
A BIBLIOMETRIC ANALYSIS OF DIRECTORY OF OPEN ACCESS JOURNALS (DOAJ) : ENVIRONMENTAL SCIENCE (1972-2013)

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Abstract :

The Directory of Open Access Journals (DOAJ) provides open access to scientific and scholarly journals, that meet high quality standard by exercising peer review and is free to all from the time of publication based on the Budapest open access initiative. Using 140 fully open access electronic journals published uninterruptedly since 1972-2013 in the field of Environmental Science. The present study author investigated the total 140 free full text with abstracts online journals were accessed through DOAJ and analyzed based on e-journals were analyzed based on country-wise distribution, Language-wise distribution, Year-wise starting pattern, Institutions-wise distribution of publishers, distributions of subject headings their accessibility of archives of online journals in Environmental science.

KEYWORDS :

Open Access, e-journals, Environmental Science, DOAJ.

INTRODUCTION

Bibliometrics is a sort of measuring technique by which interconnected aspects of written communications can be quantified. It is a research process used in library and information science. It is a quantitative study of various aspects of literature on a topic and is used to identify the pattern of publication, authorship, and secondary journal coverage to gain insight into the dynamics of growth of knowledge in the areas under consideration. This can lead to better organization of information resources, which is essential for effective and efficient use. Bibliometrics has attained sophistication and complexity with a national, international, and interdisciplinary character. (Thanuskodi, 2010)

Open access journals as journals that use a funding model that does not charge readers or their institutions for access. From the BOAI definition of "open access", we support the rights of users to "read, download, copy, distribute, print, search, or link to the full texts of these articles" as mandatory for a journal to be included in the directory. Open access strives to correct the philosophical breakage. When Open access becomes nearly complete, and to the extent that open access is provided through open access journals it can also help correct the financial breakage. Open access journal can relieve cost pressures on libraries. Open access journal can reduce the cost structure of the entire scholarly publishing enterprise (Crawford, 2013). Open access journals (As called the GOLD road to open access) are one of the two general methods for providing open access. The other one (As called the GREEN ROAD) is self-archiving in a repository (Vashistha, 2012). The publisher of an open access journal is known as an open access publisher.

Directory of open Access Journals (DOAJ): An Overview

At the first Nordic conference on scholarly communication in London / Conference on scholarly communication in London / Copenhagen (<http://www.lub.lu.se/ncs2002>) the idea of creating a comprehensive directory of open access journals was discussed. The conclusion was that it would be a valuable service for the global research and education community. Available technologies make it possible to collect and organize these resources in a way that allow libraries / information centers worldwide to integrate these resources in existing services thus offering added value both for the service providers of these resources and for the global research and education community. Directory of Open Access Journals is a service that provides access to quality controlled open access journals. Currently the Directory of Open Access Journals (DOAJ) indexes

more than 9992 full text and quality controlled scholarly journals, covering various subject areas (DOAJ, 2013).

The aim of the DOAJ is to increase the visibility and ease of use of open access scientific and scholarly journals, thereby promoting their increased usage and impact. The DOAJ aims to be comprehensive and cover all open access scientific and scholarly journals that use a quality control system to guarantee the content. In short, the DOAJ aims to be the one stop shop for users of open access journals. The Directory aims to be comprehensive and cover all open access scientific and scholarly journals that use a quality control system to guarantee the content (www.doaj.org). Directory of open access journals is hosted, maintained and partly funded by Lund university libraries head office.

OBJECTIVES OF THE STUDY

- To know the number free e-journals offered by DOAJ on Environmental Science.
- To know that country wise distribution of e-journals
- To find out the language wise distribution of e-journals
- To know the language-ship pattern of e-journals.
- To find out the year-wise starting pattern of e-journals.
- To know the publisher-wise distribution of e-journals publishers.

RESEARCH METHODOLOGY

Directory open access journals website (<http://www.doaj.org>) is browsed for the present paper. Environmental science e-journals were searched out and 140 journals were found on DOAJ. Total 140 environmental science e-journals were analyzed based on country-wise distribution, Language-wise distribution, Year-wise starting pattern, Institutions-wise distribution of publishers, distributions of subject Headings.

DATA ANALYSIS AND INTERPRETATIONS

Total 140 environmental science e-Journals were analyzed based on subject headings, languages, country wise and accessibility of archives of e- journals and presented in the form of tables.

Table: 1 List of free E-Journals on Environmental Science

S.N.	Title of Journal	ISSN/EISSN	Place of Publication	Publisher	Start Year	Language	Subject Heading
1.	Academia Journal of Environmental Sciences	2315778X	Nigeria	Academia Publishing	2013	English	Environmental science
2.	Acta Geographica Debrecina Landscape and Environment Series	17894921 17897556	Hungary	University of Debrecen	2007	English	Environmental science, Ecology
3.	Air, Soil and Water Research	11786221	New Zealand	Libertas Academica	2008	English	Environmental science
4.	Ambiência	18080251 21759405	Brazil	Universidade Estadual do Centro-Oeste	2005	Portuguese, English, Spanish	Agriculture (General)- Environmental science
5.	Ambiente & Sociedade	1414753X 18094422	Brazil	ANPPAS - UNICAMP	1999	English, Portuguese, Spanish	Social Sciences- Environmental science
6.	Ambiente e Água : An Interdisciplinary Journal of Applied Science	1980993X	Brazil	Instituto de Pesquisas Ambientais em Bacias Hidrográficas (IPABHi)	2006	English, Portuguese, Spanish	Environmental science
7.	American Journal of Environmental Sciences	1553345X	United State	Science Publications	2005	English	Environmental science
8.	Analele Universității din Oradea, Seria Geografie	12211273 20653409	Romania	Editura Universității din Oradea	2008	English, French	Geography- Environmental science
9.	Annals of Agricultural and Environmental Medicine	12321966 18982263	Poland	Institute of Agricultural Medicine in Lublin	1997	English	Environmental science- Agriculture (General)
10.	Annals of Environmental Science	19392621	United State	Northeastern University	2007	English	Environmental science
11.	Aquatic Biosystems	20469063	United Kingdom	BioMed Central	2012	English	Environmental science

12.	Arhiv za Higijenu Rada i Toksikologiju	00041254 18486312	Croatia	Institute for Medical Research and Occupational Health, Zagreb	1998	English, Croatian, Slovene	Environmental science-Public Health
13.	Atmospheric Chemistry and Physics	16807316 16807324	Germany	Copernicus Publications	2001	English	Environmental science
14.	Atmospheric Chemistry and Physics Discussions	16807367 16807375	Germany	Copernicus Publications	2001	English	Environmental science
15.	BioRisk	13132644 13132652	Bulgaria	Pensoft Publishers	2008	English	Environmental science
16.	Boletim do Observatório Ambiental Alberto Ribeiro Lamego	19816197 21774560	Brazil	Essentia Editora	2007	Portuguese	Environmental science
17.	Boreal Environment Research	12396095 17972469	Finland	Boreal Environment Research Publishing Board	1997	English	Ecology-Environmental science
18.	British Journal of Environment and Climate Change	22314784	India	Sciencedomain International	2011	English	Environmental science
19.	Bumi Lestari	14119668	Indonesia	Udayana University	2010	Indonesian, English	Environmental science
20.	Chronica Naturae	22536280	Spain	HyT, Asociación Hombre y Territorio	2011	Spanish	Environmental science
21.	Cities and the Environment	19327048	United State	Loyola Marymount University	2008	English	Environmental science
22.	Climate of the Past	18149324 18149332	Germany	Copernicus Publications	2005	English	Environmental science
23.	Climate of the Past Discussions	18149340 18149359	Germany	Copernicus Publications	2005	English	Environmental science
24.	Conservation & Society	09724923 09753133	India	Medknow Publications	2003	English	Environmental science-Agriculture (General)
25.	Conservation Science in Cultural Heritage : Historical Technical Journal	19744951 19739494	Italy	University of Bologna	2001	English, Italian	Environmental science-Architecture-Arts in general
26.	The Cryosphere	19940416 19940424	Germany	Copernicus Publications	2007	English	Meteorology and Climatology -- Environmental science
27.	The Cryosphere Discussions	19940432 19940440	Germany	Copernicus Publications	2007	English	Meteorology and Climatology - Environmental science
28.	Current World Environment	09734929 23208031	India	Enviro Research Publishers	2006	English	Environmental science
29.	Delos	19885245	Spain	EUMED.NET	2007	Spanish, Portuguese	Environmental science
30.	Desenvolvimento e Meio Ambiente	1518952X 21769109	Brazil	Universidade Federal do Parana	2000	Portuguese	Environmental science
31.	Développement Durable et Territoires	17729971	France	Réseau Développement durable et territoires fragiles	2002	French	Environmental science

32.	Earth System Dynamics	21904979 21904987	Germany	Copernicus Publications	2010	English	Environmental science-Geology-Earth Sciences
33.	Earth System Dynamics Discussions	21904995	Germany	Copernicus Publications	2010	English	Environmental science-Geology-Earth Sciences
34.	Ecología Austral	1667782X	Argentina	Asociacion de Ecologia Argentina	1991	Spanish, English, Portuguese	Biology-Environmental science
35.	Ekoloji	13001361	Turkey	Çevre Koruma ve Araştırma Vakfı (ÇEV-KOR)	1991	English, Turkish	Environmental science
36.	Electronic Green Journal	10767975	United State	University of California	1994	English	Environmental science
37.	Energy and Environment Research	19270569 19270577	Canada	Canadian Center of Science and Education	2011	English	Environmental science
38.	Energy, Sustainability and Society	21920567	Germany	Springer	2011	English	Environmental science
39.	Environment and Natural Resources Research	19270488 19270496	Canada	Canadian Center of Science and Education	2011	English	Environmental science
40.	Environment and Pollution	19270909 19270917	Canada	Canadian Center of Science and Education	2012	English	Environmental science
41.	Environmental Evidence	20472382	United Kingdom	BioMed Central	2011	English	Environmental science
42.	Environmental Health Perspectives	00916765	United State	The National Institute of Environmental Health Sciences (NIEHS)	1972	English	Public Health-Environmental science
43.	Environmental Research Letters	17489326	United Kingdom	Institute of Physics (IoP)	2006	English	Environmental science
44.	Environmental Research, Engineering and Management	13921649 20292139	Lithuania	Technologija, Kaunas University of Technology	2009	English	Environmental science
45.	Environmental Sciences	1314765X	Bulgaria	Hikari Ltd	2013	English	Environmental science
46.	Environmental Sciences Europe	21904707 21904715	Germany	Springer	2011	English	Environmental science
47.	Environmental Skeptics and Critics	22244263	Hong Kong	International Academy of Ecology and Environmental Sciences	2012	English	Environmental science
48.	EnvironmentAsia	19061714	Thailand	Thai Society of Higher Education Institutes on Environment	2008	English	Environmental science
49.	Environnement Urbain	19164645	Canada	Institut national de la recherche scientifique – Réseau Villes Régions Monde	2007	French, English	Environmental science
50.	European Journal of Sustainable Development	22395938 22396101	Italy	European Center of Sustainable Development	2012	English	Environmental science

52.	Gestión y Ambiente	0124177X	Colombia	Universidad Nacional de Colombia	2007	Spanish, English	Environmental science
53.	Health Scope	22518959 22519513	Iran	Kowsar Publishing Company	2012	English	Public Health-Environmental science
54.	Holistic Approach to Environment	18480071	Croatia	Association for Promotion of Holistic Approach to Environment	2011	English	Environmental science
55.	Holos Environment	15198634	Brazil	Universidade Estadual Paulista	2001	Portuguese, English, Spanish	Environmental science
56.	Hydrology and Earth System Sciences	10275606 16077938	Germany	Copernicus Publications	1997	English	Geography-Environmental science
57.	Hydrology and Earth System Sciences Discussions	18122108 18122116	Germany	Copernicus Publications	2004	English	Environmental science-Geography
58.	Interdisciplinary Description of Complex Systems	13344684 13344676	Croatia	Croatian Interdisciplinary Society	2003	English	Social Sciences-Environmental science
59.	Interfacehs : Journal of Health, Environment and Sustainability	19800894	Brazil	Senac – Serviço Nacional de Aprendizagem Comercial	2006	English, Portuguese, French	Environmental science
60.	International Electronic Journal of Environmental Education	21460329	Turkey	International Electronic Journal of Environmental Education	2010	English	Environmental science-Education
61.	International Journal of Development and Sustainability	21868662	Japan	International Society for Development and Sustainability (ISDS)	2012	English	Environmental science
62.	International Journal of Environmental and Science Education	13063065	Turkey	IJESE	2006	English	Environmental science-Education
63.	International Journal of Environmental Science and Development	20100264	Singapore	IACSIT Press	2010	English	Environmental science
64.	International Journal of Environmental Sciences	09764402	India	Integrated Publishing Association	2010	English	Environmental science
65.	IOP Conference Series : Earth and Environmental Science	17551307 17551315	United Kingdom	IOP Publishing	2008	English	Environmental science
66.	Iranica Journal of Energy and Environment (IJE)	20792115 20792123	Iran	IDOSI	2010	English	Environmental science
67.	Journal of Applied Sciences and Environmental Management	11198362	Nigeria	University of Port Harcourt	2001	English	Public Health-Environmental science
68.	Journal of Environmental Biology	02548704	India	Triveni Enterprises	2006	English	Environmental science-Biology
69.	Journal of Environmental Hydrology	10583912 19967918	United State	International Association for Environmental Hydrology	1995	English, French	Environmental science
70.	Journal of Environmental Issues and Agriculture in Developing Countries	21412731	Nigeria	International Centre for Integrated Development Research	2009	English	Agriculture (General)-Environmental science
71.	Journal of Environmental Protection	21522197 21522219	United State	Scientific Research Publishing	2010	English	Environmental science
72.	Journal of Environmental Science and Technology	19947887 20772181	Pakistan	Asian Network for Scientific Information	2008	English	Environmental science

73.	Journal of Environmental Science and Water Resources	22770704	Nigeria	Wudpecker Journals	2012	English	Environmental science
74.	Journal of Environmental Sciences, Computer Science and Engineering & Technology	2278179X	India	Scientific and Academic Publication	2012	English	General and Civil Engineering-Environmental science
75.	Journal of Environmental Statistics	19451296	United State	UCLA Statistics	2010	English	Environmental science
76.	Journal of Environmentally Friendly Processes	23281383	United State	Petrotex Publication Group	2013	English	Environmental science
77.	Journal of Geodesy and Geoinformation	21471339	Turkey	Chamber of Surveying and Cadastre Engineers	2012	English, Turkish	Astronomy (General)-Environmental science
78.	Journal of Management and Sustainability	19254725 19254733	Canada	Canadian Center of Science and Education	2011	English	Environmental science
79.	Journal of Natural Resources and Development	07192452	Chile	Center for Natural Resources and Development	2011	English	Environmental science
80.	Journal of Political Ecology : Case Studies in History and Society	10730451	United State	University of Arizona	1994	English, French, Spanish	Environmental science-Political Science
81.	Journal of Rural and Community Development	17128277	Canada	Rural Development Institute, Brandon University	2005	English	Environmental science-Agriculture (General)
82.	Journal of Sustainability Science and Management	18238556	Malaysia	Universiti Malaysia Terengganu (UMT)	2008	English	Environmental science
83.	Journal of Sustainable Development	19139063 19139071	Canada	Canadian Center of Science and Education	2008	English	Environmental science
84.	Journal of Sustainable Development of Energy, Water and Environment Systems	18489257	Croatia	SDEWES Centre	2013	English	Environmental science
85.	Journal of Sustainable Energy	20675534	Romania	University of Oradea	2010	English	Environmental science
86.	The Journal of Transdisciplinary Environmental Studies	16022297	Denmark	University Roskilde	2002	English	Environmental science
87.	Journal of Tropical Forestry and Environment	22359362	Sri Lanka	University of Sri Jayewardenepura	2011	English	Environmental science-Forestry
88.	Journal of Vietnamese Environment	21936471	Germany	Technische Universität Dresden	2011	English	Environmental science
89.	Journal of Waste Management	23146052	Egypt	Hindawi Publishing Corporation	2013	English	Environmental science
90.	Journal of Water and Land Development	14297426 20834535	Poland	Versita	2006	English	Environmental science
91.	Journal of Water Resources Research	21666024 21665982	United State	Hans Publishers	2012	Chinese	Environmental science
92.	Landscape Online	18651542	Germany	International Association for Landscape Ecology, Chapter Germany	2007	English	Environmental science
93.	Low Carbon Economy	21587000 21587019	United State	Scientific Research Publishing	2010	English	Environmental science
94.	Mineralogia Polonica	00326267	Poland	Mineralogical Society of Poland	2004	English	Environmental science-Geology-Earth Sciences
95.	Natural Hazards and Earth System Sciences	15618633 16849981	Germany	Copernicus Publications	2001	English	Geology-Earth Sciences-Environmental science

96.	Natural Resources	22379290	Brazil	Escola Superior de Sustentabilidade	2011	Portuguese, English, Spanish	Environmental science
97.	Natural Resources and Environmental Issues	10695370	United State	Quinney Natural Resources Research Library	2007	English	Environmental science
98.	Nordisk Miljörättslig Tidskrift	20004273	Sweden	Gabriel Michanek	2009	Norwegian, Swedish, English	Environmental science-Law
99.	Octa Journal of Environmental Research	23213655	India	Scientific Planet Society	2013	English	Environmental science
100.	Online Journal of Rural Research & Policy	19360487	United State	New Prairie Press	2006	English	Environmental science-Social Sciences
101.	Open Environmental Pollution & Toxicology	18763979	United State	Bentham open	2009	English	Environmental science
102.	Our Nature	19912951	Nepal	Nature Conservation and Health Care Council	2003	English	Biology Environmental science
103.	PAGES News	18111602 18111610	Switzerland	PAGES International Project Office	2001	English	Environmental science
104.	Papers on Global Change IGBP	1730802X	Poland	Versita	2010	English	Environmental science --- Geology --- Earth Sciences
105.	Park Science	07359462 10909966	United State	National Park Service	1980	English	Environmental science
106.	Pesticidas : Revista de Ecotoxicologia e Meio Ambiente	01037277 19839847	Brazil	Centro de Pesquisa e Processamento de Alimentos (CEPPA)	2001	Portuguese	Public Health --- Environmental science
107.	Present Environment and Sustainable Development	18435971 22847820	Romania	Alexandru Ioan Cuza University of Iasi	2007	English, French	Environmental science
108.	Research Journal of Environmental and Earth Sciences	20410484 20410492	United Kingdom	Maxwell Science Publication	2009	English	Environmental science
109.	Resources	20799276	Switzerland	MDPI AG	2012	English	Environmental science
110.	Reunir : Revista de Administração, Contabilidade e Sustentabilidade	22373667	Brazil	Universidade Federal de Campina Grande	2011	Portuguese	Environmental science--- Business and Management
111.	Revista Ambiente Contábil	21769036	Brazil	Universidade Federal do Rio Grande do Norte	2009	Portuguese	Environmental science
112.	Revista Brasileira de Gestão e Desenvolvimento Regional	1809239X	Brazil	Universidade de Taubaté	2005	Portuguese, Spanish, English, French	Business and Management --- Environmental science
113.	Revista Chapingo : Serie Ciencias Forestales y del Ambiente	20073828 20074018	Mexico	Universidad Autónoma Chapingo	2001	Spanish	Forestry --- Environmental science
114.	Revista de Investigación Marina (RIM)	1988818X	Spain	AZTI-Tecnalia (Marine Research Division)	2008	Spanish, English	Aquaculture and Fisheries --- Environmental science
115.	Revista de Salud Ambiental	16972791 16972791	Spain	Sociedad Española de Sanidad Ambiental	2003	Spanish, English	Public Health --- Environmental science

116.	Revista Eletrônica em Gestão, Educação e Tecnologia Ambiental	22361170	Brazil	Federal University of Santa Maria (UFSM)	2010	Portuguese, Spanish, English	Environmental science
117.	Revista Forestal Venezolana	05566606	Venezuela	Universidad de Los Andes (Venezuela)	1997	Spanish	Environmental science --- Forestry
118.	Revista Geografica Venezolana	10121617	Venezuela	Universidad de Los Andes (Venezuela)	1999	Spanish, English, French, Portuguese	Geography --- Environmental science
119.	Revista Ibero-Americana de Ciências Ambientais	21796858	Brazil	Escola Superior de Sustentabilidade	2010	Portuguese, English	Environmental science
120.	Revista Interamericana de Ambiente y Turismo	0718235X	Chile	Universidad de Talca	2005	English, Spanish	Geography --- Environmental science
121.	Revista Luna Azul	19092474	Colombia	University of Caldas	2002	Spanish	Environmental science --- Ecology
122.	Revista Theomai	16662830 15156443	Argentina	Universidad Nacional de Quilmes	2000	Spanish, English, French, Italian, Portuguese	Environmental science --- Social Sciences
123.	Revista Vitas : Visões Transdisciplinares sobre Ambiente e Sociedade	22381627	Brazil	Universidade Federal Fluminense	2011	Portuguese	Environmental science
124.	RGSA : Revista de Gestão Social e Ambiental	1981982X	Brazil	Universidade Nove de Julho	2007	Portuguese, English	Environmental science
125.	San Francisco Estuary and Watershed Science	15462366	United State	San Francisco Bay-Delta Science Consortium and the John Muir Institute of the Environment	2003	English	Environmental science
126.	Sciences Eaux & Territoires : la Revue du IRSTEA	21093016 17753783	France	IRSTEA	2010	French, English	Environmental science --- Agriculture (General)
127.	Scientific Journal of Environmental Sciences	23225017	Iran	Sjournals	2012	English	Environmental science
128.	Silva Lusitana	08706352	Portugal	Estação Florestal Nacional	2001	Portuguese, English, Spanish	Environmental science --- Forestry
129.	Smart Grid and Renewable Energy	2151481X 21514844	United State	Scientific Research Publishing	2010	English	Environmental science
130.	Socijalna Ekologija	13300113 18490360	Croatia	Hrvatsko sociološko društvo	2004	Croatian	Environmental science
131.	Solutions Journal	21540896 21540926	United State	Solutions Journal	2010	English	Environmental science
132.	Sostenible?	1139966X 15756688	Spain	Universitat Politècnica De Catalunya	1999	Catalan, Spanish, English	Environmental science
133.	Sustainability	20711050	Switzerland	MDPI AG	2009	English	Environmental science
134.	Sustainable Development	21607540 21607559	United state	Hans Publishers	2011	Chinese	Environmental science
135.	Sustentabilidade em Debate	21777675 21799067	Brazil	Universidade de Brasília	2010	Portuguese	Environmental science

136.	Turkish Journal of Engineering and Environmental Sciences	13000160 13036157	Turkey	Scientific and Technical Research Council of Turkey	1998	English, Turkish	Environmental science --- General and Civil Engineering
137.	Universidad y Ciencia	01862979	Mexico	Universidad Juárez Autónoma de Tabasco	2001	Spanish, English	Environmental science
138.	Water Alternatives	19650175	France	Water Alternatives Association	2008	English	Environmental science --- Political Science
139.	Water S.A.	03784738 18167950	South Africa	Water Research Commission	1998	English	Environmental science
140.	World Journal of Agricultural Sciences	18173047 18175082	Pakistan	IDOSI Publications	2005	English	Environmental science --- Agriculture (General)

Table-2: Analysis of Country-Wise distribution of e-journals on Environmental science

Country	No. of Publications	%	Rank
United State	20	14.29	1
Brazil	17	12.14	2
Germany	15	10.71	3
Canada	07	5	4
India	07	5	4
Croatia	06	4.29	5
Spain	05	3.57	6
Turkey	05	3.57	6
United Kingdom	05	3.57	6
Nigeria	04	2.86	7
Poland	04	2.86	7
France	03	2.14	8
Iran	03	2.14	8
Romania	03	2.14	8
Switzerland	03	2.14	8
Argentina	02	1.43	9
Bulgaria	02	1.43	9
Chile	02	1.43	9
Colombia	02	1.43	9
Italy	02	1.43	9
Mexico	02	1.43	9
Pakistan	02	1.43	9
Venezuela	02	1.43	9
Denmark	01	0.71	10
Egypt	01	0.71	10
Finland	01	0.71	10
Hong Kong	01	0.71	10
Hungary	01	0.71	10
Indonesia	01	0.71	10
Japan	01	0.71	10
Lithuania	01	0.71	10
Malaysia	01	0.71	10
Nepal	01	0.71	10
New Zealand	01	0.71	10
Portugal	01	0.71	10
Singapore	01	0.71	10
South Africa	01	0.71	10
Sri Lanka	01	0.71	10
Sweden	01	0.71	10
Thailand	01	0.71	10
Total	140	99.93	

Table-2 clearly shows that the United States publishes more and more open access journals i.e. 20(14.29%) open access journals publishing from United State with 1st rank. It is clear from the Table-2 India publishes only 07(5%) open access e-journal in the field of environmental science with 4th Rank.

Table-3: Analysis of Language-Wise distribution of e-journals on Environmental science

Language	No. of Journals	Rank
English	125	1
Spanish	23	2
Portuguese	22	3
French	11	4
Croatian	03	5
Turkish	03	5
Chinese	02	6
Italian	02	6
Catalan	01	7
Indonesian	01	7
Norwegian	01	7
Slovene	01	7
Swedish	01	7
Total	196	

Table-3 depicts the information about the language-wise publication of e-journals on environmental science. In the world wide environmental science e-journals are published in 196 languages. English language is dominating the open access e-journals in the field of environmental science 125 with 1st Rank.

Table-4: Analysis of Language-ship pattern of e-journals on Environmental science

Language-ship	No. of e-journals	%	Rank
Single	105	75	1
2 Language	19	13.57	2
3 Language	13	9.29	3
4 Language	2	1.43	4
5 Language	1	0.71	5
Total	140	100	

Table-4 examines the language-ship pattern of the e-journal publishing in environmental science. The biggest number of e-journals had been published by single language 105(75%) with 1st Rank. This is followed by two languages 19(13.57%), three languages 13(9.29%), four languages 2(1.43%), and 5 Language with 1(0.71%) of the total e-journals publishing in environmental science.

Table-5: Analysis of year-wise starting pattern of e-journals on Environmental science

Starting Years	No. of e-journals	%	Rank
2010	18	12.86	1
2011	16	11.43	2
2012	12	8.57	3
2007	12	8.57	3
2001	11	7.86	4
2008	11	7.86	4
2005	08	5.71	5
2006	08	5.71	5
2009	07	5	6
2013	06	4.29	7
2003	05	3.57	8
1997	04	2.86	9
1998	03	2.14	10
1999	03	2.14	10
2002	03	2.14	10
2004	03	2.14	10
1991	02	1.43	11
1994	02	1.43	11
2000	02	1.43	11
1995	01	0.71	12
1986	01	0.71	12
1980	01	0.71	12
1972	01	0.71	12
Total	140	99.98	

Table-5 gives the information about the starting years of e-journals on environmental science. It is clearly shows that maximum 18(12.86%) open access e-journals on environmental science starting in the year 2010 with 1st Rank.

Table-6: Analysis of Publishers-wise distribution of e-journals on Environmental science

Institutions	No. of e-journals	%
Universities	37	26.43
Learned societies	29	20.71
Others	65	46.43
Institutes	9	6.43
Total	140	100

Table-6 examines the Institution-wise distribution of e-journals publications in environmental science. A majority of the e-journals publications in environmental science, 37(26.43%) were contributed by university. This is followed by learned societies with 29(20.71%), and others 65(46.43%) e-journals.

FINDINGS OF THE STUDY

It is observed that the United States publishes more and more open access journals i.e. 20(14.29%) open access journals publishing from United State with 1st rank, and India publishes only 07(5%) open access e-journal in the field of environmental science with 4th Rank.

English language is dominating the open access e-journals in the field of Environmental science with 1st Rank.

The biggest number of e-journals had been published by single language with 1st Rank.

A majority of the e-journals open access e-journals on environmental science starting in the year 2010 with 1st Rank.

A majority of the e-journals publishing in the environmental science 37(26.43%) were contributed by university.

CONCLUSION

Open access journals are scholarly journals that are available online to the reader "without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Some are subsidized, and some

require payment on behalf of the author. DOAJ is comprehensive and covers open access scientific and scholarly journals that use an appropriate quantity control system, and it will not be limited to particular language or subject areas. DOAJ is to increase the visibility and scholarly journals there by promoting their increased usage and impact. Research scholars, environmental scientists, professionals should browse the DOAJ site and access the free online journals on their subject areas. It is also suggested that environmental 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 (I.F.) and citation index.

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