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Scholarly Communication in *International Journal of Digital Curation* from 2006-2017: a DOAJ based study

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Abstract

The present study is a bibliometric analysis of 328 articles from 11 volumes published in *International Journal of Digital Curation* published by University of Edinburgh, U.K from 2006-2017. The study is based on three basic objectives in terms of yearly distribution of articles, authorship pattern and degree of collaboration in the journal. Data collection is done from DOAJ. The result revealed that year 2009 was the most fruitful year with 46 articles, Single authorship showing highest contribution and extent of collaboration recorded is considerable with a overall value of 0.69.

Keywords

Bibliometrics, DOAJ, Digital curation, Open access, Digital preservation.

1. Introduction

International Journal of Digital Curation (IJDC) is a peer reviewed electronic journal (ISSN 1746-8256), publishes two issues per year by University of Edinburgh for the Digital Curation Centre (U.K). The scope of the journal comprises with policy, strategic, operational, experimental, infrastructural, and tool-based aspects of digital data and other objects of value to research, cultural heritage or society. The journal added to Directory of Open Access Journal (DOAJ) on 21 December 2006 and continuously delivering quality research papers in the major fields like digital preservation, research data access and research data management for Library and Information Science and allied disciplines. The open access initiatives took place in early 2000 leads to publish quality research papers which use to be free from all legal, financial and social restrictions. Directory of Open Access Journals (DOAJ) is one such result from those initiatives. It indexes and publishes high quality research papers and peer reviewed journals that includes 25 main subject fields and facilitates searching both via journals and articles. The present study is a bibliometric approach to assess 328 articles published in IJDC based on various parameters through DOAJ.

The term "Bibliometric" means -"The application of mathematics and statistical methods to books and other media of communication". (Pritchard,1969). This is the original area of study covering books and publications generally. The term "bibliometrics" was first coined by Alan pritchard in 1969 and proposed by Otlet in 1934, became one of the most frequently used research topic and tool in Library and Information Science and other discipline. Bibliometric study is usually performed to assess the quantitative aspect of scholarly communication in science and its application.

2. Related Works (Literature Review)

While analyzing IJIDT Shukla & Moyon (2017) found that dual authorship pattern (45.94%) is leading in the journal while single authorship (36.67%). the results also revealed that 483 authors contributed 259 research papers to the journal, out of which 24.22% authors belongs to Volume 4 of the journal followed by Volume 3 with 20.7% authors. Sivasekaran & Raghavan (2014) analyzed in their research 'Journal of Astrophysics and Astronomy: A Bibliometric Study' that majority of

contribution were recorded from India as well as were single authored and maximum number of author were affiliated with academic institutions.

Hussain (2013) analyzed *Annals of Library and Information Studies* (2006 -2010) and found that maximum numbers of articles were published in the year 2010. Further, he found that majority of the articles have shown dual authorship pattern and major contributions were from New Delhi. Panda & others (2013) analyzed *Journal of Information Literacy: An Open Access Journal*, (2007-2012) and found that majority of contribution (71.75%) is come from UK and approximately all the publications (94.65%) are from academic institutions. Thanuskodi S (2011) analyzed the journal titled "Library Herald" (2006 -2010) and founded that out of 138 articles, single author contributed 72 (52.17%) articles while remaining 66 (47.83%) articles were contributed by joint authors. The study found that 89.85 % of total publications is from India and the remainig 10.15 % only from foreign countries. Verma, Sonkar and Gupta (2015) analyzed *Library philosophy and practice* (e-journal) and concluded that Single author papers were 568 with highest percentage (48%) in the whole period (2005-2014). Two authored papers are more in number (421 papers) with 36% within collaborative contribution than three authored (152 papers) having 13% contribution. More than three authored papers are lesser in number (36papers) having just 3% contribution in the journal. Awasthi & Jaiswal (2015) analyzed the slightly increase in the repository of library science journals over the years in DOAJ and print journals archive was leading over online journals archive. Devendra (2014) analyzed 140 free full text online journals through DOAJ in Environmental Science discipline and found that the United States publishes more open access journals (14.29%) in Environmental Science whereas Indian contribution is only 5%. English was the dominating language for publishing articles in the field of Environmental Science.

3. Scope of the study

The scope of the present study comprises analysis of 328 articles published in *International journal of Digital Curation* for the period of 12 years from 2006 to 2017. The journal covered total of 11 volumes with 2 issues of each volume(except first and last volume) containing 328 research articles during this tenure. The first volume contained only one issue in 2006. The study is based on only those articles which are indexed in DOAJ till January 2018.

4. Objectives of the study

The key objectives are-

- a. to find out the year wise distribution of articles
- b. to assess the authorship pattern of the journal
- c. to examine the degree of collaboration among authors of the journal

5. Methodology of research

A total of 328 articles from the year 2006-2017 from *International Journal of Digital Curation* (IJDC) are retrieved, tabulated, and analyzed in MS-Excel statistical software. Data are graphically presented for getting desired results from *Directory of Open Access Journals* (DOAJ) using the URL-<https://doaj.org/journals> on 6th January 2018.

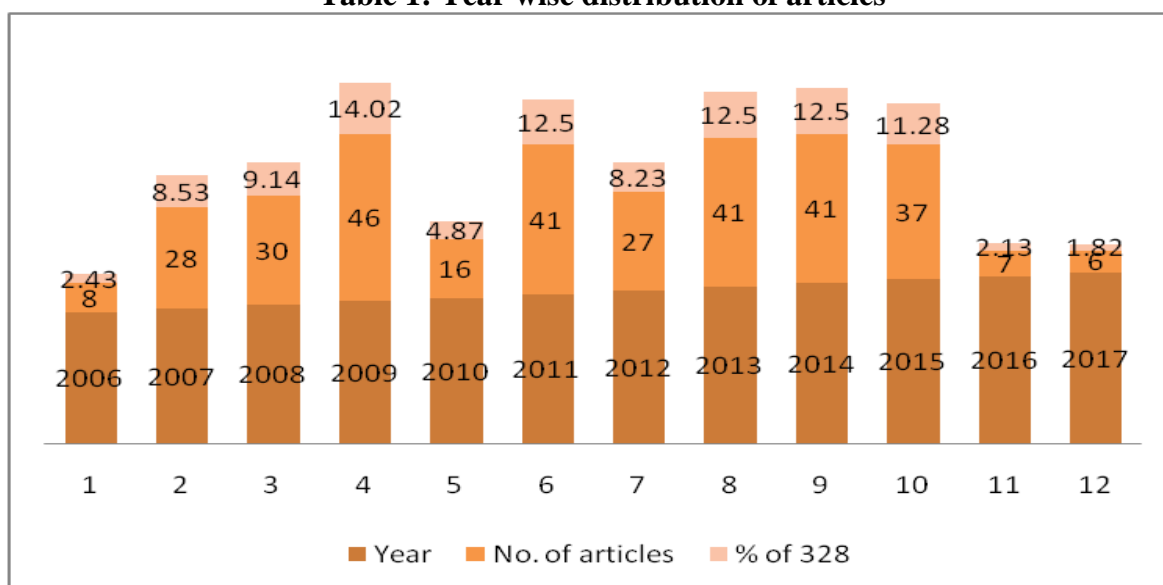
6. Analysis and Interpretation

A. Year wise distribution of articles

Based on analyzed data retrieved from DOAJ, table 1 represents year wise distribution of total articles published in IJDC. The result shows that year 2009 is the most prolific year with highest 46 publications (14.02%), while the year 2011, 2013 and 2014 are the three respective years with same number of 41 (12.5%) publications. Year 2017 is observed with least number of 6 articles (1.87%) till the DOAJ indexed the articles from IJDC.

Year	Volume	Issue	No. of articles	% of 328
2006	1	1	8	2.43
2007	2	2	28	8.53
2008	3	2	30	9.14
2009	4	2	46	14.02
2010	5	2	16	4.87
2011	6	2	41	12.5
2012	7	2	27	8.23
2013	8	2	41	12.5
2014	9	2	41	12.5
2015	10	2	37	11.28
2016	11	1	7	2.13
2017	11	1	6	1.82
Total		21	328	99.95

Table 1: Year wise distribution of articles



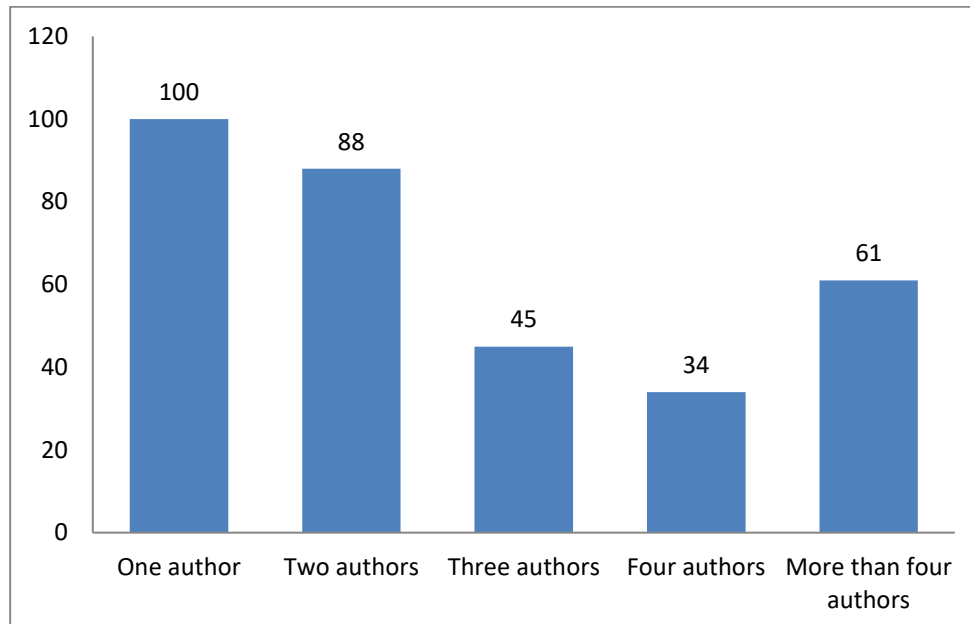
B. Authorship Pattern

Table 2 represents authorship pattern of the research output of IJDC from 2006 to 2017. The analysis revealed that 30.48% of total publication is contributed by single authors, and thus became more prolific than 26.82% contribution by two authors and 18.59% by more than four authors. 13.71% of total publications are contributed by three authors and only 10.36% of total publications are contributed by four authors and that revealed that collaboration impact is high in this journal.

Table 2: Authorship pattern of articles

Year	Volume	No. of Publications by One author	No. of Publications by Two authors	No. of Publications by Three authors	No. of Publications by Four authors	No. of Publications by More than four	Total publications
2006	1	5	2	0	0	1	8
2007	2	15	7	2	1	3	28
2008	3	11	9	3	5	2	30
2009	4	19	14	8	3	2	46
2010	5	2	2	4	3	5	16
2011	6	9	14	4	3	11	41
2012	7	9	6	1	3	8	27
2013	8	8	8	8	6	11	41
2014	9	11	7	7	6	10	41
2015	10	10	14	5	3	5	37
2016	11	0	4	3	0	0	7
2017	12	1	1	0	1	3	6
Total		100 (30.48%)	88 (26.82)	45 (13.71)	34 (10.36%)	61 (18.59%)	328 (99.96)

Authorship pattern of all publications



C. Degree of collaboration

The degree of collaboration is measured by Subramanyam (1982) formula which states as- degree of collaboration (C) is the ratio of Number of multi-authored papers to the sum of Number of single-authored papers and Number of multi-authored papers which has been formulated as-

$$C = Nm / Nm + Ns$$

where, C = Degree of collaboration

Ns = Number of single authors

Nm = Number of multiple authors

based on above mention formula the degree of collaboration C has been calculated as

$$C = 228/228+100$$

$$= 228/328$$

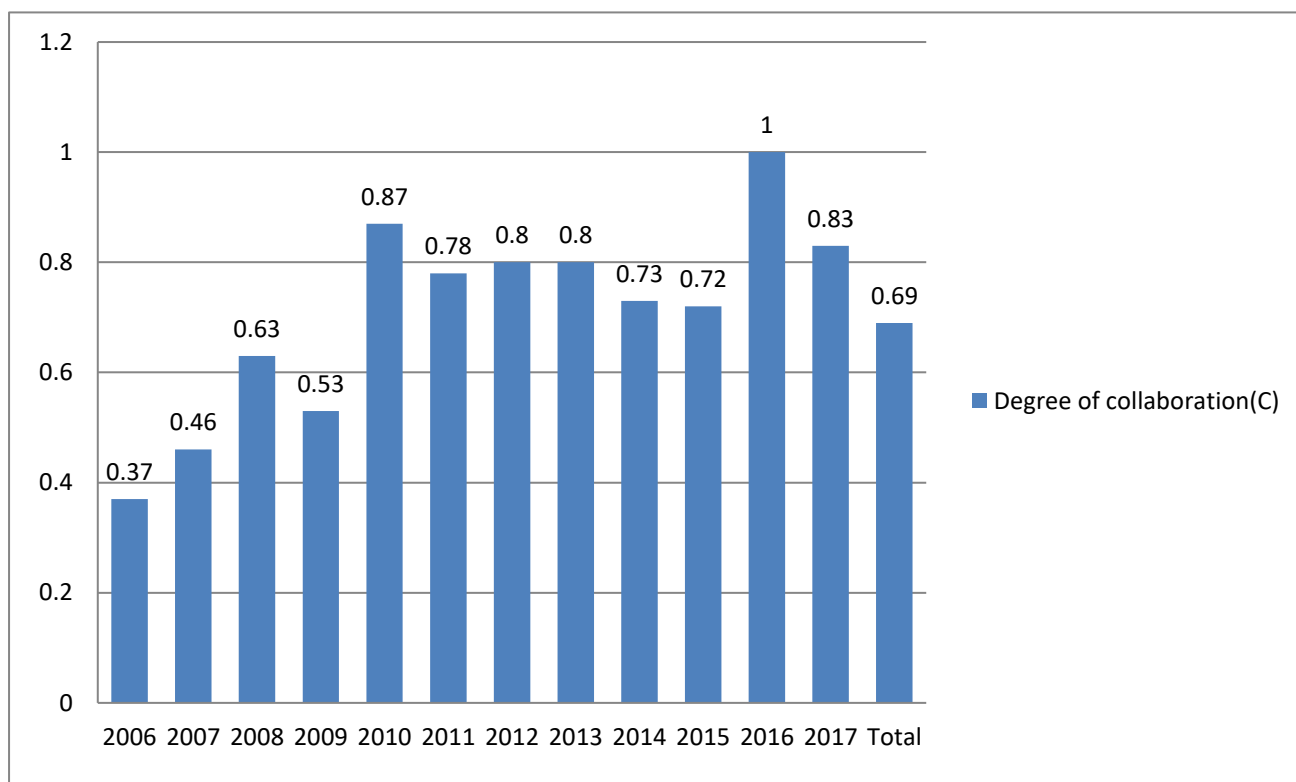
$$= \mathbf{0.69}$$

The result in table 3 determined that total 100 publications are from single authors from 2006-2017 time span, while 228 publications are contributed by multiple (more than one) authors. The extent of collaboration in different volumes has been calculated and it lies between 0.37 to 1. The total collaboration extent is 0.69 which shows that the journal exhibit considerable amount of collaboration among authors. The higher value of degree of collaboration depicting more collaborative research publications and vice-versa.

Table 3: Degree of Collaboration

Year	Volume	Single authors(Ns)	Multiple authors(Nm)	Total authors(Ns+Nm)	Degree of collaboration(C)
2006	1	5	3	8	0.37
2007	2	15	13	28	0.46
2008	3	11	19	30	0.63
2009	4	19	27	46	0.53
2010	5	2	14	16	0.87
2011	6	9	32	41	0.78
2012	7	9	18	27	0.8
2013	8	8	33	41	0.8
2014	9	11	30	41	0.73
2015	10	10	27	37	0.72
2016	11	0	7	7	1
2017	11	1	5	6	0.83
Total		100	228	328	0.69

Year wise degree of collaboration (C)



6. Results and Findings

1. The result of the above study reveals that in year wise distribution of publications year 2009 is the most fruitful year with 46 publications (14.02%), while the year 2011, 2013 and 2014 are the three respective years with same number of 41 (12.5%) publications. Year 2017 is observed with least number of 6 articles (1.87%).

2. The second finding represents authorship pattern and analysis revealed that highest number of 100 publication (30.48%) of total publication is contributed by single authors, and thus became more prolific than 88 (26.82%) contribution by two authors and 61 (18.59%) by more than four authors. 45 (13.71%) of total publications are contributed by three authors and only 34 (10.36%) of total publications are contributed by four authors and that revealed that there is considerable amount of collaboration is done in this journal.

3. The third finding investigates the extent of collaboration and find that 0.69 is the overall value of degree of collaboration when calculated year and volume wise. 2017 is the most collaborative year in terms of publications by authors with highest value of $C = 1$. Total value of $C = 0.69$ depicting that the journal exhibit more publication characteristics by shared authors.

7. Conclusion

The bibliometric study conducted on 328 articles from 11 volumes of International Journal of Digital Curation from 2006-2017 using Directory of Open Access Journal (DOAJ) database based on three

basic parameters (distribution, authorship and collaboration) demonstrated several results such as, 2009 being the most prolific year as per the number of articles published is concerned, single authorship being the most prominent pattern with 100 total article contribution and with overall 0.69 extent of collaboration among authors it can be said that the studied journal exhibit considerable and qualitative amount of shared responsibility.

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