A Bibliometric study of scholarly published literature on Bibliometrics in DJLIT during 1998-2018

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Abstract: The present research paper analyzed the literature published on bibliometric research in DESIDOC Journal of Library and Information Technology during 1998-2018. Total 86 articles found on bibliometric research during the period. Researcher selected the literature survey and bibliometric research methodology for this study. Major findings of the study are as follows: Only 86 (11%) articles from bibliometric research out of 780 articles. Maximum 63 articles are written by multi-authored and only 23 articles written by single author. It is good signal for collaborative research. Degree of collaboration is 0.73. Only three foreign countries author contributed. Foreign contribution should be increase. Gender wise 77% male authors and 23% female authors contributed. Female author's contribution should be increase.
Keywords: Bibliometric Study, DJLIT, Authorship Pattern, Degree of Collaboration, etc.

1. Introduction:

Research is a structure scientific investigation each and every field of subject. Research means evaluate the old knowledge and create new invention. Libraries and information centers play a vital role in the socio-economic development of a nation. It paves the way for phenomenal growth in the literature. The consequence of this is an information explosion and interdisciplinary approach to research witnessed in the last decades. This development brought library and information centers at the center points requiring more and new services. Research articles published in the peer-reviewed journals are likely to remain very important means of distributing research findings for the future study and references.

The journals are published with the proper research methodology such as citations or references and bibliographic details. It helps to increase the authenticity and reliability of the research materials. Particularly bibliographic details help to know the name of the author, designations, affiliations, address, etc. further the references provide an authentic information quoted in the research articles which enhance the accuracy of information.

2. Review of literature:

Following some of the studies are taken for literature review.

Every creative authors, researchers, experts, and Scholars try their best enhance, to add, to rearrange the knowledge or information, content of a subject. This activity becomes more simplified with the help of review of literature. Review is an objective analysis. It helps to understand the chronological growth and development of literature in the concerned field over the period of time. F. J. Cole and Nellie B. Eales (Cole & Eales, 1917) carried out research in their paper to illustrate a historical movement, the bibliographic study used. The statistical analysis of comparative anatomy literature of period 1550 to 1860 is done. E. Wyndham Hulme (HULME, 1922) studied and coined the term 'Statistical bibliography' characteristics of statistical bibliography are explained in detail.

Allan Pritchard (Pritchard, 1969) carried out study in his article and he defined the term 'bibliometrics' and first to use in his article. He clarified that, 'Biblio' means book and

"Metric" means a scale or measure. Eleanor Chelimsky (Chelimsky, 1989) is the view that Content analysis is a set of procedures for collecting and organizing information in a standardized format that allows analysis to make inferences about the characteristics and meaning of written and other recorded material. The content analysis method is helpful in selection of the reading materials in the library. Further, it helps the researcher to know the authorship pattern, collaboration, productivity of authors, research trends, etc in the particular subject.

Sanjay L. Bhedekar (Bhedekar, 2015) did the doctoral research on authorship pattern and the research covers the data of articles written by LIS professional and abstracted in LISA (2008-2012). Iqbalahmad U Rajgoli and Ashalatha Laxminarsaiah (Rajgoli & Laxminarasaiah, 2015) authorship pattern studies in their article. Research covers the authorship pattern and collaborative research in Spacecraft technology. Kotti Thavamani (Thavamani, 2016) examined authorship pattern in his article, paper presents a bibliometric study of Collaborative Librarianship (CL) during the period of 2009-2014. The average degree of author collaboration in the Collaborative Librarianship is 0.354, which clearly indicates its dominance upon single authored contributions. Pranali S. Waghmare and Vaishali S. Khaparde (Waghmare & Khaparde, 2016) carried out the study in their research, study was undertaken to study SCOPUS database records of 2011-2015 to analyze library web 2.0. 271 papers were studied. The study shows that degree of collaboration is (0.68%). Shahaji S. Waghmode and Sunil H. Urkudkar (Waghmode & Urkudkar, 2016) analyzed the collaborative research and authorship pattern in their research article and found that 96% articles written by multi-authored and degree of collaboration was 0.96.

3. Genesis of the Journal

DESIDOC Journal of Library and Information Technology (DJLIT) is a one of primer and popular bimonthly journal in the field of library and information technology in India. It is published since 1981 up till now by DRDO. It is a peer reviewed, open access, bi-monthly journal. It publishes original research papers on Library and information science.

4. Objectives of the study:

Present study set the following objectives:
- To study the year wise distribution of articles;
- To study the authorship pattern of the articles;
- To know the gender wise contribution;
- To study degree of collaboration;
- To study the length of articles;
- To study the Ranking of authors;
- To study the geographical distribution of authors;
- To study the author's designation and affiliation.

5. Methodology, Scope and Limitation of the study:

The source journal is an open access journal. It is available on the website https://publications.drdo.gov.in/ojs/index.php/djlit. (DJLIT, 2018) Each issue was scanned and filtered articles on bibliometric study during the period of 1998-2018. All the bibliometric research articles was collected and all bibliographic data entered in the MS-Excel and analyzed as per objectives of this study. An online literature survey was conducted and required data collected from DESIDOC Journal of Library and Information Technology. For this study literature survey and bibliometric research method is used for this study. The

literature on this bibliometrics was retrieved by using Bibliometric term in the search content field. The search field was chosen as Title, Abstract and Author keywords, index terms, and full text which covers almost all central theme of a research paper. The time period was kept from 1998 (Vol.18) to 2018 (Vol. 38) (125 issues).

6. Data Analysis:

In this research paper researcher try to find out author's productivity, degree of collaboration, gender wise contributions, geographical distributions of the authors, authorship pattern, citation metrics, etc. in following parameters are as:

a. Year wise distribution of Articles

Table No. 1 shows that total 780 articles published in the study period, out of that only 86 articles published on bibliometric study. Maximum 16 articles published in 2014 (Vol. 34). And 2000, 2001 and 2003 not any article published in these years.

Table 1 Year wise distribution of Articles

Year	Vol	Total Articles Published	Total Articles Pub. on Bibliometric Research
1998	18	23	1
1999	19	20	1
2000	20	14	0
2001	21	9	0
2002	22	15	1
2003	23	19	0
2004	24	14	1
2005	25	14	2
2006	26	18	2
2007	27	34	2
2008	28	49	2
2009	29	50	3
2010	30	47	4
2011	31	54	10
2012	32	65	4
2013	33	62	11
2014	34	60	16
2015	35	53	10
2016	36	49	2
2017	37	58	7
2018	38	53	7
Total Articles		**780**	**86**

b. Top Five Authors

Table 2 revealed that top five authors contributed in the bibliometric research in the DJLIT. B. M. Gupta is first ranked (14 articles) and B. S. Kademani (10articles) on second position. Total 204 authors found in this study.

Table 2 Top Five Authors

Name Author	Position							Total Articles
	Fifth	First	Second	Third	Fourth	Fifth	Sixth	
B. M. Gupta		8	4	1	1			14
B. S. Kademani		2	4	2	2			10
Anil Sagar	1	3	1	2		1		7
Ritu Gupta		2	2	2				6
Vijai Kumar	1		1	2		1	1	5
Ganesh Surwase		2	1		1		1	5

c. Designation Wise

Table 3 displayed the designation wise authors in the DJLIT. Maximum 78 authors are Scientific Officer designated, 28 Librarian are on second position and 23 authors are not mentioned their designation.

Table 3 Designation Wise

Name of Designation	Total Authors
Scientific Officer	78
Librarian	28
Not Mentioned	23
Professor	17
Assistant Librarian	15
Research Scholar	9
Head	9
Deputy Librarian	7
Director	6
Associate Professor	3
Professional Assistant	3
Assistant Professor	3
Information Scientist	1
School Librarian	1
Chief Structural Engineer	1
Total Authors	**204**

d. Total Contribution

In the Table 4 shows that authors contributions in bibliometric research. 95 authors wrote a one article, and maximum 14 articles written by one author. Total 127 unique authors are found in this study. Total 204 authors contributed 86 articles. 2.37 authors per article and 0.42 articles per author found in this study.

Table 4 Total Contribution

No. of Articles	Total Unique Authors Count	Total Authors Count
1	95	95
2	20	40
3	2	6
4	4	16
5	2	10
6	1	6
7	1	7
10	1	10
14	1	14
Total	**127**	204

e. Authorship Pattern

Table 5 explained the authorship pattern found in this study. 23 articles are Single authored, maximum 28 articles are two authored and 2 articles written by six authors. It means multi-authored articles dominated on single authored.
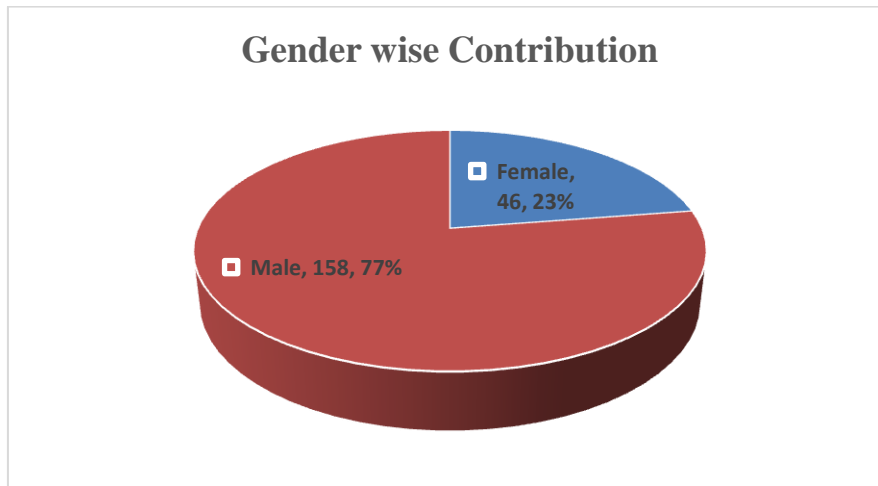
Table 5 Authorship Pattern

Authorship	No. of Articles
Single	23
Two	28
Three	22
Four	8
Five	3
six	2
Total	**86**

f. Gender wise Contribution

Figure 1 shows that gender wise authors contributors found in this study. Maximum 158(77%) Male authors and only 46(23%) female authors contributed.

Figure 1 Gender wise Contribution

g. Degree of Collaboration

The degree of collaboration (Subramanyam, 1983) in a discipline was defined as the ratio of the number of collaborative research papers to the total number of research papers published in the discipline during a certain period of time. The degree of collaboration in respect of a discipline or an organization is the ratio of multi-authored papers published during a year and the total number of papers published during the year.

$$C = \frac{Nm}{Ns + Nm}$$

Where, N (m) is the number of multi-authored papers and N (s) is the number of single-authored papers. This index or degree is time dependent. In other words, Collaboration coefficient is the ratio of the number of collaborative papers to the total number of papers published during a fixed period of time. (Kalyane & Sen, 2003). (Kulkarni, 2011)

Table 6 described the degree of collaboration of DJLIT during 1998 to 2018 study period. Degree of collaboration or collaboration coefficient of authorship of all set of data under this study given in the Table 6 Maximum collaboration or coefficient found was 0.73.

Table 6 Degree of Collaboration

Authorship Pattern	Articles
Single Authored Papers (Ns)	23
Multi-Authored Papers (Nm)	63
Nm+Ns	86
Degree of Collaboration (DC) $$DC = \frac{Nm}{Ns + Nm}$$	0.73

h. Top Five Institutions

Table 7 shows that top five contributors' institutions. As per the analyzed data Bhabha Atomic Research Centre, Mumbai is on top ranked. 41 authors from BARC, followed by National Institute of Science, Technology & Development Studies, CSIR, New Delhi 26 authors.

Table 7 Top Five Institutions

Rank	Name of Institute	No. of Authors
1	BARC, Mumbai	41
2	National Institute of Science, Technology & Development Studies, CSIR, New Delhi	26
3	DRDO, New Delhi	7
4	Government Medical College and Hospital, Chandigarh	6
4	Indian Institute of Technology Delhi	6
5	Indian Institute of Management Ahmedabad	5
5	Karnataka University, Dharwad	5

i. Citation Count

Table 8 described the references appended at the end of articles. Maximum 45 citations from two articles and only two articles were not found ant citations in this study. Total 1420 citations are found in this study; 16.51 average citations are counted in this study.
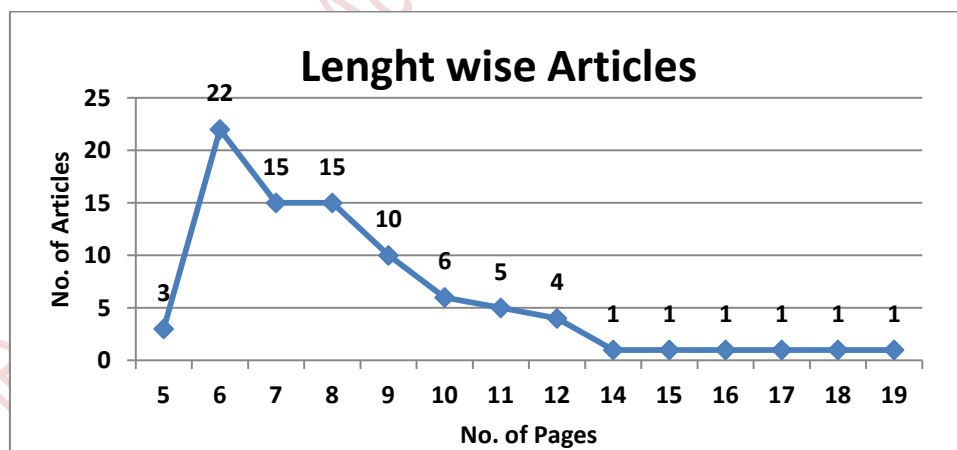
Table 8 Citation Count

No. of Citations	No. of Articles	Total Citations
0	2	0
2	1	2
3	1	3
5	1	5
6	2	12
7	3	21
8	6	48
9	5	45
10	2	20
11	3	33
12	8	96
13	4	52
14	2	28
15	7	105
16	2	32
17	5	85
18	4	72

19	1	19
20	6	120
21	2	42
22	2	44
23	2	46
24	1	24
27	2	54
28	1	28
29	2	58
30	1	30
31	1	31
32	1	32
34	1	34
36	2	72
37	1	37
45	2	90
Total	**86**	1420

j. Length wise articles

Figure 1 shows that length wise articles in the DJLIT. Minimum 3 articles were 3 pages and maximum 1 article were 19 pages. Maximum 22 articles were 6 pages.

Figure 2 Length wise articles

k. Geographical distribution of authors

Table 9 displayed the geographical distribution of Indian authors. Total 195 authors from India. Only 20 state's authors were contributed in the bibliometric research in DJLIT. Maximum 59 authors from Delhi, followed by Maharashtra State (50 Authors), Tamil Nadu (15 Authors) on Third place.
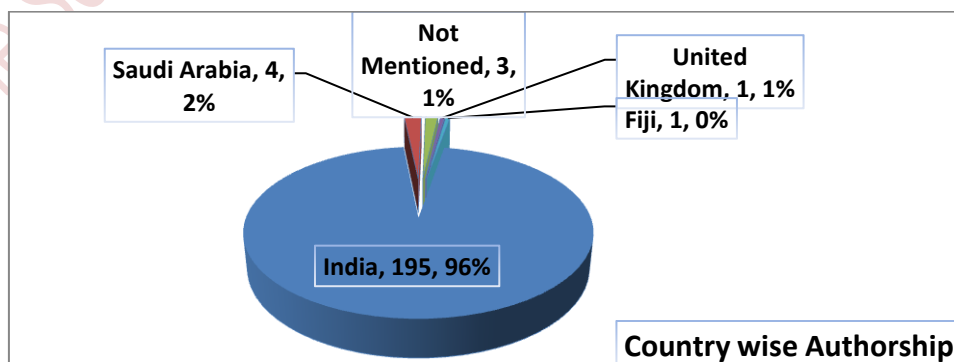
Table 9 Geographical distribution of authors

Name of State	No. of Authors
Delhi	59
Maharashtra	50
Karnataka	15
Tamil Nadu	10
Chandigarh	9
West Bengal	7
Uttar Pradesh	7
Haryana	6
Telangana	5
Gujrat	5
Kerala	5
Himachal Pradesh	3
Andhra Pradesh	3
Madhya Pradesh	3
Punjab	2
Rajasthan	2
Jharkhand	1
Uttarakhand	1
Oddisha	1
Jammu & Kashmir	1
Total	**195**

l.   Country Wise Authors

Figure 2 shows that country wise distribution of authors. Maximum 195 authors from India, 2 authors from Saudi Arabia, one each author from United Kingdom and Fiji and 3 authors not mentioned country.

Figure 3 Country Wise Authors

7. Conclusion:

The present research paper analyzed the literature published on bibliometric research in DESIDOC Journal of Library and Information Technology during 1998-2018. Total 86 articles found on bibliometric research during the period. Researcher selected the literature survey and bibliometric research methodology for this study. Major findings of the study are as follows: Only 86 (11%) articles from bibliometric research out of 780 articles. Maximum 63 articles are written by multi-authored and only 23 articles written by single author. It is good signal for collaborative research. Degree of collaboration is 0.73. Only three foreign countries author contributed. Foreign contribution should be increase. Gender wise 77% male authors and 23% female authors contributed. Female author's contribution should be increase.

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