access scientific and scholarly articles there by promoter their increased usage and impact. The research scholars, scientists, professionals should browse the DOAJ site and access the free online articles on their subject areas it is also suggested that scientists and research scholars should publish their research work in online open access journals for wider visibility of their research work and for greater impact factor and citation index.

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