Citation analysis of Ph.D Thesis in Chemistry submitted to Banasthali Vidyapith

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Abstract

In the present work the citations of the Ph.D. theses in chemistry submitted to Banasthali Vidyapith has been analyzed. In total there were 103 thesis submitted till 2017. The citations have been analyzed on the basis of no of pages, no of citations, top supervisors, bibliographic forms of documents, age of literature. The total number of pages are 22441 with average number of pages 211.70. The total citations are 33238, with average citations per thesis 322.70. D Kishore has supervised the 53 theses.

Keywords: Bibliometrics, Citation Analysis, Chemistry. Banasthali Vidypaith,

Introduction

The main objective of the citation analysis is to examine the literature in any field. The analysis gives the distribution of sources. In this various bibliometric techniques have been applied to count the citations for understanding the influence of the publications and patterns. Many researchers has explored the various field using the bibliometrics techniques Likewise Ramakrishna, N.V. and Pangannaya, N.B. (1999) recognized literature about cell culture technology of animal that depends upon the collected citations from Animal Cell Biotechnology publication. They also added some extra features like physical format, subject, determining country, core journals on the same topic. They also analyzed most outdated and cited journals in animal cell technology using Bradford's Law. Their detailed examination depends on gathered citations from different types of journals gave an acumen about the verdict of other characteristics as physical format, chronological distribution etc. Gunasekaran, S., Batcha, M., Sadik and Sivaraman, P. (2006) expressed about the reality that collected data from CD-ROM version of Chemistry Citation Index was correlative with Chemical sciences research in India. 6186 papers were published by Indian Researchers from the source of 12 non-journals and 569 journals and among them over 45% of papers published in journals with less than 1.00 impact factor. The number of papers present in UK and Indian journals was 20 and 21 percentages respectively. But US journals itself hold 26% of present papers in journals which was more than Indian and UK journals. Other countries like US, Germany, Japan, and Great Britain also stretched out their research with above countries. This article helped to find out research productivity of Indian authors in the area of Chemical Sciences. Dixit, Swati and Katare, V. V. (2007) analyses 'Journal of the Indian Society for Cotton Improvement' (1995-2004)" (1995-2004), revealed the importance of current research practices of cotton scientists with the help of the published articles in the Journal of the Indian Society of Cotton Improvement in between 1995-2004. Models connected to Subjects, citations, contributing institutions, bibliographic forms and authorship were also suppressed to a complete scrutiny. In this research article the authors explored the research trends of cotton scientists by thoroughly analyzed from different patterns of articles. Krishnamoorthy G., Ramakrishnan, J. and Devi, S. (2009) explained about the collected data from MEDLINE database within the time period from 1995 to 2004. The series of data collection list was like that 13244 was the maximum number of records collected in the month of 2003, then pursued by 12690 in 2002 and 11061 in 2001 respectively. Some time it was also recognized that relative growth rate (RGR)

decreased because the data were count followed by year. Every year the graph of Doubling Time (Dt) was upward. On the account of research output in journals based ranking explored the fact that maximum diabetes research held in USA within the year 1995 to 2004. Authors consented with the fact of Bradford's Law of Scattering and that was research productivity of diabetes. The Bibliometric study showed doubling time and relative growth rate over literature on diabetes paper.

Research Methodology

Citation analysis is one of the parts of bibliometrics, which focuses on relationship between the references given by an author. In the present study this method is used analyze the citations of the doctoral thesis in the field of Chemistry submitted to the Banasthali Vidyapith, Rajasthan. The Banasthali Vidyapith is very old organization, which was established before independence in 1943 and It was granted the deemed university status in 1983 by UGC. In the field of pharmacy, 103 thesis have been submitted from 1987-2017 to Banasthali Vidyapith. The thesis were extracted from library, then references were typed in MS-Excel for further analysis. The references were structed to prepare the bibliographic database for applying bibliometric techniques in context to following objectives:

- Characteristics of Doctoral thesis
- To investigate the distributions of citations
- To analysis the top rank Chemistry supervisor
- To investigate the age of chemistry literature

Data Analysis and Interpretation

Table 1 indicates the year wise the distribution of the thesis. The first batch completed the doctoral degree in 1987. The maximum thesis was submitted in 2013-2017 and minimum in the year 2017. The Figure 1 reflects the chronological wise distribution of thesis.

Period	No. of Thesis	In %	Cumulative Percentage
1987-1992	3	2.91	2.91
1993-1997	2	1.94	4.85
1998-2002	6	5.83	10.68
2003-2007	5	4.85	15.53
2008-2012	31	30.10	45.63
2013-2017	56	54.37	100.00

Table 1. Distribution of Doctoral Dissertations

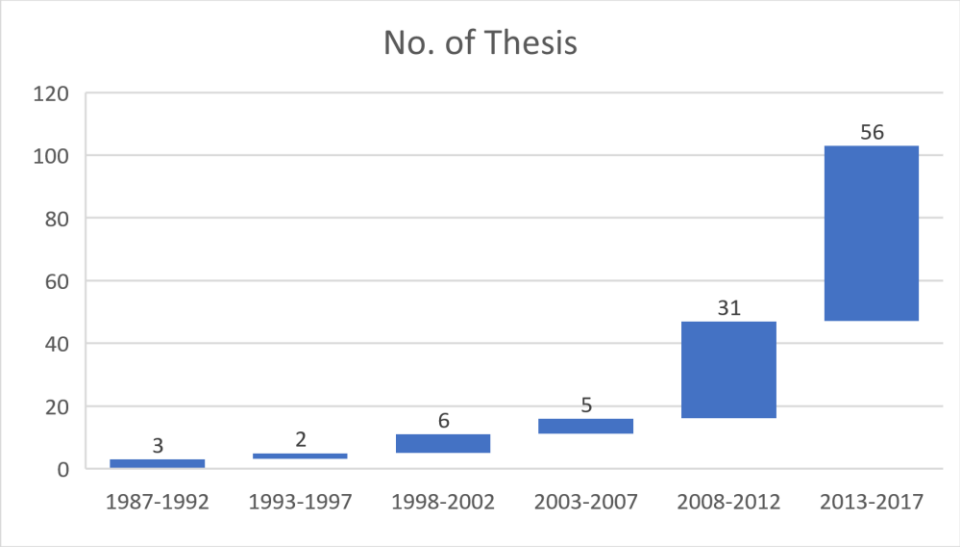

Figure 1: Distribution of Doctoral Dissertations

Table 2 represents the total number of pages in the doctoral thesis submitted from year 1987 – 2017. The 103 thesis comprised of 22441 pages. As obvious the maximum thesis were in 2013-2017, so the number of pages is also highest i.e. 12136. The average number of pages was maximum in the year 2008-2012 i.e. 242.61. For the years 1987-1992, and 216.7 the average pages were more than 200 and the least the average pages were in the year 21998-2002. It has been observed that with years the number of average pages has been reduced.

Period	No. of Pages	Average No. of Pages
1987-1992	635	211.67
1993-1997	391	195.50
1998-2002	772	128.67
2003-2007	986	197.20
2008-2012	7521	242.61
2013-2017	12136	216.71

Table 2. Distribution of Doctoral Dissertations according to Pages

Table 3. gives the number of citations in thesis submitted from 1987 to 2017. In total there were 33238 citations, with the maximum citations 17285 in 2013 -2017. The average number of citations is maximum in the year 2008-2012i.e. 365.29 and minimum in the year 1993-1997i.e. 213.50.

Period	No. of Citation	Average No. of Citation
1987-1992	1002	334.00
1993-1997	427	213.50
1998-2002	1695	282.50
2003-2007	1505	301.00
2008-2012	11324	365.29
2013-2017	17285	308.66

Table 3. Distribution of Doctoral Dissertations as per citations

Subject	Total No. of Theses (T1)	Total No. of Citations (C1)	Total No. of Thesis Pages (P1)	Average Pages of Thesis (P1/T1)	Average Citations	
					Per Thesis (C1/T1)	Per Pages of Thesis (C1/P1)

Chemistry	103	33238	22441	217.87	322.70	1.48

Table 4. Distribution of all the Chemistry theses and their pages and citations

S.No	Name of the Research Guide (1)	No. of Thesis Guided as Mains Guide (2)	No. of Thesis Guided as Co-Guide (3)	Wtg. given for Co-Guide (4)	Total (2+4)	%	Cumul. %
1	D Kishore	52	2	1	53	46.09	46.09
2	Bhawani Singh	9	2	1	10	8.70	54.78
3	Dinesh Kumar	9	2	1	10	8.70	63.48
4	Jaya Dwivedi	8	4	2	10	8.70	72.17
5	P K Santra	8			8	6.96	79.13
6	Sudesh Kumar	3			3	2.61	81.74
7	A.I. P. Sinha	2			2	1.74	83.48
8	Manish Srivastava	2			2	1.74	85.22
9	AneesA.Siddiqui	1			1	0.87	86.09
10	Arora Charu	1			1	0.87	86.96
11	Ashu Chaudhary	1			1	0.87	87.83
12	I P Pandey	1			1	0.87	88.70
13	K S Jain	1			1	0.87	89.57
14	Rakesh Yadav	1			1	0.87	90.43
15	S P Tiwari	1			1	0.87	91.30
16	Sarvesh Kumar Paliwal	1	1	0.5	1.5	1.30	92.61
17	Shashi Prabhi Tewari	1			1	0.87	93.48
18	Tokeer Ahmad	1			1	0.87	94.35
19	Chandra Sulekh		1	0.5	0.5	0.43	94.78
20	Kavita Poonia		1	0.5	0.5	0.43	95.22
21	Nishith Verma		1	0.5	0.5	0.43	95.65
22	Rajesh Kumar Thaper		1	0.5	0.5	0.43	96.09
23	ReenuSirohi		1	0.5	0.5	0.43	96.52
24	Sarker MOINUDDIN		1	0.5	0.5	0.43	96.96
25	Shah Anamik		1	0.5	0.5	0.43	97.39
26	Suman Gupta		1	0.5	0.5	0.43	97.83
27	Yashumati Ratan		1	0.5	0.5	0.43	98.26
28	Rajani Chauhan		2	1	1	0.87	99.13
29	Sankararamakrishnan Nalini		2	1	1	0.87	100.00
		103	24	12	115		

Table 5. Supervisors in the field of Chemistry

Forms of Documents	Total no. of Citations	Cumulative Citations	Percentage
Book/Edited Book	2020	2020	6.08
Conference Proceeding	157	2177	0.47
Internet	297	2474	0.89
Journal article	30455	32929	91.63

Meeting	2	32931	0.01
Monograph	10	32941	0.03
Patent	158	33099	0.48
Report	80	33179	0.24
Standard	2	33181	0.01
Thesis/Dissertation	57	33238	0.17

Table 6. Type of documents used in the citations of thesis

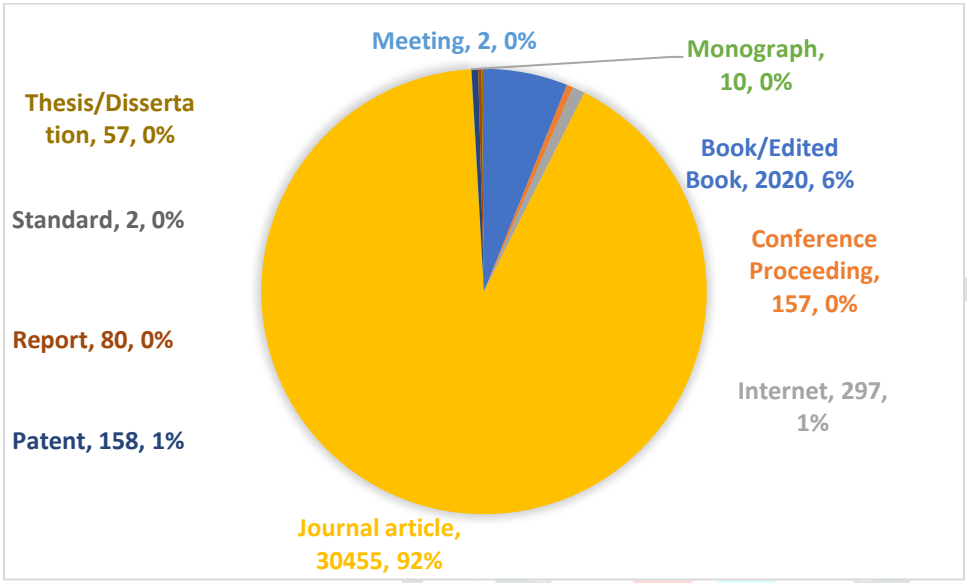

Figure 2: Type of documents used in the citations of thesis

Ages of Literature in Chemistry literature

Table 7 shows the years of the reference covered in the Chemistry literature. The 25 %, 50 %, 75 %, 90 % of the literature is covered in 8.23, 13.31, 21.09 and 32.84 years. The Obsolescence of Chemistry Literature is shown in the Figure 3. Table 8 gives the age of distribution in the Chemistry literature. The majority of the literature is covered in 5 – 9 years i.e. 24.84 %, followed by 10 – 14 years i.e. 23.34 %. 3.11 % of the literature is more than 50 years

Percentage of reference to be covered	Total
25%	8.23
50%	13.31
75%	21.09
90%	32.84

Table 7. Year of References Coverage Needed in Chemistry literature

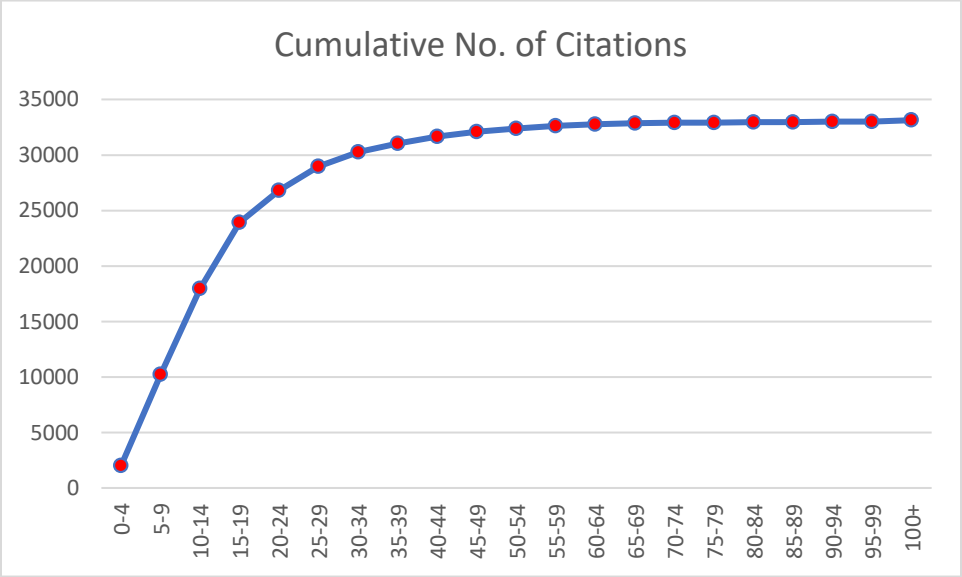

Figure 3. Obsolescence of Chemistry Literature

Age of Citations (Years)	No. of Citations	Cumulative No. of Citations	Percentage	Cumulative Percentage
0-4	2020	2020	6.10	6.10
5-9	8229	10249	24.84	30.93
10-14	7734	17983	23.34	54.28
15-19	5946	23929	17.95	72.23
20-24	2894	26823	8.74	80.96
25-29	2129	28952	6.43	87.39
30-34	1296	30248	3.91	91.30
35-39	772	31020	2.33	93.63
40-44	659	31679	1.99	95.62
45-49	424	32103	1.28	96.90
50-54	294	32397	0.89	97.78
55-59	215	32612	0.65	98.43
60-64	143	32755	0.43	98.87
65-69	103	32858	0.31	99.18
70-74	39	32897	0.12	99.29
75-79	30	32927	0.09	99.38
80-84	35	32962	0.11	99.49
85-89	9	32971	0.03	99.52
90-94	23	32994	0.07	99.59
95-99	8	33002	0.02	99.61
100+	129	33131	0.39	100.00

Table 8. Age Distribution of Total References in Chemistry

Conclusion

In this work the bibliometric analysis has been used for analyzing the literature of the Chemistry. Citation analysis has been conducted on the reference appended in the Ph.D. theses submitted to Banasthali Vidyapith in the field of Chemistry. There are total 103 theses with 22441 pages and 33238 citations. The average citations per thesis is 322.70 and average citations per pages of thesis is 1.48. The D Kishore is the

most prominent supervisors, who have supervised 53 theses. The maximum citations are from journal article i.e. 30455. The 50 % of the literature is covered in 13.31 years. Hence this work can be the base for the researchers working in the field of chemistry.

Reference

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