

## Indian Journal of Traditional Knowledge: A Scientometric Study (2002-2012)

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### ABSTRACTS

*The study focuses on Scientometric studies on Indian journals of traditional knowledge has been carried out, journal containing 938 issues from 2002 – 2012 have been taken into consideration for the present study. The analysis covers and discusses in terms of Year wise distribution of articles; year wise authorship pattern; single v/s multiple authored papers; month wise (issue-wise) distribution of articles; authorship pattern of cited references; geographical distribution of articles; country wise distribution of articles; state wise (India) contribution of articles; institution wise distribution; length of article; year-wise distributions of citations; author wise distribution of articles; university wise distributions; list of keywords occurred more than 2 times in articles. The number of articles differ from 10 to 139. The highest number of articles, i.e. 139 (14.81%) was published in 2010 and lowest number i.e. 10 (1.06%) in 2003. A total of 938 articles was published during the period distributed over 39 issues of the journals. On an average 24 articles were published per issue.*

**Key Terms:** Scientometrics, Bibliometrics, Author Productivity; Indian Journal of Traditional Knowledge.

### 1. Introduction

Scientometrics is one of the most important measures for the assessment of scientific productions. Scientometrics is related to and has overlapping interests with Bibliometrics and Informetrics. The terms Bibliometrics, Scientometrics, and Informetrics refer to component fields related to the study of the dynamics of disciplines as reflected in the production of their literature. “Scientometrics” is the English translation of the title word of Nalimov’s classic Monograph *Naukometriy* in 1969, which was relatively unknown to western scholars even after it was translated into English. Without access to the internet and limited distribution, it was rarely cited. However, the term became better known once the journal *Scientometrics* appeared in 1978 (Garfield, 2007). There are many definitions for the term “Scientometrics” in the literature; Scientometrics is the quantitative study of the disciplines of science based on published literature and communication.



## 2. Literature Review

Gupta (2013) analyzed the research output of Bangladesh in S&T during 2001-10 on several parameters including its growth and country publications share in the world's research output, country publications share in various subjects in the national and global context, pattern of research communication in core domestic and international journals, geographical distribution of publications, share of international collaborative publications at the national-level as well as across subjects and characteristics of high productivity institutions, authors, and cited papers. Aswathy and Gopikuttan (2012) analysed of the journal during 2006-2010 which includes 780 papers and 15648 references. The study also reveals the degree of collaboration among the authors and Lotka's law is also applied to find the author productivity. Author says that the study is that universities are the most productive sector and that the most productive country is USA. Bauer et al. (2013) investigated associations of bibliometric measures with academic status and gender as well as the department characteristics of size and quota of senior researchers. And provided up-to-date bibliometric reference data describing the output and success of psychology researchers. Mulla (2012) focused on analyzing bibliographic details of documents on the ISS, which were obtained from the 2005-2009 issues of the journal "Indian Science Abstracts." He found that journals were the most important of publication in information science and scientometrics and that there was a strong trend of multi-authored papers during the given period. He also revealed that Karnataka was the source of the majority of the papers on ISS with Tamil Nadu and Delhi is trailing behind. Mihail and Turel (2011) examined the identity and development of the management information systems (MIS) field through a scientometric lens applied to three major global, regional and national conferences: International Conference on Information Systems (ICIS), Pacific Asia Conference on Information Systems (PACIS) and the Administrative Sciences Association of Canada Annual Conference (ASAC). It adapts the conference stakeholder approach to the construction of the identity of the MIS discipline and analyzes the proceedings of these three conferences. Pillai and Kumar (2010) obtained the scientific research contained in doctoral dissertations produced at the University of Kerala, India. The study notes the increase in research and states that nearly 11,000 students are awarded Ph.D degrees a year in India and a majority of them specialized in the sciences. A number of topics are addressed including the department of biochemistry at the University of Kerala, the methodology employed in the production of this research paper, and the division of the biochemistry students by gender. Kaur and Gupta (2009) discussed India's performance based on its publication output in immunology and microbiology during 1999-2008, based on several parameters, The study uses 10 years publications data in immunology and microbiology drawn from Scopus international multidisciplinary bibliographical database. Another study Gupta and Dhawan (2008) analysed India's publications output in three major international multidisciplinary databases, as indexed during 1981-2005. It reported on India's comparative strength in world science and technology (S&T) output, its growth and decline, its strong and weak subject areas of research, media of communication, its collaborative profile and quality of S&T output, institutional productivity and quality, and dynamics of Indian research at institutional and sectoral levels and improving the quantity and quality of research S&T in India.



### 3. Objective of the study

The main research objectives are:

1. To study the year –wise distribution of papers, issue-wise distribution of papers and geographical distribution of papers.
2. To study the authorship pattern of the papers and average number of references per paper
3. To study the average length of the papers and institute-wise distribution of papers
4. To study subject -wise distribution of papers and country wise distribution of paper.

### 4. Scope and Limitation

For the present study the investigator has selected “Indian journal of Traditional Knowledge” for the period of 11 year 2002 to 2012 conduct scientometric analysis in the field of Traditional knowledge. This journal is being published by **National Institute of Science Communication and Information Resources (NISCAIR)** website; the periodicity of the journal is quarterly.

### 5. Methodology

In the present study “Indian Journal of Traditional Knowledge (2002-2012), will be used as source journal. The data will be collected from the electronic version of the IJTK journal. All the required data like number of authors, number of pages, contribution in each volume, geographical location of authors, the number of pages of article pages will record and tabulate using MS Excel. The tables and graphs have generated in accordance with the objectives of the study. The data was analyzed in terms of authorship pattern and measured the degree of collaboration in the journal. The gathered data after due analysis, will tabulate and processes for analysis and subsequent interpretation. The degree of collaboration (DC) of the contributors was derived using the Subramanyam (1983) formula which states that the degree of collaboration is the ratio between the number of multiple authored papers and the number of multiple author papers plus number of single authored papers. This formula can be represented as follows:

NM

DC= -----

NM + NS

Where, DC = Degree of collaboration

NM = Number of multiple authored papers

NS = Number of single authored papers

The present study is based on the analysis of bibliographic details of Indian journal of traditional Knowledge in the Indian free accessible journal web site.

### 6. Results and Discussions

#### 6.1. Year Wise Distribution of Articles

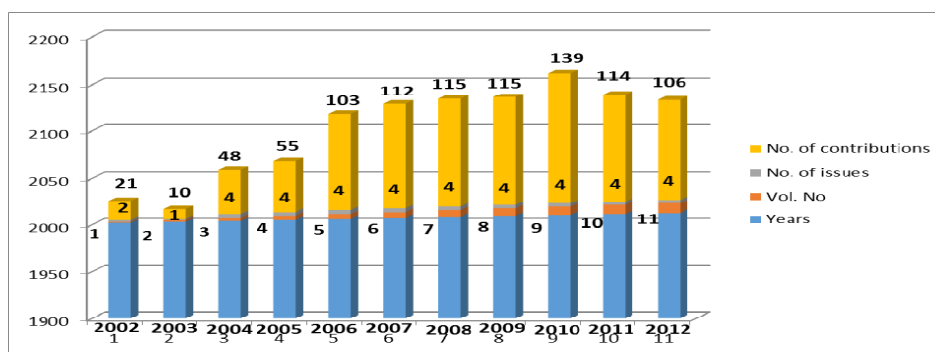
Table 6.1 shows the year wise distribution of articles in the journal. The number of articles varied from 10 to 139. The highest number of articles, i.e. 139 (14.81%) was published in 2010 and lowest number i.e. 10 (1.06%) in 2003. A total of 938 articles were published



during the period distributed over 39 issues of the journals. On an average 24 articles were published per issue.

**Table: 6.1 Year wise distribution of articles**

Sl no	Years	Vol. No	No. of issues	No. of contributions	Percentage
1	2002	1	2	21	2.23
2	2003	2	1	10	1.066
3	2004	3	4	48	5.11
4	2005	4	4	55	5.86
5	2006	5	4	103	10.98
6	2007	6	4	112	11.94
7	2008	7	4	115	12.26
8	2009	8	4	115	12.26
9	2010	9	4	139	14.81
10	2011	10	4	114	12.15
11	2012	11	4	106	11.30
<b>Total</b>		<b>11</b>	<b>39</b>	<b>938</b>	<b>100</b>



**Fig: 1. Year wise distribution of articles**

## 6.2. Year Wise Authorship Pattern

Table 6. 2 shows that there were 187 single authored, 253 two authored, 214 three authored and 284 more than three authored certified published during 11 year 2002 to 2012. Out of there 83 articles were published in the year 2012.

**Table: 6.2 Year wise authorship pattern**

Sl no	Years	Single Author	Two Author	Three Authors	More than Three Authors	Total Authors	Percentage
1	2002	10	5	4	2	21	2.23
2	2003	2	6	0	2	10	1.06
3	2004	12	12	15	9	48	5.11
4	2005	9	21	16	9	55	5.86
5	2006	13	34	30	26	103	10.98
6	2007	2	2	2	106	112	11.94
7	2008	22	39	31	23	115	12.26
8	2009	7	46	32	30	115	12.26
9	2010	18	45	42	34	139	14.81
10	2011	9	33	36	36	114	12.15
11	2012	83	10	6	7	106	11.30
<b>Total</b>		<b>187</b>	<b>253</b>	<b>214</b>	<b>284</b>	<b>938</b>	<b>100</b>



### 6.3. Single V/S Multiple Authored Papers

The table 6.3 represents that during the year 2002 and 2012 the maximum number of articles have been written by multiple authors that is 751, 187 were written by single authors. It is observed from the Table-3 that the lower number of collaborative research papers were published in 11 year.

**Table: 6.3 Single V/S Multiple authored papers**

Year	Single author	Percentage	Multiple authors	Percentage	Total
2002	10	5.34	11	1.46	21
2003	2	1.06	8	1.06	10
2004	12	6.41	36	4.79	48
2005	9	4.81	46	6.12	55
2006	13	6.95	90	11.98	103
2007	2	1.06	110	14.64	112
2008	22	11.76	93	12.38	115
2009	7	3.74	108	14.38	115
2010	18	9.62	121	16.11	139
2011	9	4.81	105	13.98	114
2012	83	44.38	23	3.06	106
<b>Total</b>	<b>187</b>	<b>100</b>	<b>751</b>	<b>100</b>	<b>938</b>

### 6.4. Month Wise (Issue-Wise) Distribution of Articles

The Table-6.4 shows the issues wise distribution of articles. The journal has 4 issues come in 4 different months i.e. January, April, July and October. Totally 938 articles were published from all the issues during the year of 2002 to 2012. In the month of January 243 articles, in the month of April 219 articles, in the month of July 234 articles and in the month of October 242 articles were published. It is observed that the highest number of articles published issue in month of January and the least number of articles were published in the month of April.

**Table: 6.4 Month wise (Issue-Wise) distribution of articles**

Sl. No	Vol. No	January	April	July	October	Total
1	1	0	0	10	11	21
2	2	0	10	0	0	10
3	3	14	12	10	12	48
4	4	15	4	16	20	55
5	5	28	24	26	25	103
6	6	37	25	25	25	112
7	7	38	23	26	28	115
8	8	21	30	31	33	115
9	9	37	34	35	33	139
10	10	22	32	30	30	114
11	11	31	25	25	25	106
<b>Total</b>	<b>11</b>	<b>243</b>	<b>219</b>	<b>234</b>	<b>242</b>	<b>938</b>

### 6.5. Authorship Pattern of Cited References

The table 6.5 shows the order of the authors in each paper according to their contribution is presented in this table. Out of 938 articles, the maximum number of articles the three and



more author's 284 (30.27%) takes a first place, two authors 253 (26.97%) takes a second place. Three author 214 (22.81%) and 187(19.93%) is written by single author takes last place.

**Table: 6.5 Authorship pattern of Cited References**

Sl. No	Authorship Pattern	Total No. of Articles	Percentage
1	Single	187	19.93
2	Joint	253	26.97
3	Three	214	22.81
4	Three and More	284	30.27
<b>Total</b>		<b>938</b>	<b>100</b>

## 6.6. Geographical Distribution of Articles

Table-6.6 reveals that articles have emanated from India and foreign Country. The geographical distribution of articles has been defined being the observed of the first author. From analysis it is deserved that the highest number of publications are from India i.e. 853 (90.93). Next comes foreign countries with 85 articles.

**Table: 6.6 Geographical distribution of articles**

SL. No	Name of the Institution	No. of Articles	Percentage
1	India	853	90.93
2	Foreign	85	9.06
<b>Total</b>		<b>938</b>	<b>100.00</b>

## 6.7. Country Wise Distribution of Articles

The above Table shows that country wise distribution of articles. It is known there are more numbers of articles 853 were published in India and 85 articles were published in 28 different countries of the world.

**Table: 6.7 Country wise distribution of articles**

Sl. No	Country	No. of Contributions	Percentage
1	India	853	90.93
2	Nigeria	13	1.38
3	Nepal	8	0.85
4	Bangladesh	7	0.74
5	Pakistan	7	0.74
6	Turkey	6	0.63
7	USA	6	0.63
8	Cameroun	4	0.42
9	Canada	4	0.42
10	Ethiopia	3	0.31
11	Iran	3	0.31
12	México	3	0.31
13	Brazil	2	0.21
14	Malaysia	2	0.21
15	Sri Lanka	2	0.21
16	Zimbabwe	2	0.21
17	Bangui	1	0.1



18	Bhutan	1	0.1
19	Bulgaria	1	0.1
20	China	1	0.1
21	European	1	0.1
22	France	1	0.1
23	Germany	1	0.1
24	Indonesia	1	0.1
25	Italy	1	0.1
26	Kenya	1	0.1
27	New Zealand	1	0.1
28	Philippines	1	0.1
29	Uganda	1	0.1
<b>Total</b>		<b>938</b>	<b>100</b>

## 6.8. State Wise (India) Contribution of Articles

Table-6.8 shows that the highest number of publication from Tamil Nadu i.e. 90 (10.55%) articles. Next comes Uttar Pradesh with 85 articles (9.96%) followed by Arunachal Pradesh and Karnataka with 67 (7.85%) articles, end minimum publishing state is Andaman & Nicobar Islands.

**Table: 6.8 State wise (India) contribution of articles**

Sl. No	State	No. Articles	Percentage
1	Tamil Nadu	90	10.55
2	Uttar Pradesh	85	9.96
3	Arunachal Pradesh	67	7.85
4	Karnataka	67	7.85
5	Assam	60	7.03
6	New Delhi	49	5.74
7	Maharashtra	39	4.57
8	Kerala	36	4.22
9	West Bengal	36	4.22
10	Rajasthan	32	3.75
11	Andhra Pradesh	31	3.75
12	Himachal Pradesh	31	3.63
13	Orissa	22	2.57
14	Meghalaya	27	3.16
15	Sikkim	22	2.57
16	Jharkhand	9	1.05
17	Jammu & Kashmir	18	2.11
18	Gujarat	17	1.99
19	Uttaranchal	17	1.99
20	Uttaranchal	17	1.99
21	Madhya Pradesh	16	1.87
22	Manipur	16	1.87





23	Nagaland	15	1.75
24	uttarakhand	13	1.52
25	Haryana	9	1.05
26	Mizoram	5	0.58
27	Punjab	4	0.46
28	Andaman & Nicobar Islands	3	0.35
<b>Total</b>		<b>853</b>	<b>100</b>

## 6.9. Institution Wise Distribution

Table-6.9 shows that the articles emanating from different organization. The highest number of articles 21 has emanated from College of Horticulture & Forestry, Central Agricultural University, Pasighat. Garhwal Unit G.B. Pant Institute of Himalayan Environment and Development and Laboratory of Ethnobotany & Agrostology, Department of Botany, University College of Science, Mohanlal Sukhadia University, Udaipur account for 12.

**Table: 6.9 Institution wise distribution**

Sl.No	Institution Name	Contribution	Rank
1	College of Horticulture & Forestry, Central Agricultural University, Pasighat	21	1
2	Garhwal Unit G.B. Pant Institute of Himalayan Environment and Development	12	2
3	Laboratory of Ethnobotany & Agrostology, Department of Botany, University College of Science, Mohanlal Sukhadia University, Udaipur	12	2
4	Botanical Survey of India, Arunachal Field Station, Itanagar	8	3
5	Department of Moalijat, Ajmal Khan Tibbiya College, Aligarh Muslim University, Aligarh	7	4
6	Tropical Botanic Garden and Research Institute, Pacha-Palode, Thiruvananthapuram	6	5
7	Defence Institute of High Altitude Research, DRDO	6	5
8	Amity Institute for Herbal and Biotech Products Development, 3 Ravi Nagar, Peroorkada, PO Thiruvananthapuram	5	5
9	Department of Ecology and Environmental Science, Assam University, Silchar	5	5
10	Department of Textiles and Apparel Designing, College of Rural Home Science, UAS, Dharwad	5	5
11	Pharmacognosy and Ethnopharmacology Division, National Botanical Research Institute, Lucknow	5	5
12	Regional Research Laboratory, Substation (CSIR), Lamphelpat	4	4
13	Department of Biotechnology, Bharathidasan University	4	4
14	Duthie Herbarium, Ethnobotany Cell, Department of Botany, University of Allahabad	4	4
15	Department of Biotechnology, Bharathidasan University	4	4
16	Food Microbiology Laboratory, Sikkim Government College, Sikkim University, Tadong	4	4
17	Regional Research Institute (Ay), Ashoka Pillar, Jayanagar, Bangalore	4	4
18	Microbiology Laboratory, Department of Biotechnology &	3	5





	Bioinformatics, North Eastern Hill University		
19	Foundation for Revitalisation of Local Health Traditions, Bangalore	3	6
20	Ethnobotanical Lab., Department of Botany, Arunachal University, Itanagar	3	6
21	Botanical Survey of India, Eastern Regional Centre, Shillong	3	6
22	Botanical Survey of India, Eastern Circle, Shillong 793003, Meghalaya	3	7
23	Department of Clothing and Textiles, Family and Community Sciences, The Maharaja Sayajiroa University of Baroda, Vadodara	3	8
24	Department of PG Studies and Research in Applied Botany, Kuvempu University, Jnana Sahyadri, Shankaraghatta 577 451, Shimoga	3	9
25	Department of Pharmacognosy, MS Ramaiah College of Pharmacy, MSRIT Campus, Bangalore	3	10
<b>Total</b>		<b>140</b>	

## 6.10. Length of Article

This table shows the length of articles published in "IJTK Journal" during 2002 to 2012. In this study identify length of 462 articles are 1-5 pages published, 383 articles are 6-10 pages published, 48 articles are 11-15 pages published. The highest length of last 8 articles are 16 and more pages published.

**Table: 6.10 Length of Article**

Sl. No	Year	1 to 5	6 to 10	11 to 15	16 and more	Total
1	2002	6	11	3	1	21
2	2003	1	7	2	0	10
3	2004	15	28	5	0	48
4	2005	23	28	4	0	55
5	2006	62	39	1	1	103
6	2007	61	45	5	1	112
7	2008	74	37	4	0	115
8	2009	66	46	2	1	115
9	2010	85	45	9	0	139
10	2011	69	33	9	3	114
11	2012	37	64	4	1	106
<b>Total</b>	<b>11</b>	<b>462</b>	<b>383</b>	<b>48</b>	<b>8</b>	<b>938</b>

## 6.11. Year-Wise Distributions of Citations

Above the table provides data related to the articles published in from 2002 to 2012. The number of citation received in the article in the respective year is shown in the table. In 2002, 21 articles were published and the total number of the citations from all the 21 articles was 245 (1.55%) citations, in 2003 10 articles were published with the total of 142 (0.90%) citations, in 2004, 48 articles were published with the total of 765 (4.86%) citations and maximum in 2012 106 articles were published with the total of 2545 (16.16%) citations.



**Table: 6.11 Year-Wise Distributions of Citations**

Sl. No	Year	No. of contribution	No. of Reference	Percentage
1	2002	21	245	1.55
2	2003	10	142	0.90
3	2004	48	765	4.86
4	2005	55	665	4.22
5	2006	103	1613	10.24
6	2007	112	1774	11.27
7	2008	115	1710	10.86
8	2009	115	1919	12.19
9	2010	139	2348	14.91
10	2011	114	2014	12.79
11	2012	106	2545	16.16
<b>Total</b>	<b>11</b>	<b>938</b>	<b>15740</b>	<b>100</b>

### 6.12. Author Wise Distribution of Articles

This Table-6.12 has to list in Author wise distribution of articles in terms of publishing, maximum number of article out of 938 Ranjay k. Singh. He has published 39 articles, 14 articles published by R. C Srivastava and S. S. Katewa that they published 12 articles.

**Table: 6.12 Author wise distribution of articles**

Sl. No	Authors	No of Publications	Rank
1	Ranjay K Singh	39	1
2	R C Srivastava	14	2
3	S S Katewa	12	3
4	H R Nagendra	12	3
5	Amish K Sureja	9	4
6	Yoganarasimhan SN	8	5
7	C S Reddy	8	5
8	A K Das	8	5
9	Suresh Kumar	7	6
10	K N Reddy	7	6
11	Jyoti Prakash Tamang	6	7
12	A Arunachalam	6	7
13	Shailaja D Naik	6	7
14	Chiranjibi Pattanaik	6	7
15	H K Sharma	6	7
16	Tajuddin M	6	7
17	S Ayisha Firdouse	6	7
18	D Karpagam	6	7
19	Anamika Singh	5	8
20	Singh A	5	
21	TK Mukherjee	5	8
22	V George	5	8
23	Ambika Nag	5	8
24	TK Mukherjee	5	8
25	P K Galav	4	9



## 6.13 University Wise Distributions

The Table-6.13 shows the highest number of articles contribution universities. It is found out in a study that Aligarh Muslim University got first place for publishing 13 articles out of 938, second come the Assam University for publishing 11 articles and Annamalai University 8 articles publishing.

**Table: 6.13 University wise distributions**

Sl. No	University Name	No. of Contributions	Rank
1	Aligarh Muslim University	13	1
2	Assam University	11	2
3	Annamalai University	8	3
4	Manipur University	7	4
5	Gauhati University	6	5
6	Banaras Hindu University	6	5
7	University of Allahabad	5	6
8	Gulbarga University	4	7
9	Nagaland University	4	7
10	University of Ibadan	4	7
11	Kumaon University	4	7
12	Nagaland University	4	7
13	Bharathidasan University	4	7
14	University of Ibadan	4	7
15	M L Sukhadia University	4	7
16	Arunachal University	3	8
17	Dibrugarh University	3	8
18	Assam Agricultural University	3	8
19	Jiwaji University	3	8
20	Nagpur University	3	8
21	Dibrugarh University	3	8
22	North Eastern Hill University	3	8
23	Guru Gobind Singh Indraprastha University	2	9
24	Himachal Pradesh University	2	9
25	University of Kashmir	2	9
<b>Total</b>		<b>115</b>	

## 6. 14. List of Keywords Occurred More Than 2 Times in Articles

Table-14 shows that the key words “Ethnomedicine” and “Plants” account for highest numbers of articles i.e. 169 times. “Medicinal Plants”, “Indigenous” third and fourth i.e. with 135 and 122 times, other keywords are responsible for less than 10% articles.

**Table: 6.14 List of keywords occurred more than 2 times in articles**

Sl. No	KeyWords	No. of times occurred
1	Ethnomedicine	169
2	Plants	169
3	Medicinal Plants	135
4	Indigenous	122



5	Indigenous	81
6	Tribes	57
7	Folk medicine	37
8	Biodiversity	36
9	Unani	35
10	Veterinary	32
11	Health	28
12	Ayurveda	25
13	Unani Medicine	24
14	Ethnic	18
15	Hnoveterinary practices	15
16	Folklore	11
17	Yoga	10
18	Ethnozooology	9
19	Traditional handicrafts	9
20	Agriculture	8
21	Siddha	7
22	Pharmacognosy	7
23	Ethnobiology	5
24	Biology	5
25	Ethnopharmacology	4

## 7. Conclusion

A correct estimation of the significance of research carried out is the necessary element of Traditional knowledge of the ordinary community. Scientometrics indices allow to study chronological variations in the community productivity in the qualitative and quantitative aspects (for a separate researcher and for an institute in general), subjects of research, categorization and core of the journals used to publish the results, citations of publication and their impact on the community, etc. This study attempts to identify the Scientometric characteristics of the articles published in the journal Indian journal of traditional knowledge during the study period 2002-2012. conclusions drawn from this study.

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