

A SCIENTOMETRIC PROFILE OF COLLABORATIVE LIBRARIANSHIP ON DOAJ

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Abstract

The study presents a Scientometric Analysis of 215 articles published in “Journal of Collaborative Librarianship” during the year 2009-2014. Six volumes of the journal are taken up to observe the distribution of contribution, authorship pattern & author productivity, institution-wise distribution, geographical distribution of contribution, document type-wise distribution, average length of paper, mail domain wise distribution and number of references in each year. Out of 215 contributions, single authored and rest by multi authored with degree of collaboration 0.33 and week collaboration among the authors. Results indicate that highest number of papers have been written by One author. The

contributions received in this journal are more from United States than from the other countries.

Keywords: *Open Access, E-journals, DOAJ, Collaborative Librarianship, Librarian, Directory, USA, Library and Information Science.*

Introduction

The term scientometrics was adopted to cover the techniques applied to the quantification and analysis of scientific activities including the publication and organizing of books and journals (Brookes 1987). It is the study related to the measurement of science (Joshi 1988) that helps in identifying the progress of a particular science subject (Kaliyaperumal & Natarajan 2009). Scientometric tools can be used to measure and compare the scientific activities at various levels of aggregation including institutions, sectors, provinces and countries. They can also be used to measure research collaborations, to map scientific networks and to monitor the evolution of scientific fields. Scientometric indicators give policy-makers objective, reproducible and therefore verifiable information that goes beyond the anecdotal (http://www.sciencemetrics.com/eng/methods-scientometrics_t.htm). They forecast productivity of scientists so that dynamics of scientific research and technological development can be understood (Nattar 2009).

Scientometrics is a branch of the science ‘Science of Science’. Haitun treats ‘Scientometrics’, as scientific disciplines, which performs reproducible measurements of scientific activity¹. Now a day’s scientometrics is one of the truly interdisciplinary research fields extended to almost all scientific fields. Scientometrics applications are used to measure scientific activities, mainly by producing statistics on scientific publications indexed in databases. Scientometrics is the branch of science that describes the output traits in terms of organizational research structure, resource inputs and outputs, develops benchmarks to evaluate the quality of information output. Scientometric studies characterize the disciplines using the growth pattern and other attributes. These applications are extremely valuable methods for evaluating research output, to know about the author productivity and citation analysis in science and technology. Scientometric tools can be used to measure and describe countries, universities, research institutes, journals, specific research topics and specific disciplines. This paper focuses on quantitative study of “*Directory of Open Access Journals*” by applying simple Scientometric techniques (Jayendra Kumar Singh (2014), *Research Journal of Library Sciences* Vol. 2(1), 7-12.)

Directory of Open Access Journal (DOAJ)

Directory of Open Access Journals (DOAJ) is a service that provides access to quality controlled Open Access Journals. Lars Bjornshauge was Director of Libraries at Lund University from 2001 to 2011 and founded the DOAJ in 2003. He became Managing Editor

of DOAJ in January 2013. Directory of Open Access Journals is hosted, maintained and partly funded by Lund University Libraries Head Office, Sweden. The Directory aims to be comprehensive and cover all open access scientific and scholarly journals that use an appropriate quality control system, and it will not be limited to particular languages or subject areas. (McCabe, 2006).

Electronic journals

Electronic journals also known as e-journals, and electronic serials, are scholarly journals or intellectual magazines that can be accessed via electronic transmission. In practice, this means that they are usually published on the Web.

They are a specialized form of [electronic document](#): they have the purpose of providing material for academic [research](#) and study, and they are formatted approximately like journal articles in traditional printed journals. (http://en.wikipedia.org/wiki/Electronic_journal)

Review of Literature

Ambhore and Khaparde (2014) They studied “Open Access Online Journal on Genetics: A study in DOAJ” contains 57 journals analyzed based on country wise, Languages, subject Headings. It is observed that U.S. was in 1st rank in publishing 15 e-journals followed by U.K. English is the most common communication language for scientific community which is used by online journal. Four e-journals on Generics also

published simultaneously in English, French, Germany and Turkish languages. DOAJ is comprehensive and covers open access scientific and scholarly journals that use an appropriate quality control system, and it will not be limited to particular languages or subject areas. DOAJ is to increase the visibility and ease of use of open access scientific and scholarly journals there by promoter their increased usage and impact. Research scholars, scientists, Professionals should browse the DOAJ site and access the free online journals on their subject areas It is also suggested that 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 and citation index.

Singh, Jayendra Kumar (2014) “A Scientometric analysis of “Indian Journal of Pure and Applied Physics” (2006-2010): A study based on Web of Science”, The present study deals a scientometric analysis of 657 papers published in the journal “Indian Journal of Pure and Applied Physics” during the period 2006 to 2010. Data is collected using the Web of Science and analyzed using Microsoft Excel. The study focuses on various aspect of the journal such as document types, growth of papers (year wise), authorship pattern, institutions involved, citation analysis, most prolific authors of the journal, mean page length and number of references. The study shows that most of the papers (93.46%) were contributed jointly where as 6.54% papers were contributed by single authors. CSIR topped in the institution list. Overall average citation per paper was 1.87 where as overall mean page length of all the paper was 5.37. All the studies will be helpful for its further development.

Rattan, G. K. and Gupta, K. (2012) studied the journal “Malaysian Journal of Library and Information Science: 2007- 2011” bibliometrically. In their study, they showed that out of 100 articles, single authors contributed 27 (27%) articles while the rest 73 (73%) articles are contributed by joint authors. They also showed that about 62.54% of citations were from periodicals⁷.

Davarpanah, M. R. and Aslekia, S. (2007) “A scientometric analysis of international LIS journals: Productivity and characteristics” This paper presents a quantitative study of productivity, characteristics and various aspects of global publication in the field of library and information science (LIS). A total of 894 contributions published in 56 LIS journals indexed in SSCI during the years of 2000–2004 were analyzed. A total of 1361 authors had contributed publications during the five years. The overwhelming majority (89.93%) of them wrote one paper. The average number of authors per paper is 1.52. All the studied papers were published in English. The sum of research output of the authors from USA and UK reaches 70% of the total productivity. Most papers received few citations. Each article received on an average 1.6 citations and the LIS researchers cite mostly latest articles.

Dr. Rajendran, P.; Dr. Jeyshankar, R. and Elango, B. (2011) “Scientometric Analysis of Contributions to Journal of Scientific and Industrial Research” Scientometric analysis of 633 research articles published in Journal of Scientific and Industrial Research has been carried out. Five Volumes of the journal containing 60 issues from 2005 – 2009 have been

taken into consideration for the present study. The number of contributions, authorship pattern & author productivity, average citations, average length of articles, average keywords and collaborative papers has been analyzed. Out of 633 contributions, only 51 are single authored and rest by multi authored with degree of collaboration 0.92 and week collaboration among the authors. Pattern of Co-Authorship revealed that the improving trend of co-authored papers.

Objective of the Study

The main objective of the study is to present the growth of literature, and make quantitative and qualitative assessment of the research by analyzing the research outputs towards identifying the following facts:

1. Year-wise Distribution of Contribution.
2. Year-wise Authorship pattern of Contribution.
3. Year- wise Degree of collaboration.
4. Geographical distributions of Contribution.
5. To find out the most productive Author.
6. Institution- wise Distribution of contributions.
7. To find out the document types of contributions
8. To study the mail domain and Domain-name.
9. To find out the length of paper.
- 10.To find out number of references.

Scope and Limitation

The data presented in this paper have been accessed from Directory of Open Access Journal (DOAJ). The data for the study comprises the contributions in 23 issues of six volumes of ‘*Collaborative Librarianship* (2009–2014) has been collected in the month of January 2015. The data pertaining to each of the 215 articles in volumes 1–6 in terms of authorship, number of pages, references cited in each issue and volume were noted. The data was then subjected to analysis as per the objectives of the study. All the analyzed data is arranged and tabulated systematically for making observations. At the end data accessed has analyzed by helping of SPSS software and analyzed data has represented in the form of tables and graphs.

Methodology

The present study adopts a quantitative and descriptive research method approach by means of Scientometric analysis, because of its nature as an exploratory investigation to describe the quantity, characteristics, and productivity of publication in collaborative Librarianship. Research Methodology is a systematically way for solving any research problem. It is a science of study how research is done scientifically. Research Methodology done scientifically. Research methodology has many dimensions & the Research methods are integral part of it.

Data Analysis

Analysis of information or data is one of the important part of any study Data analysis is done for the purpose of huge volume of data is reduced into meaning full case report. Analysis of total 215 Articles of 6 volumes and 23 issues during 2009 to 2014 was done. Analysis was done using various parameters laid down in objectives of the study. The data analysis was done by using SPSS package analyzed data has been represented in the form of tables and graphs.

Table No. 1: Year-wise distribution of contribution

Year	Volume No.	No. of Issue	No. of Contribution	Percentage
2009	1	4	33	15.35%
2010	2	4	43	20.00%
2011	3	4	41	19.07%
2012	4	4	31	14.42%
2013	5	4	40	18.60%
2014	6	3	27	12.56%
Total		23	215	100 %

Figure No.1: shows the Year-wise distribution of contribution

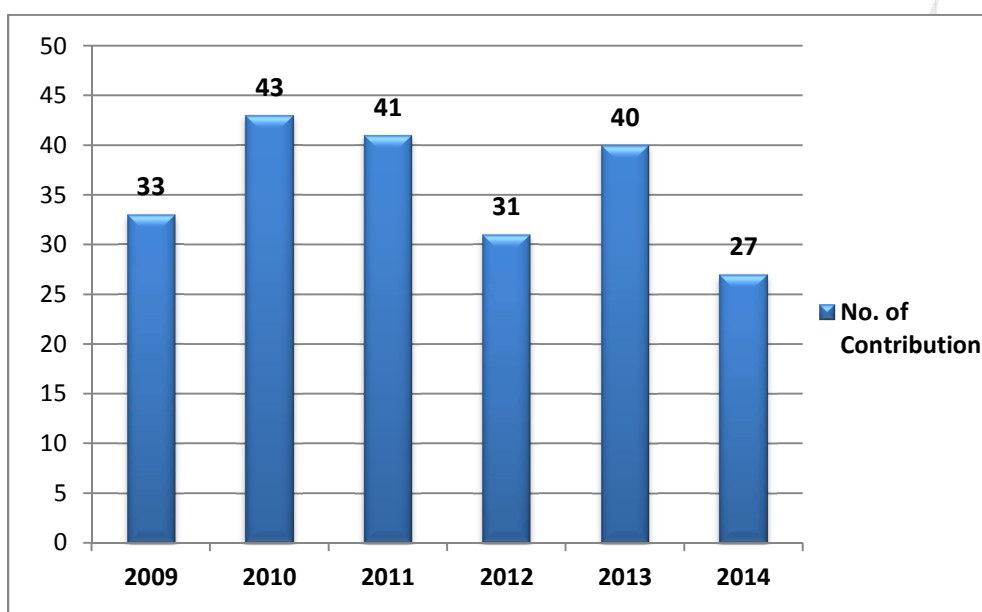


Table No.1 and Figure No.1 shows the distribution of papers in “Collaborative Librarianship” on DOAJ by the year 2009-2014. The journal published 215 papers during the period 2009-2014. The highest number of papers were published in the year 2010 contributing 43 papers (20.00%) followed by 41 papers (19.07%) in the year 2011, 40 papers (18.60%) in the year 2013, 33 papers (15.35%) in the year 2009, and 31 papers (14.42%) in the year 2012. The minimum 27 numbers of papers (12.56%) were published in the year 2014. It is shown in the Figure.

Table No.2: Year-wise Authorship pattern of contribution

Authorship pattern	Year						No. of Papers	%
	2009	2010	2011	2012	2013	2014		
Single	26	25	27	22	26	17	143	66.51
Corporate	5	10	8	4	9	9	45	20.93
Three	2	6	5	2	5	1	21	9.77
Four	0	1	1	1	0	0	3	1.40
Five	0	1	0	1	0	0	2	0.93
More than Five	0	0	0	1	0	0	1	0.47
Total	33	43	41	31	40	27	215	100

Figure No.2: shows the Year-wise Authorship pattern of contribution

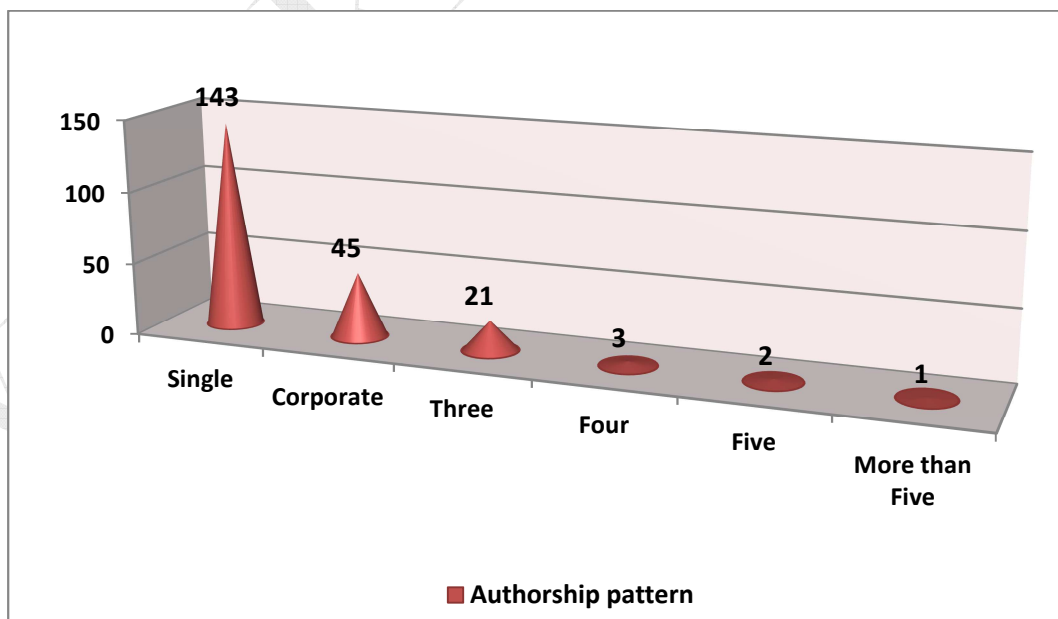
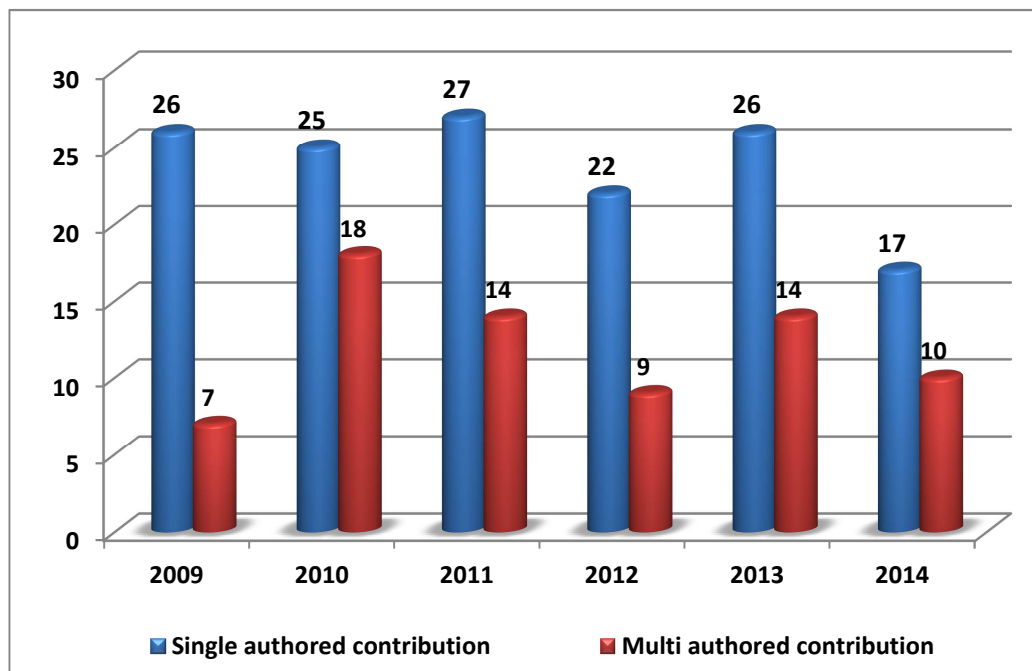


Table No.2 and Figure No.2 shows the authorship pattern of the papers published during the period of study. Out of 215 papers the maximum number of papers 143 (66.51%) had been contributed by single authors. This is followed by corporate authors with 45 papers (20.93%), three authors with 21 papers (9.77%), four authors with 3 papers (1.40%), five authors with 2 papers (0.93%), more than five authors with 1 paper (0.43%) during the year 2009-2014.

Table No.3: Year-wise Degree of collaboration

Year	Single authored contribution	Multi authored contribution	Total No. of Contribution	Degree of collaboration
2009	26	7	33	0.21
2010	25	18	43	0.42
2011	27	14	41	0.34
2012	22	9	31	0.29
2013	26	14	40	0.35
2014	17	10	27	0.37
Total	143	72	215	0.33

Figure No.3: shows the Year-wise Degree of collaboration

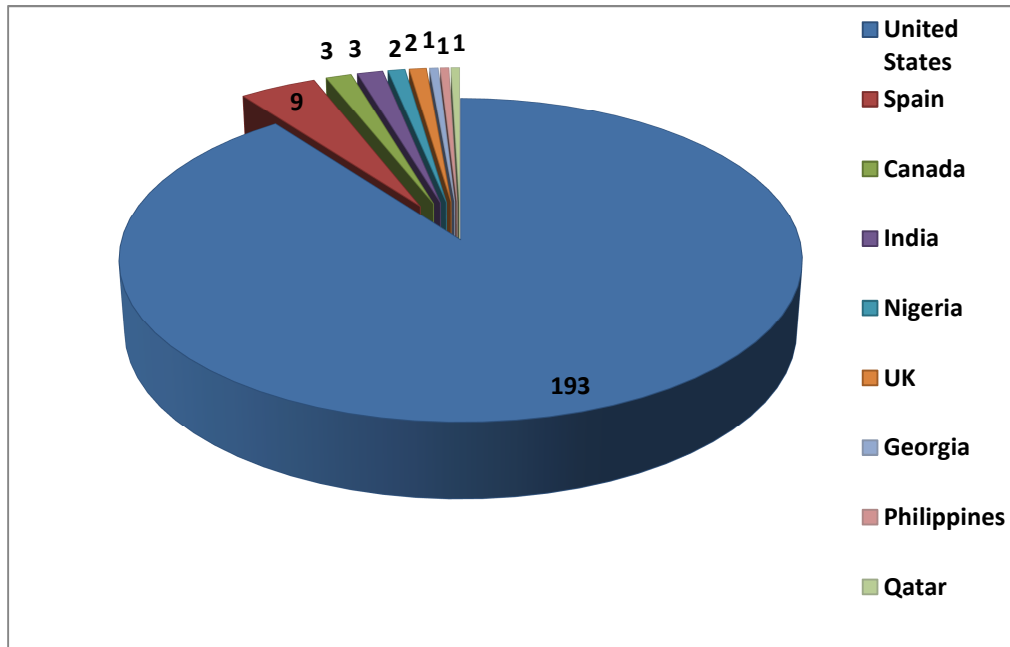


The Degree of Collaboration of authors by year wise is presented in the Table No. 3. and Figure No. 3 The degree of collaboration ranges from 0.21 to 0.37. The average degree of collaboration is 0.33 during the period 2009 – 2014 and it brings out clearly that there exists a higher level in the year 2010 of collaboration range from 0.42.

Table No. 4: Geographical distributions of Contribution

Sr. No.	Country	No. of contribution	Percentage
1	United States	193	89.8
2	Spain	9	4.2
3	Canada	3	1.4
4	India	3	1.4
5	Nigeria	2	0.9
6	UK	2	0.9
7	Georgia	1	0.5
8	Philippines	1	0.5
9	Qatar	1	0.5
Total		215	100

Figure No. 4: shows the Geographical distributions of Contribution



It can be observed from Table No 4 and Figure No. 4 that, there were as many as 9 countries carrying out research and produced 215 articles. Table no.4 provides ranked List of countries contributing to this field, the number of publications of each country and their share in percentages. USA is the top producing country with 193 publications (89.8%) of the total output.

Table No. 5: Most Productive Author

Sr. No.	Name of Authors	Frequency	Percentage
1	Ivan Gaetz	18	8.4
2	Nicole C. Engard	9	4.2
3	Valerie Horton	9	4.2
4	Alison Hicks	6	2.8
5	Lori Bowen Ayre	5	2.3
6	Lori Ayre	4	1.9
7	Christine Baker	3	1.4
8	Mitchell Davis	3	1.4
9	Amalia Beisler	2	0.9
10	Barbara M. Pope	2	0.9
11	Carol Krismann	2	0.9
12	Janet Lee	2	0.9
13	Jeff Bullington	2	0.9
14	Jesus E. Sanabria	2	0.9
15	Mary M. Somerville	2	0.9
16	Michael Perini	2	0.9
17	Ronna C. Nemer	2	0.9
18	Authors publishing single paper (1X140)	140	65.1
Total		215	100%

It can be observed from Table No.5 that, the most productive authors are Ivan Gaetz who had the highest number (18) of the contribution. also Nicole C. Engard and Valerie Horton with (9) contribution, Alison Hicks (6) contribution, Lori Bowen Ayre (5) contribution, Lori Ayre (4) contribution, Christine Baker and Mitchell Davis (3) contribution, each. 9 authors with (2) contribution and 140 authors with (single) contribution.

Table No. 6: Institution- wise Distribution of contributions

Sr. No.	Institution	Frequency	Percentage
1	Regis University	20	9.3
2	University of Colorado	13	6.0
3	The Galecia Group	9	4.2
4	Colorado Library Consortium	7	3.3
5	Director of Open Source Education, By Water Solutions	7	3.3
6	Colorado School of Mines	5	2.3
7	Colorado State University and Saratov State University	5	2.3
8	University of Colorado-Denver	4	1.9
9	University of Denver	4	1.9
10	University of North Carolina Greensboro	4	1.9
11	University of Saskatchewan	4	1.9
12	George Mason University	3	1.4
13	Minitex university of minnesota	3	1.4
14	Oregon State University Libraries	3	1.4
15	University of Minnesota Libraries	3	1.4

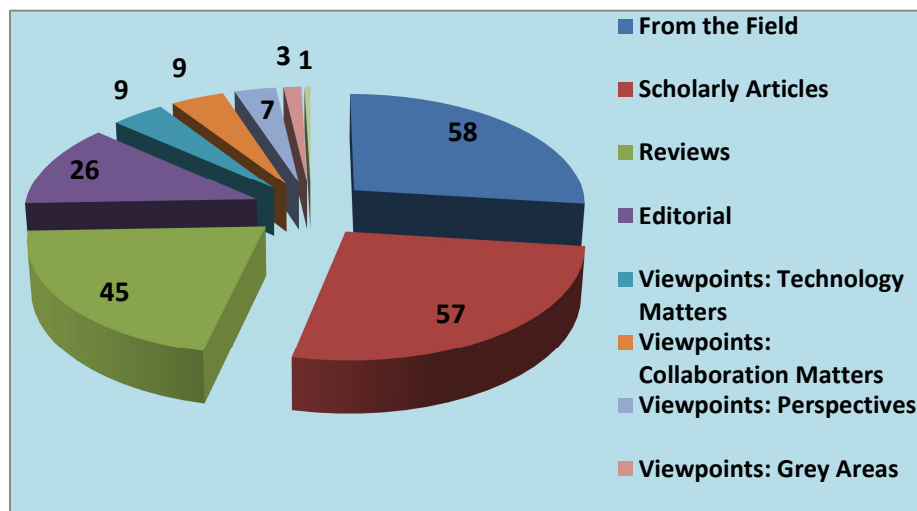
16	University of Nevada, Reno	3	1.4
17	BiblioLife	2	0.9
18	Bronx Community College	2	0.9
19	Fort Lewis College, Durango	2	0.9
20	Not Mention	2	0.9
21	Open Source Evangelist, LibLime	2	0.9
22	Orbis Cascade Alliance	2	0.9
23	Pittsburg State University	2	0.9
24	Portland State University	2	0.9
25	San José Public Library System, San José,	2	0.9
26	University of Massachusetts	2	0.9
27	Institutions publishing 1 publication (1 x 98)	98	45.6
Total		215	100

It can be observed from Table No. 6 that, there were 215 organizations involved in research activity. The organizations that have contributed in the publication during 2009-2014. Regis University, USA 20 contribution followed by one institution, University of Colorado, USA 13 contribution, followed by one institutions. The Galecia Group, Spain 9 contribution followed by one institutions Two institutions with 7 contributions, Two institutions with 5 contributions, Four institutions with 4 contributions, Five institutions with 3 publications contributions, Ten institutions with 2 contributions and 98 institutions with Single contributions.

Table No. 7: Document types of contributions

Sr. No.	Document Type	No. of Contribution	Percentage
1	From the Field	58	27.0
2	Scholarly Articles	57	26.5
3	Reviews	45	20.9
4	Editorial	26	12.1
5	Viewpoints: Technology Matters	9	4.2
6	Viewpoints: Collaboration Matters	9	4.2
7	Viewpoints: Perspectives	7	3.3
8	Viewpoints: Grey Areas	3	1.4
10	Viewpoints: On Consortia	1	0.5
Total		215	100

Figure No. 5: shows the Document types of contributions



It can be observed from table no. 7 and Figure No.5 that, (27.0%) of the Literature was published in From the Field followed by Scholarly Articles (26.5%), Reviews (20.9%), Editorial (12.1%), Viewpoints: Technology Matters and Viewpoints: Collaboration Matters (4.2%) The total content of Collaborative Librarianship that is Viewpoints: Perspectives, Viewpoints: Grey Areas, Viewpoints: On Consortia, etc. is analyzed.

Table No. 8.1: Mail Domain-wise Distribution of the Contribution

Sr. No.	Mail Domain	Frequency	Percentage
1	regis	19	8.8
2	gmail	18	8.4
3	colorado	14	6.5
4	galecia	9	4.2
5	umn	8	3.7
6	clicweb	6	2.8
7	colostate	5	2.3
8	mines	5	2.3
9	ucdenver	5	2.3
10	du	4	1.9
11	uncg	4	1.9
12	usask	4	1.9
13	bibliolife	3	1.4
14	lyrasis	3	1.4
15	orbiscascade	3	1.4
16	unr	3	1.4
17	yahoo	3	1.4
18	bcc	2	0.9
19	fortlewis	2	0.9
20	gmu	2	0.9
21	library	2	0.9
22	Not Mention	2	0.9
23	pdx	2	0.9
24	pittstate	2	0.9
25	uh	2	0.9
26	uoregon	2	0.9
27	Authors Mail Domain (1X81)	81	37.7
Total		215	100

Table No. 8.2: Domain Name wise Distribution of the Article

Sr. No.	Domain Name	Frequency	Percentage
1	edu	134	62.3
2	com	39	18.1
3	org	19	8.8
4	ca	4	1.9
5	cuny.edu	3	1.4
6	umass.edu	3	1.4
7	Not Mention	2	0.9
8	ac.uk	1	0.5
9	ca.gov	1	0.5
10	cic.net	1	0.5
11	edu.au	1	0.5
12	illinois.edu	1	0.5
13	mx	1	0.5
14	na	1	0.5
15	net	1	0.5
16	tamu.edu	1	0.5
17	ucf.edu	1	0.5
18	wsu.edu	1	0.5
Total		215	100

It can be observed from Table No. 8.2 that, the high frequency domain name were edu (134), com (39), org (19), ca (4), cuny.edu and umass.edu (3), not mention (2), and 11 domain name (1) Table gives a list of domain name appeared in the author contribution.

Table No. 9: Average pages (per volume & per contributions)

Volume No.	Total Pages	No. of contribution	Percentage
1	173	33	14.1
2	238	43	19.4
3	230	41	18.7
4	191	31	15.6
5	267	40	21.7
6	129	27	10.5
Total	1228	215	100%

The Table No. 9 shows the average pages (per volume & per contributions). The maximum pages were covered in volume no. 5 (21.7) & minimum pages were covered in volume no. 6 (10.5).

Table No. 10: Average citation per contribution in each volume

Volume No.	No. Of Citation	No. of contribution	Percentage
1	239	33	11.4
2	387	43	18.5
3	321	41	15.3
4	355	31	17.0
5	513	40	24.5
6	277	27	13.2
Total	2092	215	100%

Figure No. 6: shows the Average citation per contribution in each volume

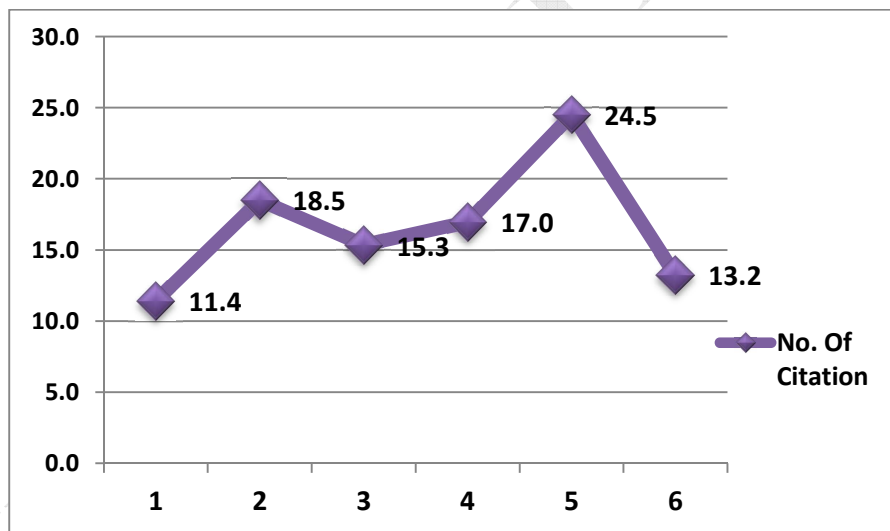


Table No. 10 and figure No. 6 shows the average citation per contribution in each volume, total 215 contributions were contributed. Maximum numbers of citations were contributed by volume no. 5 (24.5%) and the minimum (11.4%) contributions were contributed by volume no. 1.

Findings and Conclusion

1. The highest number of papers were published in the year 2010 contributing 43 papers (20.00%) followed by 41 papers (19.07%) in the year 2011, 40 papers (18.60%) in the year 2013, 33 papers (15.35%) in the year 2009, and 31 papers (14.42%) in the year 2012. The minimum 27 numbers of papers (12.56%) were published in the year 2014. it is shown in the Figure.
2. Out of 215 papers the maximum number of papers 143 (66.51%) had been contributed by single authors. This is followed by corporate authors with 45 papers (20.93%), three authors with 21 papers (9.77%), four authors with 3 papers (1.40%), five authors with 2 papers (0.93%), more than five authors with 1 papers (0.43%) during the year 2009-2014.
3. The degree of collaboration ranges from 0.21 to 0.37. The average degree of collaboration is 0.33 during the period 2009 – 2014 and it brings out clearly that there exists a higher level in the year 2010 of collaboration range from 0.42.
4. List of countries contributing to this field, the number of publications of each country and their share in percentages. USA is the top producing country with 193 publications (89.8%) of the total output.
5. The most productive authors are Ivan Gaetz who had the highest number (18) of the contribution. also Nicole C. Engard and Valerie Horton with (9) contribution, Alison Hicks (6) contribution, Lori Bowen Ayre (5) contribution, Lori Ayre (4) contribution,

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8. the high frequency domain name were edu (134), com (39), org (19), ca (4), cuny.edu and umass.edu (3), not mention (2), and 11 domain name (1) Table gives a list of domain name appeared in the author contribution.
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