Publication Pattern of the Journal "Webology": A Bibliometric Analysis

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Abstract: - *The present bibliometric study has been undertaken to evaluate the pattern of growth of research output published in the 'Webology' journal. The study covers the analysis of authorship pattern, most prolific authors, most prolific institutions and geographical affiliation of the contributors of the articles published in the journal during the period 2004 – 2013. There are 158 articles published in 'Webology' journal in ten selected years. The study result found that the majority of articles 114 (72.15 %) were research article and the highest numbers of articles 106 (67.10%) were single authored publication. Authors from India have contributed the majority of articles 46 (19.33%) followed by UK 36 (15.13%) and Iran 33 (13.87%). Among the total contributors, Hamind R. Jamli has contributed highest number of research articles 12 (3.66%) followed by Yazdan Mansourian 6 (1.83%). The year 2005-2008 has contributed more than half of the total articles 92 (58.23%). Majority of institutions which have contributed to the journal are academic institutions and are mainly belonging to developed countries. Out of 238 institutions, the 'University College, London' (11) leads with first rank followed by 'University of Tasmania, Iran' (7). The highest number of the articles 29 (18.35%) are published on the subject area of 'Web Information Retrieval, Ontology, Metadata and Linked Data'. The majority of the articles' (25.95%) citations range between 10 to 19 per article and the type of majority of citations (43.11%) were journal article.*

Keywords: Bibliometric, Citation analysis, Webology, Quantitative techniques, LIS journals.

Introduction:

Bibliometric study is the application of mathematics and statistical methods to books and other media of communication (Pritchard, 348). The Bibliometric study helps us to develop a scientific acumen towards the potential of research trend in a particular science (Pandita, 493). The present study is primarily undertaken to evaluate research output of a particular subject during the particular period. The aim of study is to analyse the research output of the journal 'Webology' which has been published till 2014 and it is available free on the web. The journal Webology is a well-known international peer-reviewed open access journal devoted to the field of Library and Information Science and World Wide Web. It has been publishing the articles since 2004 and serving as a forum for new research in information dissemination and communication processes in general and in the context of the World Wide Web in particular. The Webology journal is indexed by 24 major databases namely Scopus, Proquest, EBSCO, LISA, LISTA, DOAJ, Open J-Gate, WorldCat, Ulrich's Periodicals Directory and so on. Here in this paper an attempt has been made to study the quantitative nature of the journal in terms of authorship pattern, most prolific author, most prolific institutions, geographical affiliation of contributor, subject area wise and other bibliographic parameters of the articles published in the journal during the period 2004 – 2013.

Literature Review:

There have been many studies conducted for bibliometric analysis of journals to evaluate research output of a particular subject and understand authorship pattern, most prolific authors, productivity of institutions, reference range, and geographical distributions during the particular period. Pandita examined 310 articles published in Annals of Library and Information Studies (ALIS) journal during the period of 2002 to 2012 and identified that 65.81 % articles contributed to the journal during the period were co-authorship pattern. In all, authors from 16 different countries, Indian authors have contributed the majority of paper (87.61 %) to the journal (493). Singh made a study on citation analysis of Collection Building journal and observed that in all 2,388 citations from 179 articles, 85 citations were self-citation and journal article was the highest (42.71 %) cited source of materials. 65.92 % of articles were published by single author and majority of contributors 69.96 % were from US (89). Garg & Anjana have undertaken a bibliometric study on Journal of Intellectual Property Rights and analysed the 605 papers published in the journals, about one-fourth of the papers published in the journal were from abroad and the rest from India, among the performing sectors, academic institutions were the largest contributors to the journal followed by research institutions (66). Hussain, Fathima & Kumar analysed the bibliometric parameters of the 'Electronic Library' journal. The study revealed that the highest number of articles type was research paper (40.83%) followed by 23.01% case study and authors from universities and academic institutions contributed 72.15% papers followed by 13.15% from research institutions (87). A study on bibliometric analysis of output and visibility of science and technology in Singapore during 2000-2009 carried out by Rana who analyzed 83,439 papers that were published in different ISI-listed periodicals during the period. The researcher found the majority of papers (61%) were journal article and 91.9% of papers were multi-authored (20). Bansal evaluated the 391 papers were published in the DESIDOC Journal of Library & Information Technology. The maximum number of contribution

(61.4%) was published by joint collaborations, and most of the contributions 88% were from India (412). Satpathy, Maharana, & Das examined the top ten open access journals of Library & Information Science through bibliometric measures. The study indicates that a good number of papers have been published in these ten open access journals and these papers were mostly contributed by a single author. The degree of collaboration of authors also seems to be encouraging. Most of the contributors belong to the developed countries and the open access journals are yet to be popular in developing and under developed countries (15). Maharana conducted study on research growth and development at Sambalpur University during 2008 – 2012. The researcher identified that The University's publication ranges from 38 to 83 papers with an annual average growth rate percent of 11.29 papers and the maximum number of papers were three authored publications. Swain analyzed 315 scholarly articles published in Interlending & Document Supply for a period of 10 years ranging from 2001 to 2010 and found that the highest numbers of articles are single authored contributions and the authorship productivity pattern partially complies with Lotka's Law. The half life of cited documents is found to be 1 year. Singh evaluated the bibliometric parameters of the articles published in the Chinese Librarianship: an International Electronic Journal between 2009 and 2012. The study identified that Most of the authors belonged to various non-teaching categories. India has contributed more articles than any other countries (16).

Objectives of the Study:

The present study has been carried out with the following objectives.

1. To find out type of the article published in the 'Webology' journal during 2004 - 2013;
2. To analyse the number of contributions and year-wise growth of the articles during the period of study;
3. To find out the authorship pattern of the articles and the top ranking of leading authors;
4. To identify the geographical affiliation of the authors;
5. To find out the contributions of the most prolific institutions;
6. To identify subject-wise distribution of the publications

Methodology:

The data for the study was collected from the journal 'Webology' website. The articles published in the journal during 2004 - 2014 were scanned. There were 158 articles scanned from the 10 volumes of the journal comprising research papers, reviews, editorial papers and short communications. The bibliographic parameters of the articles were analysed to meet objectivities of the study. The Microsoft Excel was employed for analysis, interpretation and tabulation of the recorded data.

Findings and Analysis:

1. Type of the Articles

Table 1: Type of the Articles

S/N	Type of Articles	No. of Articles	Percentage
1	Book Review	23	14.56 (%)
2	Editorials	19	12.03 (%)
3	Letters	2	1.26 (%)
4	Research Articles	114	72.15 (%)
	Total	158	100

The Table 1 reveals the type of articles published in the journal Webology. It may be seen from the Table that the majority of papers are research articles (114, 72.15%). The second highest number of the article is 'Book reviews' which represent 23 (14.56%) followed by 'Editorials' 19 (12.03%) and Letters 2 (2.26%).

2. Year Wise Distribution of Papers

Table 2: Year Wise Distribution of Paper

S/N	Year	Volume	Issues	No. of Articles	Percentage
1	2004	1	2	11	6.96 (%)
2	2005	2	4	18	11.40 (%)
3	2006	3	4	21	13.30 (%)
4	2007	4	4	24	15.18 (%)
5	2008	5	4	29	18.35 (%)
6	2009	6	2	10	6.33 (%)
7	2010	7	2	9	5.70 (%)
8	2011	8	2	11	6.96 (%)
9	2012	9	2	12	7.60 (%)
10	2013	10	2	13	8.22 (%)
	Total		**28**	**158**	**100 (%)**

The Table 2 depicts the year-wise distribution of the papers published in the Webology journal during 2004 to 2013. There were 158 articles published in 28 issues of the 10 volumes during the period. It may be seen from the table that there is almost stagnant in growth of number of the articles published from 2004 to 2013 except the years between 2005 to 2008. The reason for the increase of number of articles during the period 2005 to 2008 is due to change of the periodicity

of journal from half yearly to quarterly. Out of 158 articles, the year 2005-2008 has contributed nearly half of the total articles 92 (58.23%). The year 2010 and 2009 published lowest number of articles which represent   9 (5.70%) and 10(6.33%) respectively.

3.   Authorship Pattern of Articles

Table 3: Authorship Pattern of Articles

S/N	Authorship	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	No. of Articles	Percentage
1	Single	9	11	16	22	22	7	3	5	6	5	106	67.10(%)
2	Two	2	1	2	1	1	3	1	2	2	5	20	12.66 (%)
3	Three	0	6	3	1	6	0	5	3	4	2	30	18.98 (%)
4	More than three	0	0	0	0	0	0	0	1	0	1	2	1.26 (%)
	Total	11	18	21	24	29	10	9	11	12	13	158	100 (%)

The Table 3 depicts the authorship pattern of articles published in the journal. It may seen from the table that the majority of articles 106 (67.10%) were single authored publications. Among 106 articles 19 papers were editorial materials. The second majority of the paper 30 (18.98%) were three-authored publications followed by 20 (12.6%) articles were joint author publication and only 2 (1.26%) articles were published by more than three author. It may be clearly seen from the above table that the growth trend of the single authored papers has been decreasing vis-a-vis the growth trend of joint authored is almost stagnant and the three authored paper is not constant during the period.

4. Degree of Author's Collaboration

Table 4: Degree of Author's Collaboration

S/N	Year	Single author	Multiple author	Degree collaboration
1	2004	9	2	0.18
2	2005	11	7	0.39
3	2006	16	5	0.24
4	2007	22	2	0.09
5	2008	22	7	0.24
6	2009	5	5	0.50
7	2010	3	6	0.67
8	2011	5	6	0.55
9	2012	6	6	0.50
10	2013	5	8	0.62
Total		104 (65.82%)	54 (34.17%)	

The Table 4 shows that the degree of author's collaborations in the journal. It was calculated by using the Subramanyam's mathematical formula. The degree of collaboration among authors is the ratio of the number of multi-authored papers published to the total number of papers published in a discipline during definite period. The degree of author's collaboration was increased from 0.09 to 0.67 during 2004-2013.

5. Top Ranking of Author

Table 5: Top Ranking of Author

Sl. No.	Rank	Author Name	No of articles contributed	Percentage
1	1	Alireza Noruzi	19	5.79 (%)
2	2	Hamid R. Jamali	12	3.66 (%)
3	3	Yazdan Mansourian	6	1.83 (%)
4	4	Dariush Alimohammadi	3	0.91 (%)
5	5	A. Neelameghan	3	0.91 (%)
6	6	Isabel Galina	3	0.91 (%)
7	7	Ina Fourie	3	0.91 (%)
8	8	Saeid Asadi	2	0.61 (%)
9	9	S. M. Shafi	2	0.61 (%)
10	10	Mehdi Safari	2	0.61 (%)
11	11	Haidar Moukdad	2	0.61 (%)
12	12	Xingan Li	2	0.61 (%)
13	13	Greg Chester	2	0.61 (%)
14	14	Mansoor Al-A'ali	2	0.61 (%)
15	15	Paul L. Hover	2	0.61 (%)
16	16	Louise F. Spiteri	2	0.61 (%)
17	17	Veronica F. McGowan	2	0.61 (%)
18	18	Mahmood Khosrowjerdi	2	0.61 (%)
19	19	Helen Nneka Eke	2	0.61 (%)
20	20	Elaheh Hossseini	2	0.61 (%)
21	21	Kirsty Young	2	0.61 (%)
22	22	Veronica F. McGowan	2	0.61 (%)
23	23	Amanda Spink	2	0.61 (%)
24	24	V. Vishwa Mohan	2	0.61 (%)
25	25	Mohammadamin Erfanmanesh	2	0.61 (%)
26	26	David Nicholas	2	0.61 (%)
27		Others	151	46.04 (%)
Total			**238**	**100.00 (%)**

The Table 5 indicates the top ranking of authors who have contributed to the Webology journal extensively. It may be seen from the table that the total 238 authors have contributed the 158 articles. Among 158 papers, 19 papers are editorial material. The Hamind R. Jamli has contributed highest number of research article 12 (3.66%) followed by Yazdan Mansourian 6 (1.83%). In remaining 220 articles, four authors have contributed 3 articles each, nineteen authors have contributed 2 articles each and remaining 197 authors have contributed only one article each. As shown in the table that Alireza Noruzi has contributed highest number of articles 19 (5.79%) whereas his major contributions 14 (4.26%) is editorial material and remaining 5 papers are research article.

6. Geographical Affiliation of Authors

Table 6: Geographical Affiliation of Authors

Sl. No.	Country	No of contribution	Percentage
1	India	46	19.33 (%)
2	UK	36	15.13 (%)
3	Iran	33	13.87 (%)
4	France	19	7.98 (%)
5	Australia	18	7.56 (%)
6	USA	18	7.56 (%)
7	Canada	9	3.78 (%)
8	Germany	8	3.36 (%)
9	Malaysia	5	2.10 (%)
10	Nigeria	5	2.10 (%)
11	Pakistan	5	2.10 (%)
12	Russia	5	2.10 (%)
13	Oman	3	1.26 (%)
14	South Africa	3	1.26 (%)
15	Netherlands	2	0.84 (%)
16	Bahrain	2	0.84 (%)
17	Bangladesh	2	0.84 (%)
18	Finland	2	0.84 (%)
19	Serbia	2	0.84 (%)
20	Singapore	2	0.84 (%)
21	Syria	2	0.84 (%)
22	Other	11	4.62 (%)
	Total	**238**	**100.00 (%)**

The Table 6 shows the geographical affiliation of authors who contributed the articles in the Webology. It may be seen from the table that out of 238 contributors, the highest number of the

contributors 46 (19.33%) were from India followed by UK 36 (15.13%) and Iran 33 (13.87%). France has contributed 19 (7.98%) articles whereas among 19 articles, 14 articles are editorial form of material. Contributor from Austria and USA with 18 (7.56%) each country followed by Canada 9 (3.78) and Germany 8 (3.36%), contributor from Malaysia, Nigeria, Pakistan and Russia with 5 (2.10%) each country. Oman and South Africa contributed 3 (1.26%) each, contributor from Netherlands, Bahrain, Bangladesh, Finland, Serbia, Singapore and Syria with 2 (0.84%) each country. The remaining 11 contributor from other countries have contributed 1 (0.42%) each country.

7. Most Prolific Institutions

The Table 7 depicts that the institutions wise distribution of contributions in the Journal. It may be seen from the table that the 238 institutions from various countries have contributed 158 papers to the journal. The majority of institutions are academic institutions. The institutions who contributed the highest numbers of papers mainly belong to the developed countries. Out of 238 institutions, the 'University College,' leads with first rank by contributing 11 research articles, followed by 'University of Tasmania' (7). 'Damascus University' and 'Tarbiat Moallem University' have contributed 6 papers each, followed by 'University of Delhi' (5). Four institutions contributed 4 papers each, followed by eight institutions contributed 3 papers each, thirty four institutions contributed 2 paper each and the remaining 77 institutions contributed 1 paper each. As shown in the above table that the 'University of Paul Cezanne' has contributed highest number of articles 18 whereas among them majority of article 13 are editorial material and only 5 papers are research article.

Table 7: Most Prolific Institutions

Sl. No.	Rank	Name of the University	No of Contributions
1	1	University of Paul Cezanne	18
2	2	University College London	11
3	3	University of Tasmania	7
4	4	Damascus University	6
5	4	Tarbiat Moallem University	6
6	5	University of Delhi	5
7	6	Heinrich-Heine-University Düsseldorf	4
8	6	The Islamia University of Bahawalpur	4
9	6	The University of Sheffield	4
10	6	University of Kashmir,	4
11	7	Allameh Tabataba'i University	3
12	7	Belgorod State University	3
13	7	CIBER Research Ltd	3
14	7	College of Economics and Political Science Sultan Qaboos University	3
15	7	Sharif University of Technology	3

16	7	University of East London	3
17	7	University of Pretoria	3
18	7	University of Queensland	3
		Total	**93**
	Number of institutions contributing 34 papers each = 2		68
	Number of institutions contributing 77 papers each =1		77
		Total	**145**
		Grand Total	**238**

8. Subject area wise

The Table 8 shows the subject wise analysis of papers published in the Webology journal. It may be seen from the table that the highest number of articles 29 (18.35%) are published on the subject area of 'Web Information Retrieval, Ontology, Metadata and Linked Data' followed by 'Social Networking and Folksonomies'26 (16.46%) and 'Webometrics & Bibliometrics' 23 (14.56%). 'Information Seeking Behaviour & Information Literacy' and Internet Usage', Web-Based Resources & Services' have appeared in 19 (12.03) articles each. Some articles have also focused on the area of 'Scholarly Communication', Intellectual Property Rights', and 'Digital Libraries & Institutional Repositories' which represent 12 (7.59%), 10 (6.33%) and 6 (3.80%) respectively. There are few contributions show in the subject area like Librarianship, Information and Communication Technology, Library Collection Management, Library Services and Web Design.

Table 8: Subject area wise

Sl. No.	Subject Area	Frequency	Percentage
1	Web Information Retrieval, Ontology, Metadata and Linked data[a]		18.35(%)
2	Social Networking and Folksonomy[b]	26	16.46(%)
3	Webometrics and Bibliometrics[c]	23	14.56(%)
4	Information Seeking Behaviour and Information Literacy[d]	19	12.03(%)
5	Internet Usage, Web Resources and Web-Based Services[e]	19	12.03(%)
6	Scholarly Publications[f]	12	7.59(%)
7	Intellectual Property Rights – IPR and Plagiarism Detection Tool[g]	10	6.33(%)
8	Digital Libraries and Institutional Repositories	6	3.80(%)
9	Librarianship	3	1.90(%)
10	E-governance and e-commerce	2	1.27(%)
11	Library Services/Information services	2	1.27(%)
12	Library Collection Management	2	1.27(%)
13	Web Design	2	1.27(%)
14	Others	3	1.90(%)
	Total	158	**100.00(%)**

a Search engines, Search techniques, Indexing and Semantic Web

b Web 2.0, Library 2.0, Blog, Wiki, Facebook, Social tagging, Personomy, Social classification, Taxonomies, Knowledge organization and Controlled vocabulary

c Citation analysis, Link analysis and Hyperlinks,

d Information needs, information inequalities, information use, digital literacy

e Email, Cyberspace, Online reading, Website accessibility, E-resources, Open access resources, Web usability, Web portals and Online Thesaurus

f E-resources, E-publishing, Scientific research, Open access journals

g Cyber Law, Cybercrime, Legal system, Legal Issues, Web page publishing policy and rules

9. Range of Citation Per Article

Table 9: Range of Citation per Article

S/N	Citation range	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	No. of Articles	Percentage
1	Nil	0	1	1	8	9	0	0	0	2	1	22	13.92 (%)
2	0 to 9	5	6	7	1	5	3	1	2		1	31	19.62 (%)
3	10 to 19	1	5	5	5	7	2	3	2	4	7	41	25.95 (%)
4	20 to 29	3	4	4	6		4	2	3	4	0	30	18.99 (%)
5	30 to 39	1	2	2	2	5	1	2	1	0	0	16	10.13 (%)
6	40 to 49	1	0	2	2	1	0	1	2	0	2	11	6.96 (%)
7	More than 50	0	0	0	0	2	0	0	1	2	2	7	4.43 (%)
	Total Articles	11	18	21	24	29	10	9	11	12	13	158	100 (%)

The Table 4 presents the range of citations per article. It may be seen from the table that the majority of the articles 41 (25.95%) cited the range between 10 to 19 citations, followed by 31 (19.62%) articles cited between zero – nine citations, 30 (18.99%) articles cited between 20 to 29 citations, 22 (13.92%) articles have no citations, 16 (10.13%) articles cited between 30 to 39 citations, 11 (6.96%) articles cited between 40 to 49 citations and Only 7 (4.43%) articles cited more than 50 citations.

10. Type of Source Materials

Table 10: Type of Source Materials

S/N	Types of source materials	Frequency	Percentage
1	Journal Article	1340	43.11 (%)
2	Web Resources	727	23.39 (%)
3	Book	469	15.09 (%)
4	Conference Proceedings, Seminars and Workshops	380	12.23 (%)
5	Reports	72	2.32 (%)
6	Thesis and Dissertation	31	1.00 (%)
7	Magazine / Newsletters / News Paper	25	0.80 (%)
8	Letters	5	0.16 (%)
9	Patent	2	0.06 (%)
10	Others	36	1.16(%)
	Total	3108	100 (%)

The Table 9 shows the citation based bibliographic form of source materials used by author for their research/study. In all 3108 citations, the majority of citations 1340 (43.11%) were from journal, followed by 727 (23.39%) were web resources; 469 (15.9%) were from books, 380 (12.23%) were from Conference Proceedings/ Seminars/Workshops, 72 (2.32%) were from reports, 31 (1.00%) were from thesis and dissertation, 25 (0.80%) were from magazine / newsletters / news paper, 5 (0.16%) were from letters, 2 (0.06%) were from patent and remaining 36 (1.84) were belongs to other types of source materials.

Conclusion:

The journal 'Webology' has published 158 articles in the field of Library and Information Science and World Wide Web during the period of 2004 – 2013. Presently the journal is half-yearly publication whereas it has published four issues from 2005 to 2008. The study result affirmed that the research article (72.15 %) is major form of articles published in the journal. The majority of articles (67.10%) were single authored publication. Among the contributors from various countries India is the foremost contributor for the journal followed by UK and Iran. The year 2005-2008 has contributed nearly half of the total articles. The year 2005-2008 has contributed more than half of the total articles 92 (58.23%). Majority of institutions which have contributed to the journal are academic institutions and are mainly belonging to developed countries. Out of 238 institutions, the 'University College, London' (11) leads with first rank followed by 'University of Tasmania, Iran' (7). The journal Webology has been published good number of articles on web related studies and mainly publishing articles of Asian countries and Middle East mainly from Iran on web related studies. This has provided a space for other countries to understand the Asian and Iranian (Middle East) perspective on web related research.

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