RESEARCH ARTICLE

Citation Analysis of Indian Journal of Traditional Knowledge: A study of Citation Pattern

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ABSTRACT

A Bibliometric analysis of the Journal "Indian Journal of Traditional Knowledge'' for the period from 2005-2006 has been carried out. The present study demonstrates and elaborates the various aspects such as year-wise distribution of articles, authorship patterns, subject-wise distributions, citation patterns, study of citations etc. of the Journal. The study reveals that authors prefer writing in collaboration. The result analyzed reveals that botany subject ranks first in research followed by agriculture, fisheries. The highest number citations are contributed are in the year 2006. As Botany is the basic subject of Indian culture as all the livelihood starts and ends in botany so it is the highly preferred subject by researchers Articles with 1-9 citation ranks highest. The ranked list of journals reveals that Indian Journal of Econ Tax Bot ranks first in the list .Hence it is observed that authors prefer Indian literature. Geographical distribution reveals that India is highly preferred by the authors.

Keywords: Bibliometrics, citation, Traditional knowledge, library,

INTRODUCTION

Initially, bibliometric study was a simple statistical method of counting to evaluate and quantify the growth of a subject. Bibliometrics techniques are now being used for a variety of purposes like determination of various scientific indicators, evaluation of scientific output, selection of journals for the libraries, forecasting the research potential of a particular field and so on.

Bibliometrics studies can be applied to any discipline to find out trends and growth of the literature. The selection of source for collection of the data is very important in such studies. Since journal articles include current research, usually journals are considered as a source for testing. Bibliometrics studies of many journals have been carried out in the past.

In order to provide need-based information services to their reader/users the librarians are adopting the mathematical and statistical applications to the literature. Such an application is called as 'Bibliometric'. The basic aim of a bibliometric study is to assist the users in locating the existing information or identifying a book or any other materials, which may be of interest to him. This study has been conducted in some other disciplines.

Literature is the body of thought expressed in published writing. The primary role of literature is to record and transmit ideas or discoveries that bring in advancement of knowledge. In the field of science and technology, growth of literature is in an exponential manner. Therefore, the process of selecting the appropriate and relevant literature becomes critical and difficult.

Bibliometric analysis is the quantitative description of literature and helps in the measurement of the patterns of all forms of recorded information and their producers. It has extensive applications in the field of Library and information science particularly with regard to studying the trends in the subject. It helps in formulating need based development policy and provides objective data to inform managers to take timely decision.

Presently bibliometrics have gained valuable place and used to deal with quantification of written communication like book and other media. Using this technique subject scatter, authorship pattern, citation trends and distribution pattern of information have been analysed using bibliometric laws for developing policy management in libraries (e.g. collection development policies, weeding and deselection policies, book selection policy, library collection organization, resource sharing policies, retro conversion policies, maintenance policy, selection of journals and its subscription, etc.). Thus Bibliometric study is very beneficial not only for researchers but also for analysis of collection. Similarly this method is also useful in assessing the research output in a particular area.

Bibliometric analysis provides information on the use of references or literature in Journals, thesis and other materials. In analysing the citations, the frequency of the Journal title, type and age of the resources used, place of publication, language and frequency of the author is analysed to study use trends, which suggests means to enhance the library collection. It helps to point out the way to revise the collection and the services to allow the

librarians to better serve the needs of the library users from the present to the future.

Ever increasing subscription cost of learned journal, decreasing value of Indian Rupee and the stagnant library budgets are some of the major factors that have compelled our libraries to reduce their collection of journals to very minimum level. This has directly been affecting the academic and research work in our country.

In such a situation, certain challenges have arisen before the library management to overcome the fund crunch without compromising the quality and quantity of reading materials to the users and to provide relevant information to researcher.

In order to overcome the above problems library has to build a good collection of periodicals relevant to user needs. For the purpose of collection building in context of periodicals a 'Bibliometric study' is a very useful tool. Hence the present bibliometric study is necessitated to identify important publication particularly in the field of Traditional knowledge to help a librarian in decision making in building a collection related to Traditional knowledge. The present study is undertaken to study the citation pattern of the Indian Journal of Traditional Knowledge (IJTK).

OBJECTIVES OF THE STUDY

1. To study the research publication growth in IJTK.
2. To study the of authorship pattern in IJTK.
3. To study the collaborative research network in IJTK.
4. To identify the core journals in IJTK.
5. To study the subject wise distribution of citation in IJTK.
6. To study the geographical distribution of citation.
7. To prepare ranked list of Journal citations of IJTK.

SCOPE OF STUDY

This investigation undertakes citation analysis of the article and the citations collected from the 'Journal of Traditional Knowledge' published during 2005 & 2006 only two years. Total numbers of articles published during 2005-2006 are 173. The citations collected from 173 articles are 2461. Many volumes published in the journal of Traditional knowledge, only 2 recent volumes

i.e. volume numbers 4 to 5 (2005-2006) were taken as sample for the study. The study is confined to only journal citations.

SOURCE OF PERIODICAL

If we look around in our surroundings, we will find out numerous sources of TK hidden in our villages, countryside, community etc. The main sources could are: farmers, community leaders, elder person's folklore, song and poetry, ancient records, NGOs, published materials of different languages. It is also pertinent to note that TK is locally appropriate and specifically adapted as per the requirement of local conditions, it provides a restraint in resources exploitation needed for immediate survival, and it helps in having diversified production system without overexploitation of a single resource. Also, TK is flexible for new interventions and integration of green technological advances and thus, inspires the social responsibilities.

METHOD OF DATA COLLECTION

In the study, each individual article was scanned, checked, examined and tabulated for necessary data into separate sheets. At the same time, the references appended by the respective authors at the end of each article were also scanned, counted and the tabulated with the help of computer, where excel sheet is use to enter different elements like volume, issue number, author, source document, place, year etc. Finally, all the collected data were recorded, compiled, tabulated and analyzed for making observations. Citation analysis technique was used and statistical software like MS-Excel was used for the purpose of study.

ANALYSIS AND INTERPRETATION

Table 1 shows the volume wise distribution of the source journal i.e. journal of Traditional knowledge. Further it shows that 67 papers are published in volume 4, followed by 106 papers in volume 5 respectively.

Table 2 reveals the authorship pattern of the articles published during the period of study. The largest number of articles had Two authors 58 (33.52%).This is followed by Three authors 47 (27.17%). Four authors 26 (15.03%). One authors 26 (15.03%). And More than four authors with 16 (9.25%) of the total articles.

The details of the subject wise analysis of the articles are shown in the Table 3. The subject 'Botany' constituted the highest number of articles i.e. 25 (14.45%) articles during the period 2005-2006 'Pharmacy' constituted 15 (8.67%) number of articles. Followed by 'Agriculture science' having 15 (8.67%) of articles. The fourth highest articles belonged to the subject 'Fishery' totaling 15 (8.67%) articles. Other headings constituted less than 15 articles.

Table 1: Volume-wise Distribution of Articles

Sr. No.	Year	Vol. No.	No. of Issues	No. of Articles	Percentage
1	2005	4	4	67	38.73
2	2006	5	4	106	61.27
			Total	173	100

Table 2: Authorship Pattern

Sr. No.	No. of Author (s)	Contribution of Years		Total papers	Percentage
		2005	2006		
1	One	12	14	26	15.03
2	Two	25	33	58	33.52
3	Three	18	29	47	27.17
4	Four	6	20	26	15.03
5	More than four	6	10	16	9.25
			Total	173	100

Table 3: Subject wise Distribution of Articles

Sr. No.	Subject	No. of Articles	Percentage
1	Pharmacy	15	8.67
2	Zoology	8	4.62
3	Botany	25	14.45
4	Ethno botany	3	1.73
5	Fishery	15	8.67
6	Medical science	9	5.20
7	Animal science	1	0.57
8	Agriculture science	15	8.67
9	Biology	5	2.89
10	Geography	2	1.15
11	Animal husbandry	1	0.57
12	Ayurveda	7	4.04
13	Environmental science	13	7.51
14	Yoga	3	1.73
15	Food engineering	6	3.47
16	Life science	1	0.57
17	Civil engineering	3	1.73
18	Home science	3	1.73
19	Food science	5	2.89
20	Bio-science	1	0.57
21	Fashion technology	7	4.04
22	Microbiology	2	1.15
23	Food science & Nutrition	3	1.73
24	Health science	4	2.31
25	Economics	1	0.57
26	Cultural science	3	1.73
27	Biochemistry	1	0.57
28	Plant pathology	1	0.57
29	Social science	3	1.73
30	Entomology	2	1.15
31	Chemical biology	2	1.15
32	Physics	2	1.15
33	Architecture	1	0.57
	Total	**173**	**100**

Table 4: Year wise Distribution of Citation

Sr. No.	Year	No. of citations	Cumulative citations	Percentage	Cumulative percentage
1	2005	788	788	32.02	32.02
2	2006	1673	2461	67.98	100
	Total	**2461**	**3249**	**100**	**132.02**

Table 5: Study of Citations

Sr. No.	No. of Citations	Year		No. of Articles	Cumulative Articles	Percentage	Cumulative Percentage
		2005	2006				
1	01-09	39	40	79	79	45.66	45.66
2	10-19	19	38	57	136	32.95	78.61
3	20-29	05	19	24	160	13.87	92.48
4	30-39	04	03	7	167	4.07	96.55
5	40-49	0	01	1	168	0.57	97.12
6	50-59	0	03	3	171	1.74	98.86
7	60-69	0	01	1	172	0.57	99.43
8	70-79	0	0	0	172	0	99.43
9	More	0	01	1	173	0.57	100
10	NIL	0	0	0	173	0	100
	Total	**67**	**106**	**173**	**1571**	**100**	

Table 6: Geographical distribution of citation

Sr.No.	Country	No. of citation	Cum. citations	Percentage	Cum. Percentage
1	India	1518	1518	61.68	61.68
2	UK	301	1819	12.23	73.91
3	USA	300	2119	12.19	86.1
4	Pakistan	68	2187	2.76	88.86
5	Nigeria	32	2219	1.30	90.16
6	Ireland	32	2251	1.30	91.46
7	Canada	28	2279	1.14	92.6
8	Nepal	20	2299	0.81	93.41
9	Switzerland	16	2315	0.65	94.06
10	Zimbabwe	16	2331	0.65	94.71
11	England	13	2344	0.53	95.24
12	Germany	13	2357	0.53	95.77
13	Indonesia	13	2370	0.53	96.3
14	France	12	2382	0.48	96.78
15	Srilanka	12	2394	0.48	97.26
16	Kenya	9	2403	0.37	97.63
17	Argentina	9	2412	0.37	98
18	Denmark	9	2421	0.37	98.37
19	China	8	2429	0.33	98.7
20	Egypt	8	2437	0.33	99.03
21	Singapore	8	2445	0.33	99.36
22	Italy	4	2449	0.16	99.52
23	Japan	4	2453	0.16	99.68
24	Malaysia	4	2457	0.16	99.84
25	Colombia	4	2461	0.16	100
	Total	**2461**		**100**	

Table7: Rank List of Journals

Sr. No.	Rank	Name of the Journal	No.of Citations	Cum. Citations	Percentage	Cum. Percentage
1	1	J Econ Tax Bot	273	273	11.10	11.10
2	2	Indian J Traditional Knowledge	210	483	8.53	19.63
3	3	Environmental	175	658	7.11	26.74
4	3	Ethnobotany	175	833	7.11	33.85
5	4	J Ethnopharmacol	147	980	5.97	39.82
6	5	Econ Bot	112	1092	4.55	44.37
7	6	Sci. Tech	105	1197	4.27	48.64
8	7	Curr Sci	70	1267	2.84	51.48
9	7	Economic Botany	70	1337	2.84	54.32
10	7	Indian J Pharmaceut Sci	70	1407	2.84	57.16
11	8	Biological Journal	63	1470	2.56	59.72
12	8	Diabetic Res Clin Prac	63	1533	2.56	62.28
13	8	J Bamboo Rattan	63	1596	2.56	64.84
14	9	J Intellectual Property Rights	56	1652	2.28	67.12
15	9	Am J Physiol	56	1708	2.28	69.40
16	9	Food Chem	56	1764	2.28	71.68
17	9	J Siddha	56	1820	2.28	73.96
18	9	Nutrition	56	1876	2.28	76.24
19	10	J Soil Water consev	50	1926	2.03	78.27
20	10	Botanical, influences on cardovascular disease	50	1976	2.03	80.30
21	11	ICAR Res Bull NEH Region	49	2025	1.99	82.29
22	11	J Sci Food Agric	49	2074	1.99	84.28
23	11	Life Sci	49	2123	1.99	86.27
24	11	Res Dev	49	2172	1.99	88.26
25	12	Egyptian J Dairy Sci	37	2209	1.50	89.76
26	13	Am J Physiol	35	2244	1.42	91.18
27	13	Indian J Ext Edu	35	2279	1.42	92.60
28	14	Gastroenterology	28	2307	1.14	93.74
29	14	J Am Chem Soc	28	2335	1.14	94.88
30	14	Agric Human Val	28	2363	1.14	96.02
31	14	Ancient Sci Life	28	2391	1.14	97.16
32	14	Plant Sci	28	2419	1.14	98.30
33	15	Bull Med Ethnobot Res	21	2440	0.85	99.15
34	15	Indian J Forestry	21	2461	0.85	100
		Total	**2461**		**100**	

The year wise distributions of the journal citations are presented in table 4. The above table showed that maximum number of citations 1673 (67.98%) produced in 2006. Followed by 788 (32.02%) citations in the year 2005.

Table 5 shows the details of number of citations appearing at the end of contributions during 2005-2006. The highest number of contributions with citation between 01-09 is 79 (45.66%) and lowest number of contributions with citations between 60-69 is 1 (0.57%).

Table no. 6 gives country-wise distribution of citations in Traditional Knowledge. Here the citations are analysed according to their country of origin. 1518 (61.68%) of the citations are from India. Followed by UK 301 (12.23%), USA 300 (12.19%), Pakistan 68 (2.76%),Nigeria 32(1.30%),Ireland 32(1.30%), Canada 28 (1.14%), Nepal 20 (0.81%).Followed by Switzerland, Zimbabwe, England, Germany, Indonesia, France, Srilanka, Kenya, Argentina, Denmark, China,Egypt, Singapore, Italy, Japan, Malaysia, Colombia.

Table no.7 depicts the ranking list of journals. The table provides a list of journals with 2461 citations. Journal of J Econ Tax Bot is highly cited i. e. 273 (11.10%) followed by Journal Indian J Traditional Knowledge 210 (8.53%),Journal of Environmental 175 (7.13%),Journal of Ethnobotany 175 (7.13%), J Ethnopharmacol 147 (5.97%), Econ Bot 112 (4.55%),Journal of Sci. Tech 105(4.27%),Journal of Curr Sci 70(2.84%), Economic Botany, 70(2.84%), Indian J Pharmaceut Sci70(2.84%), and lowest no of articles 21 (0.85%) were published in Indian J Forestry.

CONCLUSION

As we all know India is well known for its traditional Knowledge all the globe. As it is a land of unity in diversity it is also rich in its cultural heritage. All the knowledge available is generated from the four fathers and is handed over to every next generation orally or manuscript. The study reveals that authors prefer writing in collaboration. The result analyzed reveals that botany subject ranks first in research followed by agriculture, fisheries. The highest number citations are contributed are in the year 2006. Botany is the basic subject of Indian culture as all the livelihood starts and ends in botany so it is the highly preferred subject by researchers Articles with 1-9 citation ranks highest. The ranked list of journals reveals that Indian Journal of Econ Tax Bot ranks first in the list . It is observed that authors prefer Indian literature. Geographical distribution reveals that India is highly preferred by the authors. The above study will help the librarians and information scientists in acquiring the more useful journals to the library particularly in the field of Traditional knowledge. This will indirectly help in reducing the cost incurred for acquiring the journals to the library and help the librarians to take decisions

regarding proper allocation of library budget towards the acquisition of periodicals to the library.

Many librarians and information scientists in decision-making process adopt the statistical and mathematical techniques like citation study or bibliometric study. These studies are adopted in order to overcome the problems like explosive growth of subjects.

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