

Citation pattern of Doctoral Dissertations in Pharmacy submitted to Banasthali Vidyapith

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ABSTRACT

This work focuses on the analysis of 15408 citations, appended in the 64 thesis of Pharmacy submitted to the Banasthali Vidyapith, Rajasthan for the award of the doctoral degree from 2012-2019. The analysis focused on the characterization of thesis, distribution of citations, type and the form of literature cited, core list of the journal and authorship pattern. The study revealed that maximum thesis was submitted in the year 2015 i.e. 19 and as obvious the no of pages were maximum 3864, which implies that approx 203 pages per thesis. The maximum citations were 5144 for the year 2015. The topmost journal is "Bioorganic and Medicinal Chemistry with the occurrence of 455 times.

KEYWORDS: Citation Analysis; Bibliometric Study; Ph.D. Theses; Banasthali Vidyapith; Pharmacy.

INTRODUCTION

In The analysis of the bibliographic reference is an important aspect in research as it provides the links to other previous work held in the same field. Citation analysis gives the information about the quality of an article, an author or organizations based on the occurrence. It can be used to investigate the nature of documents, subject relationships, author's collaboration and it gives the comprehensive list of the popular documents in the particular subject area. Several types of work has been done based on this technique and they are being very impactful input for the researchers. Singh, K.P. and Bebi (2013) examined the PhD thesis in sociology submitted to Delhi university. According to the study, single-authored papers received the most citations (83.94 percent), with books accounting for 67.23 percent of citations and journals accounting for only 22.20 percent. The country-wise distribution of citations reveals that India had 2536 (45.52 percent) citations, followed by the United States and the United Kingdom. It also found that no standard format had used for citations moreover, researchers had not followed any pattern while citing the materials.

Jessy, A. and et al (2016) studied Citation analysis of academic publications to identify subscribed journals usage during 2010 to 2014. The study's goals were to determine: citations of subscribed e-journals in academic publications of five Manipal University health sciences institutions; annual growth rate of publications and citations; and frequently cited journals and those chosen for publishing their documents. Using affiliation search, the Scopus citation database was used to retrieve all documents published by the five health science institutions, and the number of citations to the library's subscribed e-journals was manually recorded from their reference list.

Fatima, Nishta (2017) analysed the Business Research through citation analysis. It includes 18 issues from 9 volumes of Business Research published bi-annually from 2008 to 2016. Researchers cited journals (77.33 percent) more than books, editorial works, and all other sources. Citations contributed by two authors (37.67 percent), single authors (33.42 percent), and three authors (33.42 percent) show an increase in the collaborative trend of writing papers (21.59 percent). Bradford's law was not found to be applicable in the study. The most cited journals are Academy of Management Journal (157 citations), Strategic Management Journal (141 citations), and The Journal of Finance (136 citations).

Citation study conducted by Kaur, Amritpal and et al. (2018) of economic thesis submitted to Punjabi University. This study analyzed the 9053 citations of 92 doctoral thesis submitted to Punjabi University and observed that highest number of publications 15 published in 2013. Economic researchers prefer single-authored documents for writing their theses, with single-authored documents accounting for more than 63 percent of cited documents, followed by two-authored documents accounting for 25.44 percent of citations.

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 pharmacy 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, 64 thesis have been submitted from 2012-2019 to Banasthali Vidyapith. The thesis were extracted from Shodhganga, then references were typed in MS-Excel for further analysis. The references were structured 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 recognize the core journals
- To investigate the authorship pattern

DATA ANALYSIS AND INTERPRETATION

Table 1 indicates the year wise the distribution of the thesis. The first batch completed the doctoral degree in 2012. There were six students, who submitted the thesis in the year 2012. The maximum thesis were submitted in 2015 and minimum in the year 2014. The Figure 1 reflects the chronological wise distribution of thesis.

Table 1. Distribution of Doctoral Dissertations

Year	No. of Thesis	in %	Cumulative Percentage
2012	6	9.38	9.38
2013	7	10.94	20.31
2014	1	1.56	21.88
2015	19	29.69	51.56
2016	4	6.25	57.81
2017	11	17.19	75.00
2018	11	17.19	92.19
2019	5	7.81	100.00
Total	64	100.00	

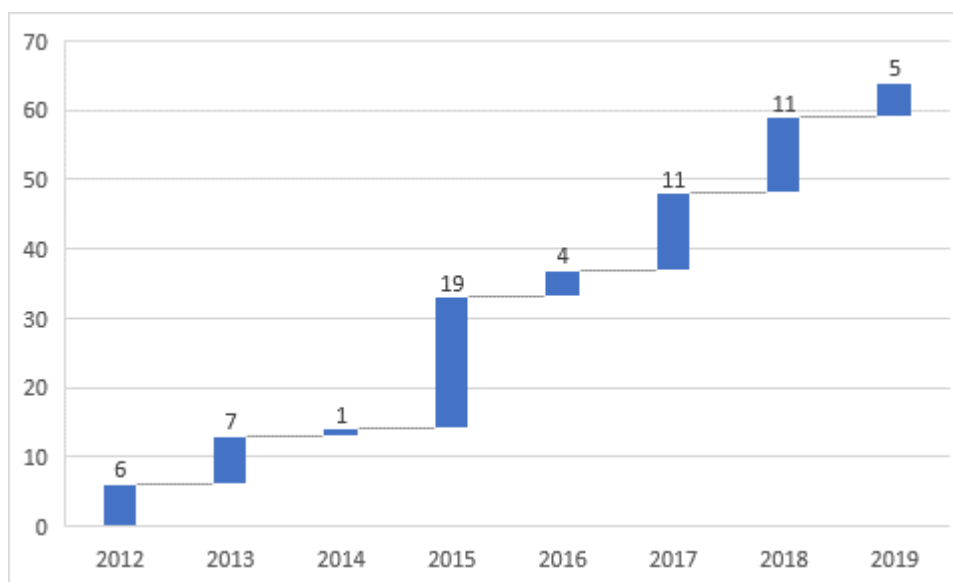


Fig 1: Distribution of Doctoral Dissertations

Table 2 represents the total number of pages in the doctoral thesis submitted from year 2012 – 2019. The 64 thesis comprised of 12101 thesis. As obvious the maximum thesis were in 2015, so the number of pages is also highest i.e. 3864. The average number of pages was maximum in the year 2012 i.e. 261.33. For the years 2013,2015 and 2016 the average pages were more than 200 and the least the average pages were in the year 2019. It has been observed that with years the number of average pages has been reduced.

Table 2. Distribution of Doctoral Dissertations according to Pages

Year	No. of Pages	Average No. of Pages
2012	1568	261.33
2013	1534	219.14
2014	156	156.00
2015	3864	203.37

2016	829	207.25
2017	1699	154.45
2018	1772	161.09
2019	679	135.80
Total	12101	

Table 3. gives the number of citations in thesis submitted from 2012 to 2019. In total there were 15408 citations, with the maximum citations 5144 in 2015 and minimum 154 citations in 2014 as in this year there was only one thesis. The average number of citations is maximum in the year 2012 i.e. 372.33 and minimum in the year 2018 i.e. 149.91.

Table 3. Distribution of Doctoral Dissertations as per citations

Year	No. of Citation	Average No. of Citation
2012	2234	372.33
2013	2250	321.43
2014	154	154.00
2015	5144	270.74
2016	679	169.75
2017	2271	206.45
2018	1649	149.91
2019	1027	205.40
Total	15408	

Table 4. gives the year wise distributions of type of the documents used in the citations. The documents cited were Books/Edited Books/Conference proceedings, Journal, Monograph/ Newspaper, Patent, Report, thesis and Website with 1031, 14123, 3, 41, 40, 7 and 163 occurrences respectively. Figure 2. two represents the total types of the documents.

Table 4. Type of documents used in the citations of thesis

Type of Document	2012	2013	2014	2015	2016	2017	2018	2019	Total
Book/Edited Book/Conference Proceeding	155	119	14	318	36	198	114	77	1031
Journal	2056	2111	130	4763	634	1988	1497	944	14123
Monograph/Newspaper				2		1			3
Patent	4	1		8		18	10		41
Report	3	5	2	13	5	3	6	3	40
Thesis		2		3		0	1	1	7
Website	16	12	8	37	4	63	21	2	163
Total	2234	2250	154	5144	679	2271	1649	1027	15408

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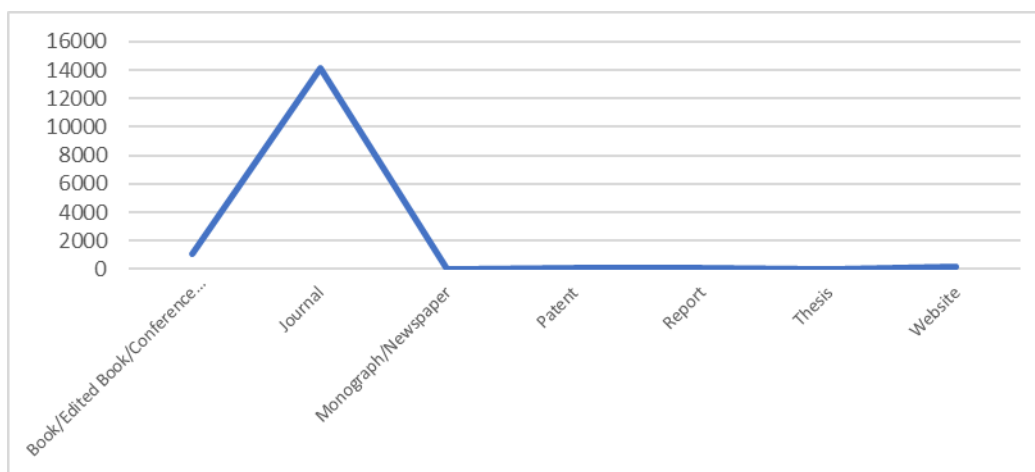


Fig 2: Type of documents used in the citations of thesis

Table 5. represents the authorship pattern among the citations, majority of the citations were having more than one authors. There were 12088 citations having more than one authors and 3079 citations were having the only one author. Thus most the cited literature in the field is of the collaborative nature.

Table 5. Authorship Pattern

No. of Authors	No of Citation	Percentage
One	3079	19.98
More than One	12088	78.45
Without Authors	241	1.56
Total	15408	100

Table 6 represents the length of the citations in the gap of 50 years. Before, 1900 there are 18 citations. There are 87 citations belonging to the category of 1901-1950, then 4204 belongs to 1951-2000 and 2001-2018 there are 10689 citations. Henceforth, in the field of science and technology the life of literature is short span. Therefore, researchers referred recent literature in the field of Pharmacy.

Table 6. Age of Citation

Age of Citation (Year)	No. of Citation
Before -1900	18
1901-1950	87
1951-2000	4204
2001-2018	10689
Year not mentioned	410
Total	15408

Table 7 gives the 20 topmost cited journals. The top two journals are “Bio-organic and Medicinal Chemistry” and “Journal of Medicinal Chemistry” with 455 and 434 occurrence. The “International Journal of Pharmaceutics” and

“European Journal of Medicinal Chemistry” with 159 and 150 occurrence. The Figure 3 represents the bar diagram of the top cited journals.

Table 7. Rank list of top cited journals

Rank	Name of Journal	Occurrence
1	Bio-organic & Medicinal Chemistry	455
2	Journal of Medicinal Chemistry	434
3	International Journal of Pharmaceutics	159
4	European journal of medicinal chemistry	150
5	Nature	107
6	Science	83
7	Journal of Ethno pharmacology	82
8	Molecules	80
9	Tetrahedron Letters	69
10	Journal of Organic Chemistry	66
11	Journal of Pharmaceutical Sciences	65
12	Journal of Ethnopharmacology	61
13	Tetrahedron	60
14	Lancet	57
15	Phytochemistry	55
16	Journal of the American Chemical Society	50
17	European Journal of Pharmaceutics and Biopharmaceutics	49
18	Journal of Controlled Release	49
19	Proceedings in National Academy of Science USA	46
20	Fitoterapia	44

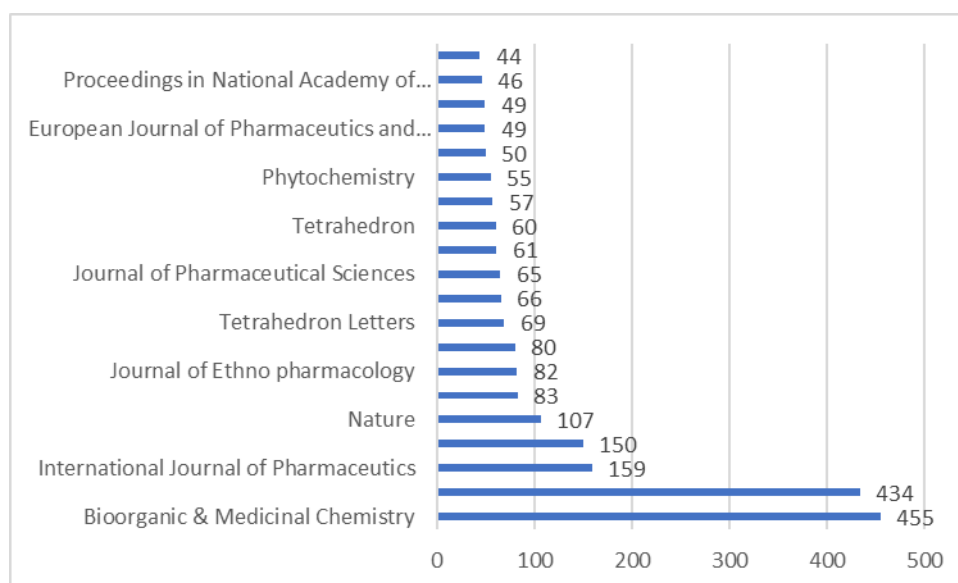


Fig 3: Top Rank of cited journals

CONCLUSION

The most important tool in bibliometrics is citation analysis. It is evident from the citations of Doctoral theses submitted in the field of Pharmacy, Banasthali Vidyapith, Rajasthan have referred the vast literature. 64 theses were there having 12101 pages and 15408 citations. The analysis indicated that journals are the most preferred sources followed by Book/Edited Book/Conference Proceeding. The maximum citations are collaborative in nature and researchers cited the recent literature most. The highly cited journal is Bio-organic and Medicinal Chemistry, occurring 455 times. The rank list of the journal presented can be helpful for the acquisition of periodicals in the library.

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