

OPEN ACCESS JOURNALS: A GLOBAL PERSPECTIVE

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ABSTRACT

The study explores the growth and development of open access journals worldwide from different perspectives. The major causes of the success of open access in developed countries and low acceptance by developing and other countries is also discussed. The results are based on exploration of open access publications by SCOPUS-a major indexing service.

KEYWORDS

Open Scholarly Communication; Open Access Journals

INTRODUCTION

The challenges faced by the user community in viewing the online contents was always a challenging task. The users had to pay huge amounts to view for their interested information. By the launch of the first open access journal "*PLoS Biology: Monthly*" in October 2003 by the Public Library of Science (PLOS), opened new vistas in the scholarly communication process (Reitz, 2006). With open access revolution, the information content was made freely and universally available via Internet in an easy to read format. The seeds of the open access revolution trace back to the year 2001 when the scientific community began to realize the need of "*Right to Information*". It was basically the

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funds of the public on which the research at a global level was carried out. So, the need for making the newly generated information available to the public free of cost via Internet realized the need of open access. Now, research in a diversity of ways is made available to the general public. Open access is a new model of scholarly publishing, developed to free researchers and libraries from the limitations imposed by excessive subscription price increases for scholarly literature. By breaking the monopoly of publishers over the distribution of scientific research, open access makes access to scientific information more equitable and has the added advantage of allowing the author to retain copyright. The open access in its various facets has emerged as a new concept in the scholarly process. Journals, books, conference proceedings, reports, monographs and many more have embraced this new born technology, as it has helped to make them more trendy among the masses in general and scholarly community in particular for facilitating research and scholarship. Institutions like *PLoS*, *BioMed Central*, *PubMed Central*, *SPARC* and many more are proving as a success story in the open access movement. Readers, virtually all scholars want free online access to the full text as opined by **Falk (2003)**. Superficially, OA takes advantage of two factors. First, scholarly authors do not derive any direct income from publishing, yet they have an interest in the high visibility of their publications. Second, in comparison to print, the Internet has the potential to make the distribution of documents relatively inexpensive. Numerous definitions of what constitutes OA and how to achieve it exist. **Lynch (2006)** defines open access as “an increased elimination of barriers to the use of the scholarly literature by anyone interested in making such use. Another definition of open access from the Association of Research Libraries (ARL) in the United States refers to any

dissemination models created with no expectation of direct monetary return and which makes works available online at no cost to the readers (ARL, 2008). Despite some differences, all refer to a mode of enabling perpetual, free, online access to scholarly literature, either by publishing in OA journals or through the archiving of material published elsewhere in OA repositories or on the authors' own websites. Some are more restrictive and refer solely to the peer-reviewed literature, while others take a broader view and also include pre-prints and other un-refereed material, as well as, for example, teaching materials or data sets (Jutta, 2007). In essence, most open access proponents agreed that scholarly literature should be freely available online (Suber, 2003). Scholarly associations and societies have been pioneering the open access movement, especially the *American Association for Cancer Research*, *the American Cancer Society*, *the American Diabetes Association*, *the American Heart Association*, *the American Physiological Society*, *the American Meteorological Society*, *the American Society for Biochemistry and Molecular Biology*, *the American Society for Microbiology*, *the American Society for Pharmacology and Experimental Therapeutics*, *The Endocrine Society*, *the Society for Endocrinology*, *the Society for General Microbiology*, and *the Royal College of Psychiatrists* which offer open access to hundreds of thousands full-text documents (Jacso, 2006). The open access movement especially in the form of open access journals has achieved momentous results in a very short span of time and everyone all over the globe is looking for its glorious future and everyone is ready to have a golden handshake with it.

LITERATURE REVIEW

A number of studies have been carried out to trace the growth and development of open access movement and its impact on the learning process. A study carried out by **Falk (2004)** clearly divulges that a total of 1200 journals in the year 2004 represented themselves in an open access format when compared to the year 1992 when just only five journals offered open access to the material they published. Another study by **Jacso (2006)** reveals that there were more than 30,000 abstracts or summaries for articles published in journals of emerald publishing between 2000 and 2006 (as of May 2006). Open access is seen as constituting a way to better connect the “*developing world*” to the system of science, by potentially providing access to scientific literatures published in the “*developed world*” (**Chan & Costa, 2005; Chan et al., 2005; Chan & Kirsop, 2001; Arunachalam, 2003; Ramachandran & Scaria, 2004; Deschamps, 2003; Scaria, 2003; Weitzman & Arunachalam, 2003; Tenopir, 2000; Smart, 2004; Durrant, 2004**). More generally, OA is perceived as potentially extending the readership and reach of scientific publications from the “*developing world*”, and thus as increasing its visibility and impact (**Arunachalam, 2003; Ramachandran & Scaria, 2004; Davison, Haris, Licker, & Shoib, 2005; Deschamps, 2003; Scaria, 2003; Weitzman & Arunachalam, 2003; Tenopir, 2000; Smart, 2004; Durrant, 2004; Rajashekar, 2004**). Open access archives are good for the goose and good for the gander. The advantages for the end-users are obvious, but the advantages for the publishers, the editors and the authors have been less apparent until a short but illuminating article. (**Lawrence, 2001**) demonstrated that open access of articles can substantially increase their impact, and

implicitly, the impact factor of the source journals. Since that time many studies have confirmed (and a few questioned) the validity of these findings. Particularly interesting is the report of **Harnad & Brody (2004)** which compared the impact of open access and non open access articles from the same journals and concluded that open access articles have more impact. Members of the *OpCit Project* at Southampton University have created an up-to-date, annotated Webliography about the effect of open access on the impact of articles, and conference papers. (**Papin-Ramcharan & Dawe, 2006**)

PROBLEM

Keeping in view the pace of open access information contents, the study highlights the growth and development of open access journals from different viewpoints. The study focuses on the developmental perspective of open access journals selected from world renowned indexing database "*SCOPUS*".

OBJECTIVES

The main objectives of the study are to

- Find the geographical scatter of OA journals
- Explore the development of journals contributing to OA movement
- Analyze frequency distribution of OA journals
- Understand creditability and authenticity of open access contributions.

METHODOLOGY

The *SCOPUS* service was used and 1060 publications were retrieved from the database for evaluation and analysed critically for realizing the

defined objectives. However, for achieving the set objectives the data was put in to excel format for better retrieval.

SOURCE

Scopus (<http://www.scopus.com/>) is the world's largest abstract and citation database of peer-reviewed literature and quality web sources. Scopus covers more than 15,000 peer-reviewed journals in Science, Technology, Medicine and Social Sciences from over 4,000 international publishers. Content coverage is reliable and high quality, and one can find articles that he/she won't find in other databases. However, scope is limited to the open access titles indexed by SCOPUS because its claims to be the most comprehensive Scientific, Medical, Technical and Social Science point of access containing all relevant literature.

RESULTS & DISCUSSION

➤ Geographical Distribution

During analysis it is found that Europe exceeds all the world regions in research and production contributing 385 journals. North America (257) ranks 2nd and Asia (205) 3rd. South America contributes 182, Australia 22 and Africa just 9 journals. This decrease in open access movement down to east is expected as western block mostly comprises of countries with developed economies which have moved ahead in terms of technology, but quite interesting that Asia is emerging fast in open access with a lively and promising contribution.

The deep analysis reveals that UK, Spain and Germany contribute 157, 39 and 30 journals respectively which form 58.70% of total in Europe. USA produces 195 and Canada 30 journals which constitute 87.54% of the North American continent. Likewise, Japan contributes 89 and India

53 journals that comprise 69.28% of the continent Asia. In South America, Brazil and Chile produces 87.36% journal output with individual contribution of 127 and 32 journals correspondingly. This makes it further clear that the major players in all the continents are those countries which are economically and technologically far advanced in their respective continents. (Table 1).

Table 1 Geographical (Continental and Country) Distribution

Continent	Country	Journals
Europe	UK	157 (14.81)
	Spain	39 (3.67)
	Germany	30 (2.83)
	Turkey	28 (2.64)
	Poland	24 (2.26)
	France	14 (1.32)
	Austria	11 (1.03)
	Croatia	11 (1.03)
	Switzerland	10 (0.94)
	Czech Republic	9 (0.84)
	Ukraine	6 (0.56)
	Slovenia	5 (0.47)
	Hungry	4 (0.37)
	Italy	4 (0.37)
	Netherlands	4 (0.37)
	Norway	4 (0.37)
	Greece	3 (0.28)
	Ireland	3 (0.28)
	Romania	3 (0.28)
	Slovakia	3 (0.28)
Sweden	3 (0.28)	
Lithuania	2 (0.18)	

Continue

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	Belgium	2 (0.18)
	Finland	2 (0.18)
	Serbia	2 (0.18)
	Denmark	1 (0.09)
	Portugal	1 (0.09)
	Total	385 (36.32)
North America	USA	195 (18.39)
	Canada	30 (2.83)
	Cuba	12 (1.13)
	Mexico	12 (1.13)
	Colombia	7 (0.66)
	Puerto Rico	1 (0.09)
	Total	257 (24.24)
Asia	Japan	89 (8.39)
	India	53 (5.00)
	Pakistan	15 (1.41)
	Korea	13 (1.22)
	Iran	8 (0.75)
	Taiwan	6 (0.56)
	China	5 (0.47)
	Russia	5 (0.47)
	Hong Kong	2 (0.18)
	Israel	2 (0.18)
	Nepal	2 (0.18)
	Singapore	2 (0.18)
	Bangladesh	1 (0.09)
	Philippines	1 (0.09)
	Thailand	1 (0.09)
	Total	205 (19.33)

Continue

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South America	Brazil	127 (11.98)
	Chile	32 (3.01)
	Venezuela	14 (1.32)
	Argentina	6 (0.56)
	Costa Rica	2 (0.18)
	Peru	1 (0.09)
	Total	182 (17.16)
Australia	Australia	18 (1.69)
	New Zealand	4 (0.37)
	Total	22 (2.07)
Africa	Nigeria	3 (0.28)
	South Africa	3 (0.28)
	Egypt	1 (0.09)
	Ghana	1 (0.09)
	Senegal	1 (0.09)
	Total	9 (0.84)

Note: Figures in parentheses indicate %age

➤ Chronological Development

Though the wave of open access literature is a recent one, but the journals which are today available through OA mode, large number of them have been in print from a long time back. Therefore, study made strenuous efforts with the objective to find first year of publication of the journals which are available through OA mode. It is found that more than 40% (425) were being published before 1980's. So, we may infer that the open access journals published are no way lacking the authoritativeness which is being attributed to them considering them craze wave of ICT with credibility.

Delve deep study of the OA makes it clear that from year 2000 onwards, 257 journals have emerged in OA mode till date. In decade of 90's total

of 226 journals were published which either directly or later on have switched to OA mode. In 1980's a total of 118 journals made their debut, while in 1970's and 1960's it was 108 and 88 respectively which later on switched to OA mode. The interesting thing as deciphered (**Table 2**) is that OA movement is having journals which were published way back in 1860's giving high credibility to OA movement. (**Fig. 1**)

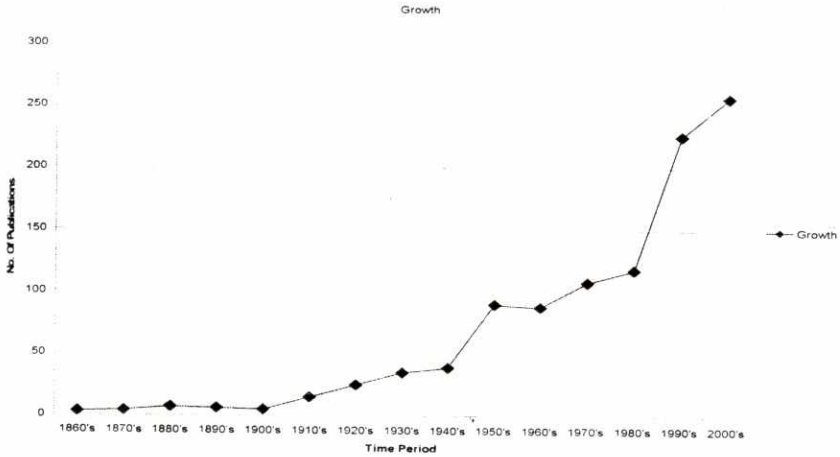
Table 2 Decade Wise Growth

Decade	Growth
2000's	257 (24.24)
1990's	226 (21.32)
1980's	118 (11.13)
1970's	108 (10.18)
1960's	88 (8.30)
1950's	90 (8.49)
1940's	39 (3.67)
1930's	35 (3.30)
1920's	25 (2.35)
1910's	15 (1.41)
1900's	5 (0.47)
1890's	6 (0.56)
1880's	7 (0.66)
1870's	4 (0.37)
1860's	3 (0.28)
NT*	3 (4)
Total	1060

*NT: Could not be traced

Note: Figures in parentheses indicate %age

Fig 1 Decade wise Growth



➤ **Frequency**

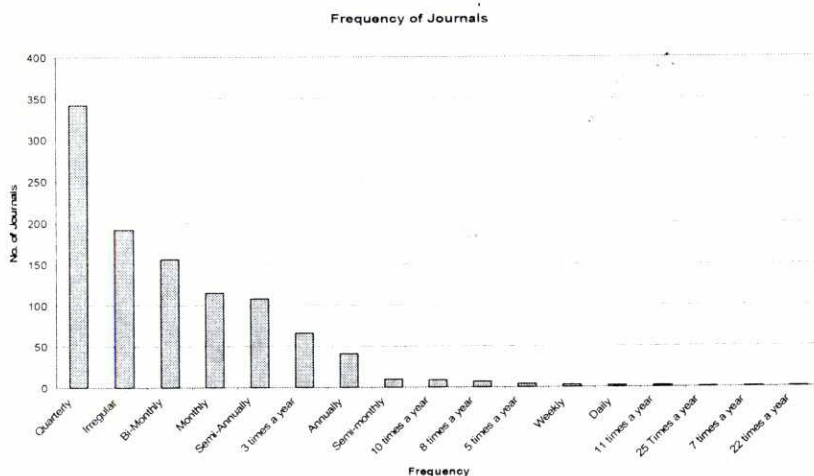
It is found that frequency varied from daily to annually. Therefore, an effort was made to bring forth the frequency pattern. The most prominent frequency of publication of OA journals is quarterly with 342 journals followed by Bi-monthly pattern from 156 journals (though irregular is the second highest number i.e. 192, but can not be considered at 2nd rank, as irregular frequency is not a standard form of scholarly publication pattern). There are 115 journals which are published monthly, while 108 show semi-annual pattern. As we move down the table, we find varied frequency patterns from 3 times a year to daily. Such a pattern is shown by a very small number of journals. (Table 3; Fig. 3)

Table 3 Frequency Distribution

FREQUENCY	TOTAL
Quarterly	342 (32.26)
Irregular	192 (18.11)
Bi-Monthly	156 (14.71)
Monthly	115 (10.84)
Semi-Annually	108 (10.18)
3 times a year	66 (6.22)
Annually	41 (3.86)
Semi-monthly	10 (0.94)
10 times a year	9 (0.84)
8 times a year	7 (0.66)
5 times a year	4 (0.37)
Weekly	3 (0.28)
Daily	2 (0.18)
11 times a year	2 (0.18)
25 Times a year	1 (0.09)
7 times a year	1 (0.09)
22 times a year	1 (0.09)
TOTAL	1060

**Note: Figures in parentheses indicate %age*

Fig 3 Frequency Distribution



➤ **Refereed and Non Referred**

Refereed materials are publications reviewed by "expert readers" or "referees" prior to the publication of the material. Refereed materials are also referred to as Peer Reviewed which are significant to the research. Non-refereed materials use less rigorous standards of screening prior to publication. During the study a total of 769 (72.54%) publications were found referred ones which simply shows the authenticity of the work in open access publications is on the meticulous efforts of the researchers whereas only 291 (27.45%) of the publications are non refereed ones as is evident from **Table 4** . The refereed publications permits specialists familiar with research similar to that presented in the paper to judge whether the paper makes a contribution to the advancement of knowledge.

TABLE 4 Refereed vs. Non Refereed Publications

R	769 (72.54)
NR	291 (27.45)
	1060

**Note Figures in parentheses indicate %age*

CONCLUSION

Open access has come up with a promising future of making the scholarly content free of cost available to everyone. It has widened the information exchange market and is becoming a worldwide effort to provide free online access to scientific and scholarly research literature in diverse formats including open access journals. The open access

scholarly output from the developed countries like United States of America, Canada, Japan, New Zealand, Spain, Germany, Switzerland etc. is quite good because of trademark "*High Income Countries*" given to them by *World Bank*. Furthermore, the "*Human Development Index*" of the above mentioned countries is also high which takes in to account how income is turned into education and health opportunities and therefore into higher levels of human development. This has resulted in vibrant activities of open access that are causing big storms now in every sphere of world especially in the developed nations and the time is not far for the scholarly literature to have the giant leaps with its availability to every research scholar free of cost cutting down all the barriers, but it is still advisable to look out for new developments so that this new word in the scholarly literature will be the dearest possession of everyone, even the developing nations having very low "*Human Development Index (HDI)*". Amongst the developed nations United States of America is in lead because of the land of the slogan "*Information for all*" and high *HDI*. On the contrast the developing countries having an inconsistent varying "*Human Development Index*" have jumped in to "*Big Emerging Market*" (*BEM*). With such countries like Argentina, Brazil, China, Egypt, India, Indonesia, Mexico, Philippines, Poland, Russia, South Africa, South Korea and Turkey in the *BEM*, open access is seeing a spurting growth in these nations rapidly. The least developed countries like Angola, Eritrea, Haiti, Solomon Islands, Somalia, Bhutan, Afghanistan, Bangladesh, Uganda, Yemen, Nepal, Zambia, Cambodia, Central African Republic, Maldives etc. have to emerge dynamically in the open access market to keep pace with the rest of the world. Countries with long-term civil war or large-scale breakdown of rule of law ("*failed states*") (e.g. Afghanistan, Haiti, Somalia, Myanmar, Iraq) or "*non-*

development-oriented dictatorship" (North Korea); they sometimes also have low resources that has hindered their development in the open access market. Moreover, scholarly communication through open access mode sees more authenticity and credibility because of the representatives of the early 1800's scholarly publications that are peer reviewed and refereed ones giving the work of the authors more authenticity and visibility. The growth of open access literature can be more clearly visualized because of the highest number of the scholarly publications which are having a quarterly frequency. That clearly indicates more productivity of research via open access mode. The emerging scope of scholarly communication has to see wider spheres because of the flavours of open access.

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