

Publication Distribution of Open Access Journals at Continental Level; An Analysis of Directory of Open Access Journals (DOAJ)

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ABSTRACT

In this ever and fast changing world nothing seems to be of permanent nature and so has gone with publishing world. Previously most of the publishing was done in the printed format and with the advent of electronic publishing and to contend both the type of readers, publishers were somewhat impelled to have hybrid publishing, but both were available in closed formats viz. paid ones. Electronic publishing went one step ahead by throwing open the closed door format to open access format and these days the buzz of open access publishing can be heard all across the globe. In the present study attempt has been made to assess the publication distribution of open access journals across different continents of the world. The study has been undertaken on the data analysis of DOAJ during the last decade viz. 2002-2012. The analysis has also been made in comparison to growth of open access journals at global level. Literature review has also been undertaken so as to have better understanding of the concept, as what sort of work has already been done in the area. Data was retrieved from the DOAJ on December 31, 2012; the directory on the date hosted 8518 journals from 121 countries of the world.

KEYWORDS: - Open Access, DOAJ, Continents, Growth, Distribution,

INTRODUCTION: - Open Access (OA) publishing has become order of the day, more and more research results are being published in the OA format, more and more researchers have started believing publishing their research results in open access format and so do believe research organizations. Even the concept of open access publishing came to fore with the view that most of research under taken all across the globe is done on public money and by virtue of which public has got every right to know about the research results without paying anything for it ^[1]. Even though there is an argument that tax payers' money is not pumped into research projects in every country, for instance, in Japan it is believed that not more than 10% of tax payers money is used in research projects, which on that contrary, in Australia more than 80% of money involved in the research projects comes from public money collected in the shape of tax ^[2].

Apart from this there is also a growing acceptance across the world among people in general and academia in particular that open access publishing has got numerous advantages over that of closed formats, be it about the dissemination of research results and its timely retrieval by seeker of information, or the visibility of articles on internet and above all the availability of same free of cost to the public, which is not so when taken the case of closed formats of publishing.

The concept of open access, which till recent past used to be limited to only journals, has now got extended to some other areas as well, we can see more and more institutions have started offering access to their institutional scholarly content mostly available in the form of theses, scholarly monographs and book chapters etc. ^[3]. Green OA shelving and Gold OA ^[4] shelving are some added examples where by institutions can make better use of their scholarly output and can host the same on their institutional repository accessible to all. The concept of self archiving dates back to 1980's as computer scientists used to archive their research the then, ^[5] but the concept received formal acceptance when it was proposed during 1994 by Stevan Harnad ^[6]. The concept of delayed open access is also growing these days, in this type of access the journals which publish research results do not make the same available in the open access format initially however after year or so they make that content available in open access format ^[7]. This kind of practice is mostly seen with those publication which are engaged in the sustenance whereby they try to recover at least the amount of money involved in the publication of journal and ones the same is attained the publication is thrown open.

In the present study the concept of publication distribution of open access journals all across the globe has been undertaken for study having emphasis on distribution of OA journals across different continents of the world. The growing trend towards the open access publishing gets corroborated by the fact that as on 121 countries all across the world are publishing their research output in the open access format as per the data retrieved from the Directory of Open Access Journals (DOAJ) ^[8]. In the present study six continents of the world have been taken for study with emphasis on growth of open access journals during the last decade viz. from 2002-2012 in different continents.

It won't be inappropriate to say that open access publishing is one of the best and vastly chosen formats researcher opt these days to publish their research results. With the larger growth and greater acceptance of OA publishing all across the globe more and more institutions and research organizations have opted to publishing their research output in open access format which they believe has larger reach compared to closed format of publishing.

REVIEW OF LITERATURE: - In the field of open access publishing a good number of studies have already been undertaken all across the world from time to time and most of them have concluded with the positives of open access publishing which it has got over that of conventional means of publishing. Laakso, M [et al] (2011) ^[9] conducted study on open access journals published during the period 1993-2009 clearly revealed that there had been exponential growth both in the publication of OA journals and the number of articles published in these journals. Similarly Björk, B. C [et al] (2010) ^[10] in their study on open access journals published during the year 2008 observed that nearly 20% peer reviewed articles published during the year were available in OA format.

DAREnet project launched together by 16 Dutch universities in 2005 proved a great boon in the field of open access dissemination. During the initial year of its launch the repository made available more than 47000 research articles available on net and the number grew to 185000 articles in 2009 with covering mostly all the Dutch universities ^[11]. Technology has equally been a part in this open access movement, there are various software's available which are being put into service to provide efficient and up to data open access publishing services. Open Journal System is one such software which is used in most parts of the world to support OA publishing ^[12].

Need and importance of the open access publishing can be also gauged from the fact that that National Library of Medicine (NLM) U.S in 1997 made its most comprehensive index to medical literature freely available to public in the name of PubMed ^[13]. It was observed that with the throwing open Medline to public free of cost, its usage increased as much as ten times, which in itself is a counter argument that how actually closed format of publishing act as barriers in dissemination of knowledge and information. Lack of access to scholarly literature on various grounds, mostly due to publication being in closed format, acts as an impediment in making optimum use of research results. Success of Medline resulted into the formation of American Scientists Open Access Forum in 1998 ^[14].

Among scientific community, in 2001 it was observed that freely available online scientific proceedings were cited more than thrice the printed articles ^[15] and this is argued for the only reason of their being available free of cost. Growing popularity of open access can be equally gauged from the fact that articles available freely on net are read more by information seeker which as a result are also more cited ^[16]. Mc Culloh (2006) ^[17] in his study observed that scholarly communication has got immensely transformed with the OA publishing and has equally delivered benefits to the end user. Herb & Muller (2008) ^[18] were of the view that upon getting familiar with the benefits of OA publishing, scientists use it to an increasing extent. Rowland's & Nicolas (2005) ^[19] observed that authors publishing in OA journals has increased from 11% to 29% from 2004 to 2005.

OBJECTIVES: - The present study has been undertaken with the following objectives

- To find and understand Publication Distribution of Open Access Journals at continental level.
- Growth of open access journals at continental level during the last decade
- Countries publishing open access journals at continental level
- Major contributors to open access publishing at continental level
- Continental share of OA publishing to that of global level

SOURCE, SCOPE & METHODOLOGY: - Present study has been carried over the data retrieved from the Directory of Open Access Journals (DOAJ) accessible at (<http://www.doaj.org/doaj>). The statistical data is readily available on the said website, the figures of which keep on frequently changing depending upon the inclusion of some latest OA journals. On the day of data retrieved viz. December 31, 2012 the directory in all hosted 8518 Journals as such this much number of journals were put to evaluation and analysis. The data was put to excel format so as to have better analysis and understating mostly in accordance to our pre defined objectives.

The scope of the present study is limited to journals listed on Directory of Open Access Journals (DOAJ) from 2002 to 2012 by 121 countries of the world involved with open access publishing. The present study will also help us develop a better understanding about the future of OA publishing across the world in general and continents in particular keeping in view the growth and growing trend towards OA publishing.

DATA ANALYSIS, DISCUSSION & RESULTS:- Most of the common operations like addition, subtraction, drawings and percentage etc was undertaken by putting the retrieved data to excel format with point percentage taken up to only two decimal point places during the entire analysis. Percentage at global and continental level stands compared with figures retrieved from world atlas at its website (<http://www.worldatlas.com/>)

DATA ANALYSIS, DISCUSSION & RESULTS:-

Table-I Growth of open access journals at global level during the last decade viz. 2002-2012

S.No Year	Total number of journals in DOAJ										
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
No of Journals	34	552	1098	1661	2142	2679	3515	4272	5729	7264	8518
% age increase	(00.00)	(1523.52)	(98.91)	(51.27)	(28.98)	(25.07)	(31.20)	(21.53)	(34.10)	(26.79)	(17.26)

(Figures in the parenthesis indicate percentage)

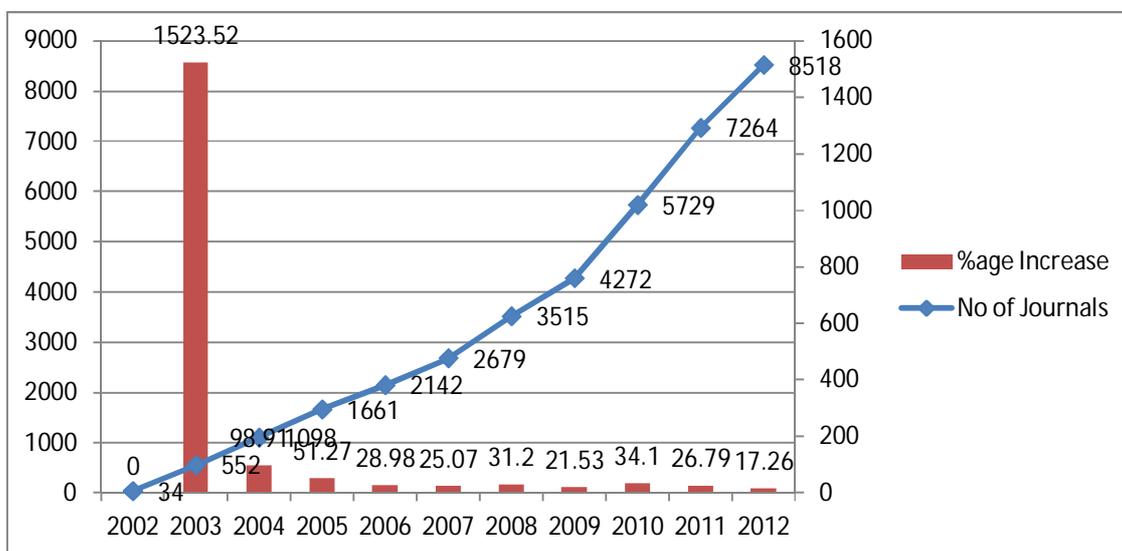


Figure 1

In this table the bars have been taken in correspondence to secondary axis, while as the frequency curve corresponds to primary axis. From the above analysis we can see there is a steady growth of journals year after year. The journals on average grew at the rate of 185.86% per annum. Although the maximum number of journals 1535 were introduced in the year 2011 but the maximum percentage growth was seen during the year 2003 with percentage increase of 1523.53% while as only 518 journals were introduced in the year and the year 2012 recorded minimum %age growth during the entire decade with 1254 journals which otherwise is the third highest year of introducing maximum number of journals. Year 2004 and 2005 are the other years in the table which stood at number two and number three positions respectively during the entire decade when the maximum percentage growth of journals was recorded. Accordingly 2010 recorded the second maximum increase with 1457 journals.

Table-II Year wise growth of Open Access Journals at continental level

Continent	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Africa	3	8	16	22	32	65	102	178	247	389	477
Asia	2	58	139	227	275	336	432	570	885	1202	1477
Europe	13	213	342	580	788	995	1314	1575	2188	2716	3165
N.America	16	238	355	481	572	688	917	1065	1292	1593	1749
Oceania	0	19	34	52	62	83	108	141	169	216	243
S. America	0	16	212	299	413	512	642	743	948	1148	1407

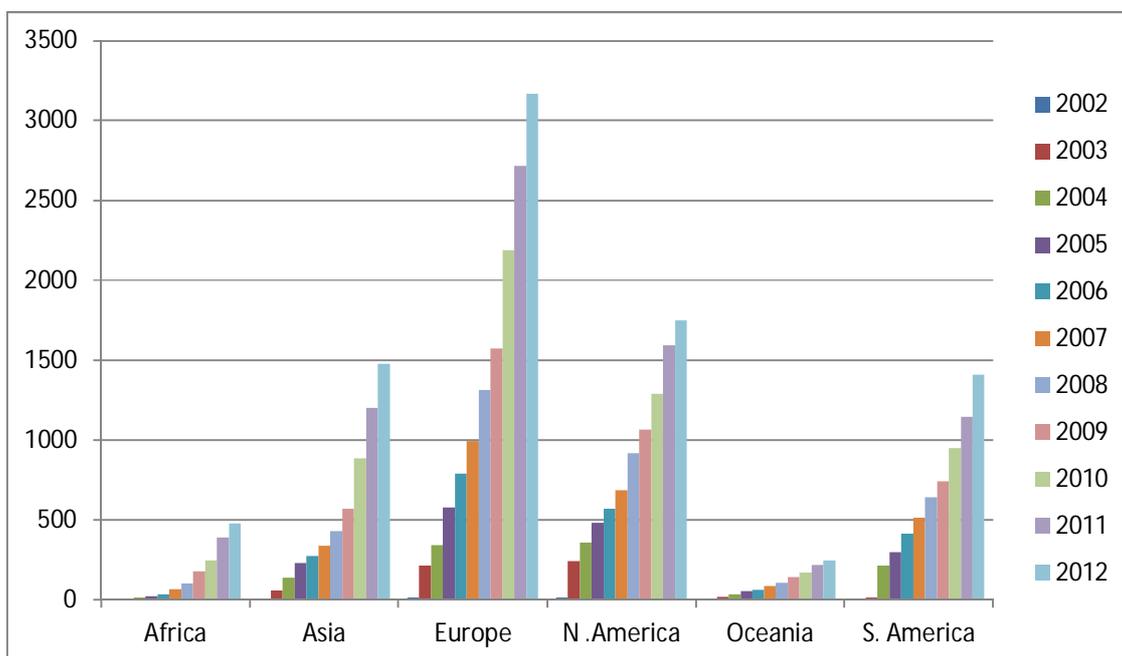


Figure 2

The buildings in the above bar graph appears a nice artistic creation, wherein it may seem the buildings have been put in place after a defined time period which otherwise is not the case of such sort. From the above tabulation and bar-graph we can see, Europe as it is known for its tall and high metropolises emerged will tall building bars from the very beginning viz. since 2002 and this momentum kept on going towards the end of the decade viz. by the end of year 2012. From the overall tally we can see on the OA front Europe dominates the rest of the world with 3165 journals, which is backed by North America with 1749 journals followed by Asia with 1477 journals. South America, Africa and Oceania with 1407, 477, and 243 journals respectively occupied the slot at number four, five and Six respectively.

Table-III Year wise growth of newly introduced open access journals at Global level

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
No of Journals with %age increase	34	518	546	563	481	537	836	757	1457	1535	1254
	(00.00)	(1423.52)	(5.40)	(3.11)	(-14.56)	(11.64)	(55.67)	(-9.44)	(92.47)	(5.35)	(-18.30)

(Figures in the parenthesis indicate percentage)

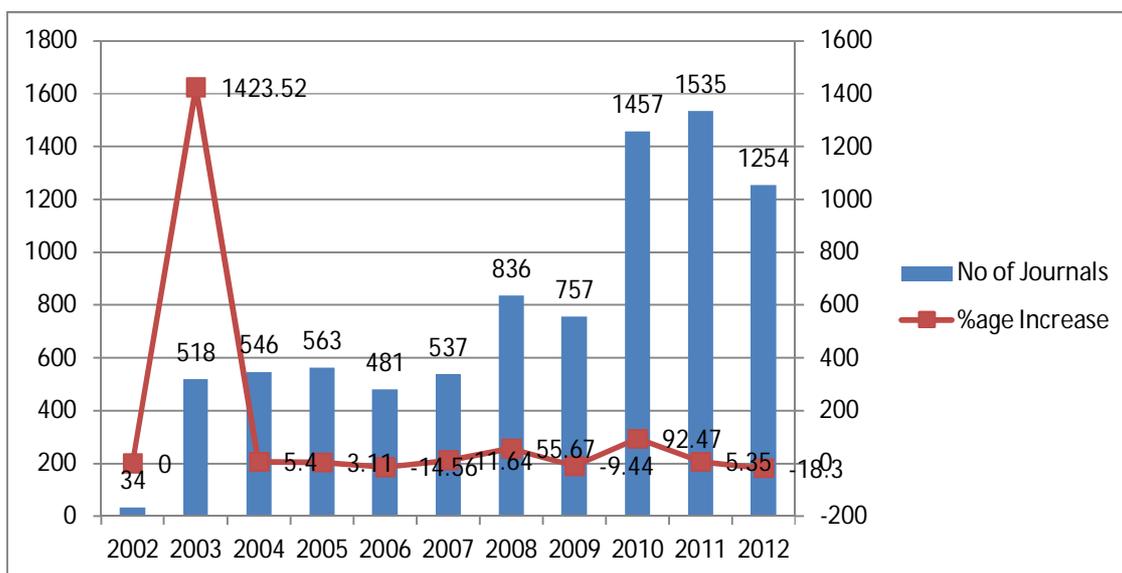


Figure 3

This tabulation was drawn to assess the year wise growth of newly introduced open access journals at global level and to have better understanding of the concept growth percentage was calculated by comparing the figures with corresponding year. From the above figures we can see during the years 2006, 2009 and 2012 negative growth was recorded, while as for the rest of the decade positive growth was registered. If we clearly assess these figures especially the growth percentage we can see on average the journals grew at the rate of 155.46% per annum. Though the year 2003 recorded the highest percentage of growth viz. 1423.52% with the mere increase of 518 journals, while as on the contrary, year 2010 recorded only 92.47% growth with the introduction of as many 1457 journals, which is highest number of journals introduced during the entire decade. From the red curve drawn in correspondence to the secondary axis, can be easily seen moving below the zero mark while showing the negative growth percentage of -14.56%, -9.44% and -18.30% during the aforesaid years and for the rest of the percentage the line moves above the zero mark.

Table-IV Year wise growth of newly introduced open access journals at continental level

S.No	Year wise growth of Journals											
	Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Africa		3	5	8	6	10	33	37	76	69	142	88
Asia		2	56	81	88	48	61	96	138	315	317	275
Europe		13	200	129	238	208	207	319	261	613	528	449
N .America		16	222	117	126	91	116	229	148	227	301	156
Oceania		0	19	15	18	10	21	25	33	28	47	27
S. America		0	16	196	87	114	99	130	101	205	200	259

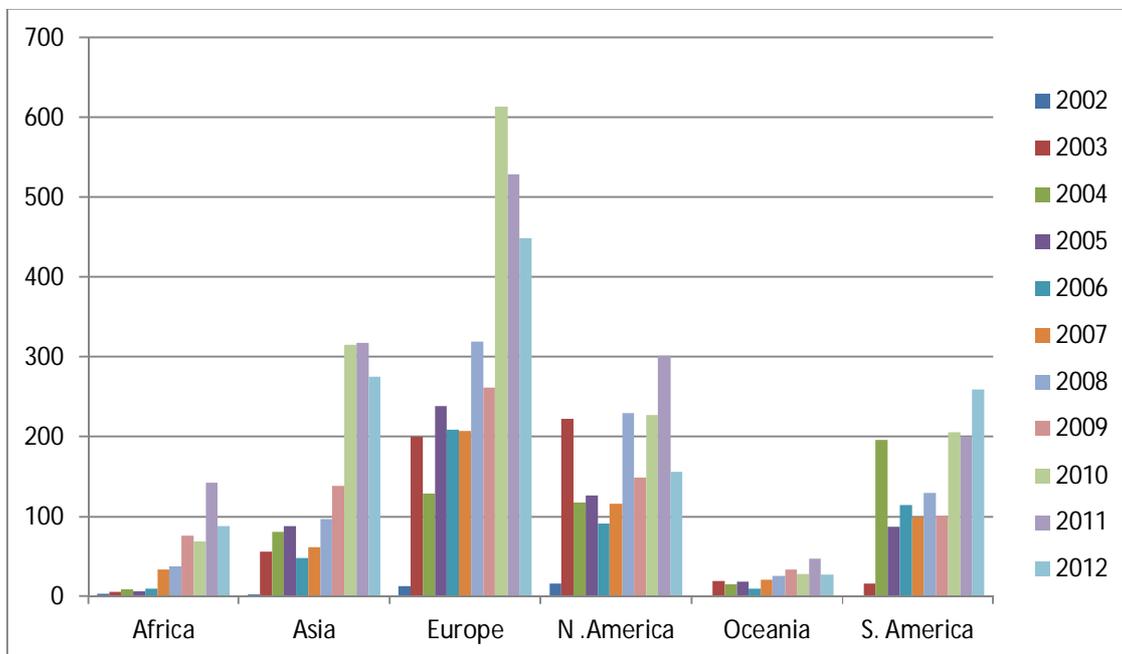


Figure 4

Taking cue from the above tabulation was drawn to assess the growth of newly introduced OA journals on yearly basis from different continents. From the bar graph and the tabulated figures we can see these are not as lucid as was the case with table-II above. The above tabulation presents a mixed look of introduction of journals. From the overall graphical presentation Europe looks to dominate in this area as well except during the year 2002 and 2003 when Europe introduced only 13 and 200 journals while as North America introduced 16 and 222 journals respectively. After Europe North America can be seen as the second highest journal introducer for dominating the scene during the years 2004 to 2009, and towards the last quarter it is the Asia which took over North America during the year 2010, 2011 & 2012. Accordingly domination at third spot remained mixed between Asia and South America, followed by Africa and Oceania.

Table-V Year wise growth of increase in countries at continental level

S.No	Year wise growth of Journals										
	Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Africa	1	4	4	4	5	10	12	13	13	16	18
Asia	1	10	12	18	18	19	21	24	30	33	34
Europe	6	25	29	30	32	34	37	40	40	41	43
N. America	1	3	5	7	9	9	12	14	14	14	14
Oceania	0	2	2	2	2	2	2	2	2	2	2
S. America	0	4	5	6	6	7	9	10	10	10	10

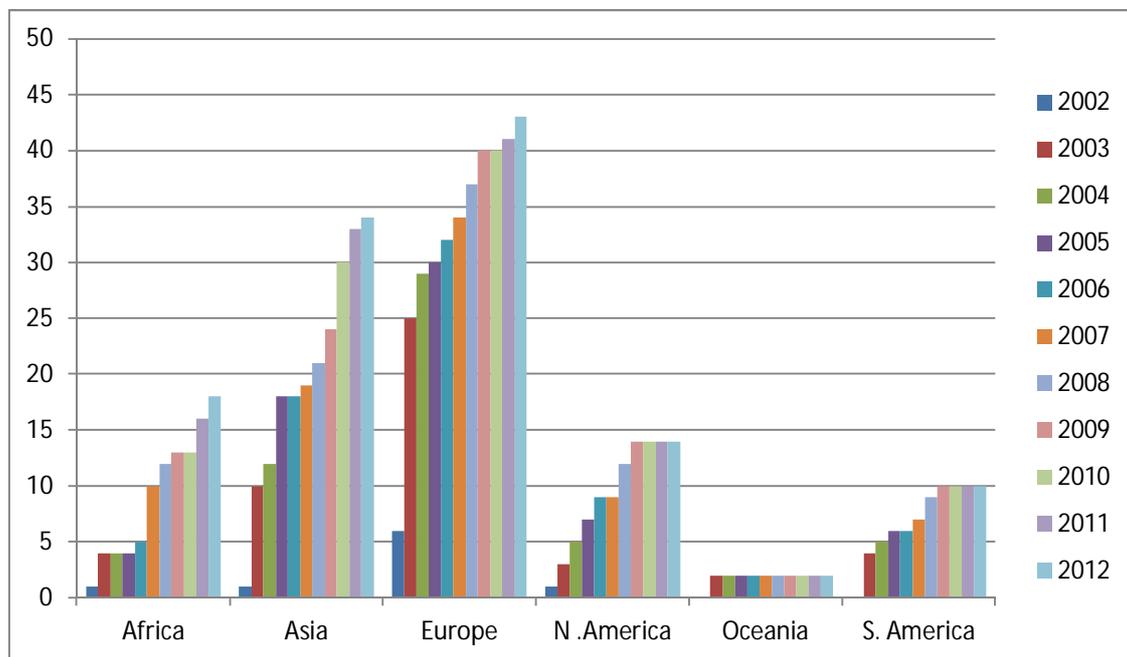


Figure 5

Along with knowing about the OA journals published all across the globe it is equally important to know about the number of countries participating in OA publishing. To have better idea over the growth of countries embracing to OA publishing at continental level the above tabulation was drawn with graphical presentation. From the tabulate figures and as projected in graph, Europe dominates the table with the participation of as much as 43 countries the maximum in the table. After Europe it is Asia which is leading the table with 34 countries, followed by Africa with 18 participant countries. North America with 14 countries, South America with 10 countries and Oceania with 2 countries are the continents which have lesser country level participation and the reason can be owed to the fact that these continents have lesser number of countries when compared to former three continents. Oceania is the only continent which has not shown any growth during the entire decade. Australia and New Zealand are the only two countries which are involved with the open access publishing from the continent. Both North and South America are the two continents which did not showed any growth in terms of newly introduced countries from 2009 onwards, during which North America remained fixed at 14 and South with 10 countries. Rest of the continents showed almost steady growth during the entire decade.

Table-VI Geographic Distribution of Open Access Journals (Continents and Countries)

Table-VI (a) Contribution percentage to open access publishing at continental & global level-Africa

Continent	Country	No of journals and %age Contribution at Global level	%age contribution at Continental level
Africa	Egypt	350 (4.10)	73.37
	South Africa	54 (0.63)	11.32
	Nigeria	26 (0.30)	5.45
	Tunisia	10 (0.11)	2.09
	Kenya	06 (0.07)	1.25
	Morocco	06 (0.07)	1.25
	Ethiopia	05 (0.05)	1.04
	Uganda	04 (0.04)	0.83
	Tanzania	03 (0.03)	0.62
	Ghana	02 (0.02)	0.41
	Libya	02 (0.02)	0.41
	Mauritius	02 (0.02)	0.41
	Algeria	02 (0.02)	0.41
	Burundi	01 (0.01)	0.20
	Cote d'Ivoire	01 (0.01)	0.20
	Madagascar	01 (0.01)	0.20
	Sierra Leone	01 (0.01)	0.20
Zambia	01 (0.01)	0.20	
		477 (5.59)	

(Figures in the parenthesis indicate percentage)

Table VI (b) Contribution percentage to open access publishing at continental & global level-Asia

Continent	Country	No of Journals & %age Contribution at Global level	%age contribution at Continental level
Asia	India	463 (5.43)	31.34
	Turkey	210 (2.46)	14.21
	Iran	166 (1.94)	11.23
	Japan	106 (1.24)	7.17
	Pakistan	99 (1.16)	6.70
	Malaysia	70 (0.82)	4.73
	Russia	59 (0.69)	3.99
	Indonesia	44 (0.51)	2.97
	Korea, South	44 (0.51)	2.97
	China	36 (0.42)	2.43
	Hong Kong	29 (0.34)	1.96
	Bangladesh	24 (0.28)	1.62
	Taiwan	17 (0.19)	1.15
	Thailand	16 (0.18)	1.08
	Philippines	15 (0.17)	1.01
	Israel	13 (0.15)	0.88

	Nepal	10 (0.11)	0.67
	Singapore	10 (0.11)	0.67
	Sri Lanka	10 (0.11)	0.67
	Jordan	09 (0.10)	0.60
	UAE	08 (0.09)	0.54
	Saudi Arabia	05 (0.05)	0.33
	Iraq	02 (0.02)	0.13
	Oman	02 (0.02)	0.13
	Bahrain	01 (0.01)	0.06
	Bhutan	01 (0.01)	0.06
	Brunei	01 (0.01)	0.06
	Cambodia	01 (0.01)	0.06
	Kuwait	01 (0.01)	0.06
	Kyrgyzstan	01 (0.01)	0.06
	Lebanon	01 (0.01)	0.06
	Qatar	01 (0.01)	0.06
	Vietnam	01 (0.01)	0.06
	Yemen	01 (0.01)	0.06
		1477 (17.33)	

(Figures in the parenthesis indicate percentage)

Table VI (c) Contribution percentage to open access publishing at continental & global level-Europe

Continent	Country	No of Journals & %age Contribution at Global level	%age contribution at Continental level
Europe	UK	575 (6.75)	18.90
	Spain	442 (5.18)	11.29
	Germany	259 (3.10)	8.52
	Romania	249 (2.92)	8.06
	Italy	230 (2.70)	7.50
	France	175 (2.05)	5.69
	Poland	142 (1.66)	4.64
	Switzerland	134 (1.57)	4.14
	Croatia	93 (1.09)	3.02
	Serbia	88 (1.03)	2.73
	Portugal	70 (0.82)	2.27
	Czech Republic	66 (0.77)	2.20
	Netherlands	67 (0.78)	2.14
	Sweden	60 (0.70)	1.97
	Bulgaria	43 (0.50)	1.41
	Austria	40 (0.46)	1.31
	Slovenia	40 (0.46)	1.28
	Greece	39 (0.45)	1.28
	Finland	38 (0.44)	1.25
	Denmark	37 (0.43)	1.18
	Lithuania	33 (0.38)	1.11
Norway	34 (0.39)	1.11	
Ukraine	33 (0.38)	1.05	
Slovakia	31 (0.36)	0.98	
Belgium	24 (0.28)	0.79	
Hungary	24 (0.28)	0.79	
Estonia	23 (0.27)	0.75	

	Bosnia	15 (0.17)	0.49
	Macedonia	12 (0.14)	0.39
	Ireland	11 (0.12)	0.36
	Azerbaijan	05 (0.05)	0.16
	Cyprus	04 (0.04)	0.13
	Latvia	04 (0.04)	0.13
	Moldova	04 (0.04)	0.13
	Armenia	03 (0.03)	0.09
	Georgia	03 (0.03)	0.09
	Iceland	03 (0.03)	0.09
	Kosovo	03 (0.03)	0.09
	Malta	03 (0.03)	0.09
	Belarus	02 (0.02)	0.06
	Montenegro	02 (0.02)	0.06
	Albania	01 (0.01)	0.03
	Luxembourg	01 (0.01)	0.03
		3165 (37.15)	

(Figures in the parenthesis indicate percentage)

Table-VI (d) Contribution percentage to open access publishing at continental & global level-North America

Continent	Country	No of Journals & %age Contribution at Global level	%age contribution at Continental level
North America	United States	1270 (14.90)	72.61
	Canada	255 (2.99)	14.57
	Mexico	126 (1.47)	7.20
	Cuba	50 (0.58)	2.85
	Costa Rica	25 (0.29)	1.42
	Puerto Rico	10 (0.11)	0.57
	Bahamas	03 (0.03)	0.17
	Guatemala	03 (0.03)	0.17
	Nicaragua	02 (0.02)	0.11
	Barbados	01 (0.01)	0.05
	British Virgin Islands	01 (0.01)	0.05
	Dominican	01 (0.01)	0.05
	Jamaica	01 (0.01)	0.05
	Martinique	01 (0.01)	0.05
		1749 (20.53)	

(Figures in the parenthesis indicate percentage)

Table VI (e) Contribution percentage to open access publishing at continental & global level-Oceania

Continent	Country	No of Journals & %age Contribution at Global level	%age contribution at Continental level
Oceania	Australia	123 (1.44)	50.61
	New Zealand	120 (1.40)	49.38
		243 (2.87)	

(Figures in the parenthesis indicate percentage)

Table-VI (f) Contribution percentage to open access publishing at continental & global level-South America

Continent	Country	No of Journals & %age Contribution at Global level	%age contribution at Continental level
South America	Brazil	801 (9.40)	56.92
	Colombia	201 (2.35)	14.28
	Chile	141 (1.65)	10.02
	Argentina	134 (1.57)	9.52
	Venezuela	85 (0.99)	6.04
	Peru	29 (0.34)	2.06
	Bolivia	07 (0.08)	0.49
	Uruguay	06 (0.07)	0.42
	Paraguay	02(0.02)	0.14
	Ecuador	01(0.01)	0.07
		1407 (16.51)	

(Figures in the parenthesis indicate percentage)

During the Analysis Europe emerged the top contributor to open access publishing, exceeding all other world regions by publishing 3715 journals, contributed by 43 actively participating nations across Europe. Europe alone contributes as much as 37.15% OA journals at global level. U.K, Spain and Germany lead the European table with their individual contribution of 575, 442, and 259 journals. Europe is followed by North America with its 1749 journals which constitute 20.53% of total open access publishing journals. Out of 23 North America countries 14 contribute to OA publishing. United States, Canada and Mexico are the top three countries from North America which contributed to OA publishing with 1270, 255 and 126 journals respectively. U.S is the highest contributor to open access publishing at global level, contributing 14.90 % OA Journals. Asia ranks 3rd with its contribution of 1477 journals, constituting 17.33% share at global level. India, Turkey and Iran are the top three contributing countries from Asia with global percentage share of 5.43%, 2.46% and 1.94% respectively with in all 34 countries from the continent contributing to OA publishing. South America ranks 4th with its contribution of 1407 journals constituting 16.51% share at global level. Brazil, Colombia and Chile are the top three contributors from the continent, contributing 801, 201 and 141

journals respectively and rest of the contribution comes from the seven countries of the continent. Africa ranks at 5th place with its contribution of 477 journals, which constitutes 5.59% of the total global share. From African continent only 18 countries are actively engaged with the publication of OA journals with Egypt, South Africa and Nigeria the top contributors from the continent having global percentage share of 4.10%, 0.63%, and 0.30% respectively. Rest of the OA contribution from Africa comes from 15 countries. Oceania rank 6th and the last among continents when it comes to OA contribution at global level. Australia and New Zealand are the only two countries from the continent which are engaged with open access publishing which otherwise is a home of 14 countries. In all 243 OA journals are published from Oceania constituting 2.87% of the total global share, with Australia tops the table with 123 journals and 120 by New Zealand, moving neck to neck with each other.

Table-VII Top contributors to open access publishing at continental level

Continent	Africa	Asia	Europe	North America	Oceania	South America
Country	Egypt	India	U.K	U.S	Australia	Brazil
Number of journals	350	463	575	1270	123	801
%age share at continental level	73.37	31.34	18.16	72.61	50.61	56.92
%age share at global level	4.10	5.43	6.75	14.90	1.44	9.40

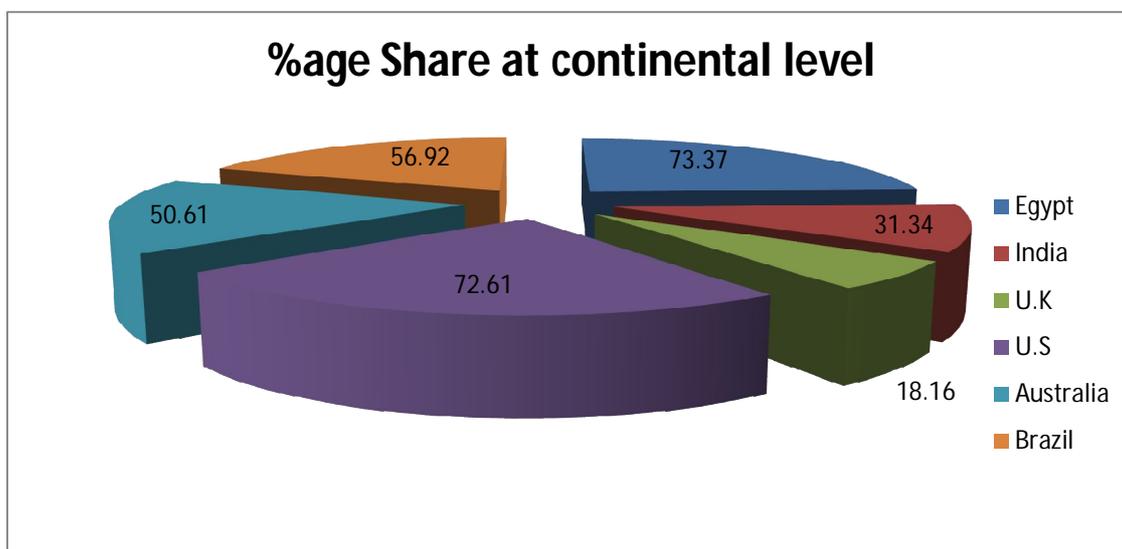


Figure 6

The above tabulation was drawn to assess the top contributors of open access publishing from each continent. From the tabulation and the pie diagram drawn we can see the share of six top contributors from six different continents across the globe with percentage share they enjoy both at global and continental level. U.S from North America ranks the top contributor with its share

of 1270 OA journals both at global and continental level. At the continental level U.S alone contributes 72.61% of OA journals and at global level its contribution share stands at 14.90%. Brazil from South America is the second largest country having 801 OA journals to its credit, thereby making it 56.92% share at continental level and 9.40% share at global level. Brazil has also the distinction of being the 2nd largest OA journals publishing country after U.S. Europe though as a continent is the largest contributor to OA publishing at global level but U.K with its OA journals share of 575 ranks 3rd having continental level contribution of 18.16% and global level contribution of 6.75%. From Asia India is the top contributor with its contribution of 463 OA Journals makes it rank at 4th spot exactly behind U.K at global level having global contribution share of 5.43% and continental share of 31.34%. From Africa Egypt with its tally of 350 OA journals makes it top contributor from Africa enjoying a global share of 4.10% contribution and 73.37% at continental level. At the global level Egypt stands at 6th rank behind Spain who contributes 442 OA journals. From Oceania only two countries contribute to OA publishing both moving neck to neck in their contribution but it's the Australia with its 123 OA journals tops from Oceania ranking at number 7 spot, which is quite contrary to the global ranking where Australia enjoys 18th spot. Australia at continental level makes 50.61% contribution while at the same contribution at global level makes it meager 1.44%.

Table-VIII Continental level percentage contribution to open access publishing

S.No	Continent	% age contribution
01	Europe	3165 (37.15)
02	North America	1749 (20.53)
03	Asia	1477 (17.33)
04	South America	1407 (16.51)
05	Africa	477 (5.59)
06	Oceania	243 (2.85)

(Figures in the parenthesis indicate percentage)

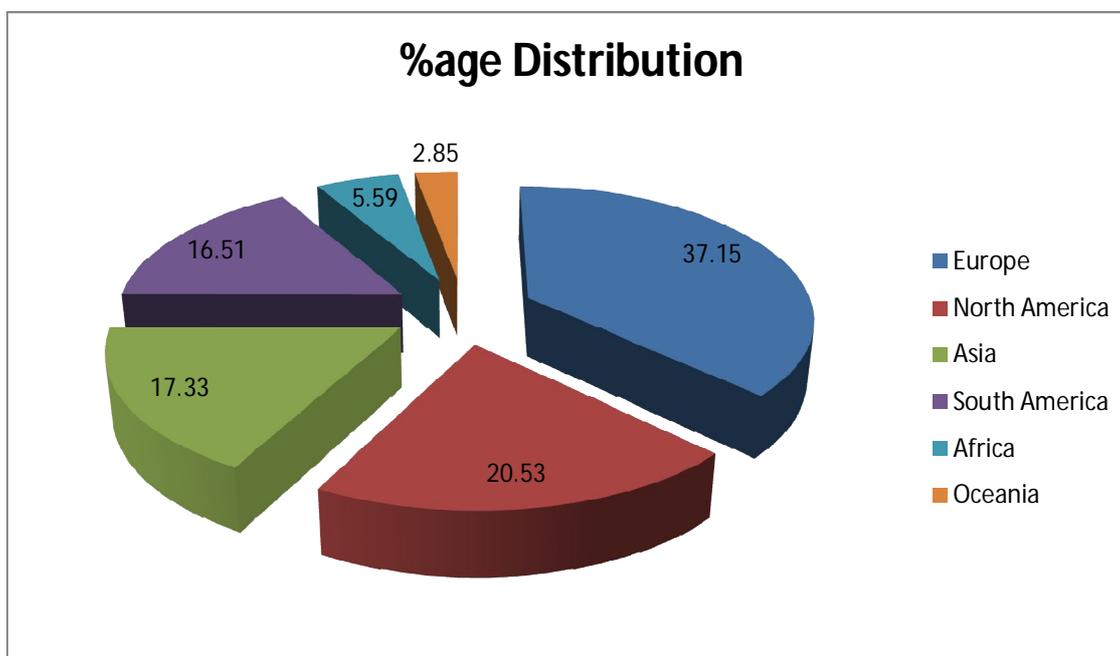


Figure 7

This tabulation was drawn to give a clear idea about the contribution from each continent towards the open access publishing. From the tabulation and pie representation we can see Europe with its share of 3165 OA Journals leads the table enjoying 37.15% contribution at global level. North America ranks 2nd with its share of 1749 Journals and thereby making it 20.53% global share. Asia with 1477 journals ranks at 3rd spot making its global contribution of 17.33%. South America, Africa and Oceania makes it to 4th, 5th and 6th spot respectively with their respective contribution of 1407, 477 and 243 journals which accounts for 16.51%, 5.59% and 2.85% of global share respectively.

Table-IX Continental level participation of countries to Open Access Publishing

S.No	Continent	%age Participating countries	%age share at global level	%age share at continental level
01	Europe	43 (35.53)	194 (22.16)	47 (91.48)
02	Asia	34 (28.09)	194 (17.52)	44 (77.27)
03	Africa	18 (14.87)	194 (9.27)	54 (33.33)
04	North America	14 (11.57)	194 (7.21)	23 (60.86)
05	South America	10 (8.26)	194 (5.15)	12 (83.33)
06	Oceania	02 (1.65)	194 (1.03)	14 (14.28)
	Total	121	194 (62.37)	

(Figures in the parenthesis indicate percentage)

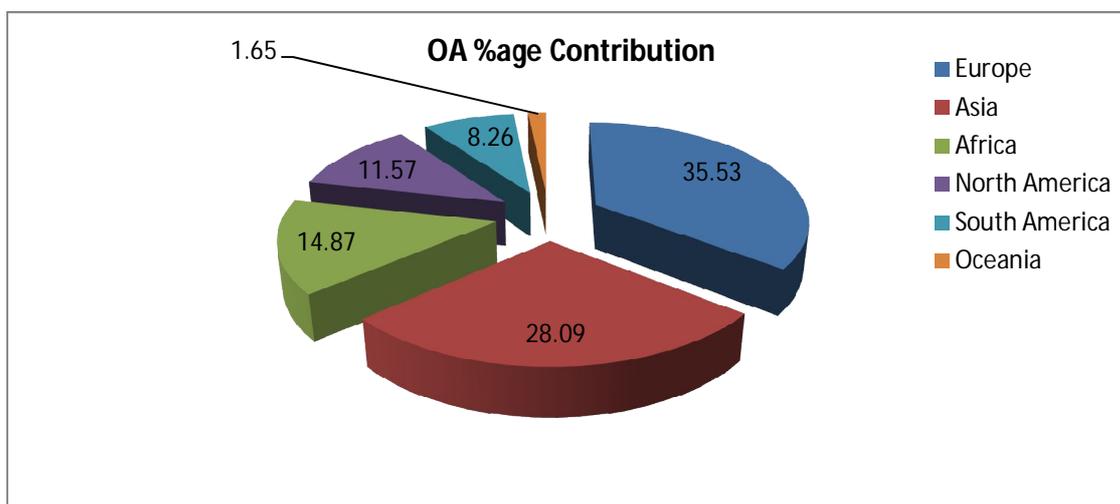


Figure 8

Continental level participation of countries in the open access publishing is also very vital to see so as to assess the exact details about the number and amount of countries which are actively involved with OA publishing and as such believe in OA publishing format. To begin with Europe with 43 countries tops the table which on the whole makes its 35.53% of total countries participating in OA publishing, which makes it a global share of 22.16% and continental share of 91.48%. Asia with its 34 countries 28.09% of total countries participating in OA publishing, 17.52% at global level and 77.27% countries from the continental level. Africa emerged the third largest continent which with 18 countries involved with OA publishing shares 14.87% of total countries participating in OA publishing and making it 9.27% global share and 33.33% countries at continental level. Accordingly North America ranks 4th South America 5th and Oceania 6th as these continents contribute 11.57%, 8.26% and 1.65% of total countries participating in OA publishing respectively, making it global share of 7.21%, 5.15% and 1.03% and continental share of 60.86%, 83.33% and 14.28% respectively.

CONCLUSION: -There is no denial in it that OA has got a promising future the way people have grown conscious of it and the way they have embraced it. OA has thrown open the new vistas for publishing research results and the trend is not confined to one or two countries but has already engulfed the whole world. From the above analysis we can see how actually the OA journals have shown growth during the last decade and trend which as on date is set with 121 countries of the world will soon make it to the entire globe. After all, what is the point in not making research results available to public free of cost when the same is aimed for their welfare and betterment? Besides when one can seek the desired information without paying for it why should one opt for a paid option? All this has somewhat advocated towards the open access movement which whole world has welcomed and embraced with both arms. Shrinking library

budgets and other factors do advocate of turning face towards OA journals for having larger reach, greater visibility and above all free of cost.

Analysis of the study showed that how OA moment has actually spread all across the six continents of the world. If it is Europe on one hand which is the largest contributor to open access publishing, on the other has U.S alone publishing more than 1270 OA journals which is far greater than the many small countries when taken together even more than the continents like Africa and Oceania. The one important thing which is pertinent to make mention of is, most of the countries publishing their research results in OA format are the developed ones which other way round also corroborates the fact that more we make research results available to public free of cost more we can see countries progressing. Because ultimately what matters the most is how efficient our delivery system is, be it about research output or its applications and the OA has proved that it is one of the best methods of making optimum use of research outputs.

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