

Trend of authorship pattern measurement in PhD theses of Law: a case study of the University of Burdwan

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ABSTRACT

The present paper is based on 4483 citations from 44 PhD theses of Law submitted to the University of Burdwan during 2006-2015. The purpose of the study is to analyze the obsolescence rate of citations used in PhD theses under five sub-subjects of Law, i.e., Constitutional Law, Environmental Law, Int. Property Law, Criminal Law, Law & Social Transformation in India. This study has also analyzed the chronological distribution, subject-wise distribution, forms of literature, and half-life of citations. It was found that the highest number of theses were submitted in the year 2014 (18.18%) and most of the theses were from Constitutional Law and Criminal Law (11 theses each). It was also found that books (43.45%) were the most cited sources, followed by journals (22.57%). The study also revealed that a lot of books (40.50%) and journals (67.79%) were used in the time span of 0-9 years. The highest half-life period of books was 15.53 years in Constitutional Law, and journals were 7.85 years in Law & Social Transformation in India.

KEYWORDS: Bibliometrics, Citation analysis, Obsolescence rate, Law.

1. INTRODUCTION

Obsolescence studies are one of the important parameters of citation analysis. In 1927, Gross & Gross first used the term 'obsolescence' (Gross & Gross, 1927). Age of literature and obsolescence study is a quite common usage of citation analysis. It involves the decline in the use of documents or citations received by documents over a period of time. With the enormous growth of information, it is very important to choose the required information in libraries. Obsolescence of literature helps library professionals and knowledge scientists to decide on the preservation of the most frequently used literature and for withdrawing unused or less-used literature.

The present paper is an attempt to study the growth of obsolescence rate in the field of Law during the period 2006-2015.

2. LITERATURE REVIEW

Many studies have been conducted on obsolescence rate of literature to find out validity or utility of older literature i.e., Mathematics (Bandyopadhyay, 1996); Library and Information Science (Deshpande & Rajlakshmi, 1997;

Lokhande, 2007); Geology (Mahapatra & Bhagavan 2000); Economics (Hirwade & Dankhade, 2002); Political Science (Mondal, Bandyopadhyay & Roy, 2017; Mondal & Roy, 2018)

Madkey & Rajyalakshmi (1994) analyzed the 31 PhD theses of Environmental Science and Engineering and concluded that half-life period of book citations was 18 years and journals were 17 years. In another study of Engineering, Mulla, Dhanamjaya & Talwar (2013) analyzed 137 doctoral dissertations and reported that most of the books (26.21%) and journals (28.85%). In the study of Education, Nighot (2017) analyzed 23 doctoral theses and reported that the maximum number of books (4.36%) were 11 years old, and the average age of book citation was 37 years. He also stated that more than $\frac{1}{4}$ of the books referred was 0-9 years old and the half-life of books was 19 years. After analyzing the 141 PhD theses of Psychology during 1963-2005, Zafrunnisha & Reddy (2010) concluded that nearly 27 % of books were 11 years old, journal citations were 8 years old, and the half-life citation of books was 19 years old and journal citation of journals was 14 years. In the study of Agronomy, Kittur & Bakapur (2017) analyzed 16976 citations from 92 theses and pointed out that most of the citations were used in the recent age 0-9 years (books were 17.34% and journals were 36.13%), and only 13% of citations were used in the age of 30- 100+ years. The half-life of journals and books was 52.5 years, and the mean year of journals and books was 53.009. After analyzing the 85 doctoral theses of Political Science, Kumar (2017) stated that there are 7141 books out of 12184 citations and reported that the maximum number of oldest cited books was 155 years, and the half-life of books was 19.62 years.

3. OBJECTIVES

- ✓ To analyze the total number of PhD theses according to year;
- ✓ To identify the bibliographic form of documents;
- ✓ To show the age of references of books and journals; and
- ✓ To show the half-life of books and journals.

4. SCOPE

A total of 4483 citations appended to 44 PhD theses of five major sub-fields of Law viz., Constitutional Law, Environmental Law, Int. Property Law, Criminal Law, Law & Social Transformation in India have been analyzed to show the obsolescence rate of publications.

5. METHODOLOGY

The data for the study (4483 citations) are collected from Shodhganga (<http://shodhganga.inflibnet.ac.in/>), a repository for Indian PhD theses. Then all this related information is analyzed through dBase III Plus programmers. The interpretation of data findings of the study is recorded.

6. DATA ANALYSIS

This section analyzes the obsolescence rate of publication pattern of 4483 citations from 44 PhD theses of the Law subject and its sub-fields during the period 2006-2015 through various tables and charts. The results of the analysis are discussed below.

6.1 Chronological distribution of PhD theses

This section shows the total number of theses according to the year of their submission. There are total of 44 theses were used during 2006-2015 (Table 1).

Table 1: Chronological distribution of PhD theses

Year	No. of theses in Law	%
2006	3	6.81
2007	2	4.54
2008	-	-
2009	7	15.90
2010	4	9.09
2011	7	15.90
2012	4	9.09
2013	6	13.63
2014	8	18.18
2015	3	6.81
Total	44	

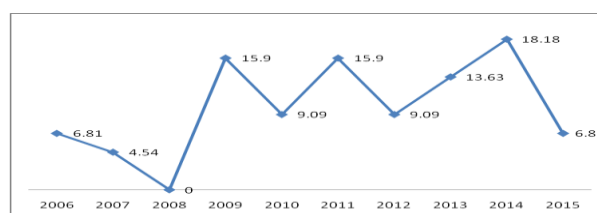


Fig.1: Chronological distribution of PhD theses

It is revealed from this table that the maximum number of theses (8 theses, 18.18%) were submitted in the year 2014, and the least number of theses were in the year 2007, and no theses were found in the year 2008 (Fig.1)

6.2 Subject-wise distribution of Law

Table 2 shows the subject-wise distribution of total theses during the said period. There are a total of five sub-subjects of Law, i.e., Constitutional Law, Environmental Law, Int. Property Law, Criminal Law, Law & Social Transformation in India.

Table 2: Subject-wise distribution

Disciplines	Total no. of theses	%
Constitutional Law	11	25
Environmental Law	7	15.90
Int. Property Law	5	11.36
Criminal Law	11	25
Law & Social Transformation in India	10	22.72
Total	44	100

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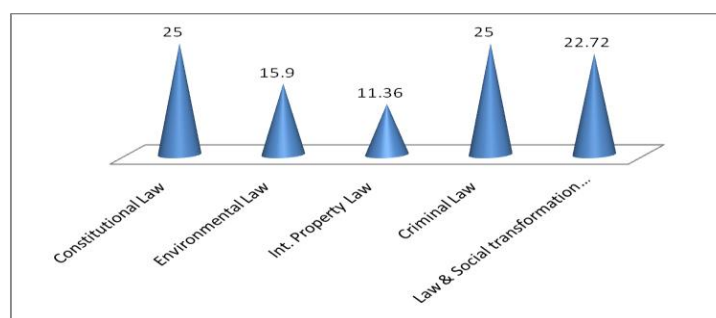


Fig.2 represents the specific subject-wise distribution of Law.

It is clear from this table that the maximum number of theses were contributed in Constitutional Law and Criminal Law (11 theses, 25%), and the least number of theses were contributed in Intellectual Property Law (5 theses, 11.36%).

6.3 Bibliographic forms of literature

This section presents the wide variety of information resources used by researchers in Law. Broad subjects and their specific subjects are arranged in this table (Table 3).

Table 3: Bibliographic forms of literature

	Law		Constitutional Law		Environment al Law		Int. Property Law		Criminal Law		Law & Social transformation in India	
Forms	No. of cit	%	No. of cit	%	No. of cit	%	No. of cit	%	No. of cit	%	No. of cit	%
Books	1948	43.45	423	42.51	468	43.09	246	42.20	395	40.14	416	49.82
Journals	1012	22.57	176	17.69	255	23.48	114	19.55	307	31.20	160	19.16
Reports	393	8.77	71	7.14	77	7.09	91	15.61	67	6.81	87	10.42
Conferenc e/ seminar etc	86	1.92	24	2.41	20	1.84	14	2.40	4	0.41	24	2.87
Thesis	4	0.09	0	0	2	0.18	0	0	1	0.10	1	0.12
Unpublish ed	4	0.09	1	0.10	2	0.18	0	0	1	0.10	0	0
Acts	654	14.59	190	19.10	142	13.08	79	13.55	142	14.43	101	12.10
Others	162	3.61	31	3.12	44	4.05	23	3.95	30	3.05	34	4.07
Online books	196	4.37	77	7.74	59	5.43	11	1.89	37	3.76	12	1.44
Online journals	24	0.54	2	0.20	17	1.57	5	0.86	0	0	0	0
Total	4483		995		1086		583		984		835	

It is revealed that researchers cited books (43.45%) most frequently in broad and specific subjects, followed by journals (22.57%). Among overall citations, the least number of citations was cited in theses and unpublished works (4 theses, 0.09%).

6.4 Obsolescence of books and journals of Law (Decade-wise)

Table 4 represents the obsolescence of book and journal citations. There are a total of 1948 book citations and 1012 journal citations divided into 11 time span having 10 years blocks.

Table 4: Obsolescence of books and journals

Age of references	Book		Journal	
	Total citation	%	Total citation	%
0-9	789	40.50	686	67.79
10-19	526	27.01	176	17.39
20-29	258	13.25	97	9.58
30-39	169	8.68	29	2.87
40-49	114	5.86	9	0.89
50-59	43	2.21	7	0.69
60-69	10	0.52	2	0.20
70-79	12	0.62	2	0.20
80-89	14	0.72	3	0.30
90-99	4	0.2	00	00
100+	9	0.46	1	0.10
Total	1948	100	1012	100

It is found that most of the book and journal citations were cited in recent years. A lot of books (40.50%) and journals (67.79%) were cited in the time span 0-9 years. It also reveals that 80.75% of book citations come under the age group 0-29, and the remaining 19.25% of citations were used in the 30-100+ age group. Equally, 85.18% of book citations come under the age group 0-19, and the remaining 14.82% of citations were used in the 20-100+ age group. It is proved that there is a considerable decline in usage.

6.5 Obsolescence of book citations of sub-disciplines (Decade-wise)

Table 5 shows the obsolescence of book citations of sub-disciplines of Law. There are a total of 1948 citations of books scattered into five subjects and 11 time spans.

Table 5: Obsolescence of book citations of specific disciplines

Age of references	Book citation				
	Constitutional Law	Environmental Law	Int. Property Law	Criminal Law	Law & Social transformation in India
0-9	138 (32.62%)	203 (43.37%)	136 (55.28%)	154 (38.98%)	158 (37.98%)
10-19	107 (25.3%)	136 (29.05%)	85 (34.55%)	121 (30.63%)	77 (18.51%)
20-29	61 (14.42%)	45 (9.61%)	15 (6.09%)	62 (15.69%)	75 (18.03%)

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30-39	38 (8.98%)	41 (8.76%)	3 (1.21%)	28 (7.08%)	59 (14.18%)
40-49	44 (10.40%)	26 (5.55%)	3 (1.21%)	10 (2.53%)	31 (7.45%)
50-59	15 (3.54%)	6 (1.28%)	0	10 (2.53%)	12 (2.88%)
60-69	5 (1.18%)	1 (0.21%)	0	2 (0.50%)	2 (0.48%)
70-79	5 (1.18%)	5 (1.06%)	0	0	2 (0.48%)
80-89	7 (1.65%)	5 (1.06%)	0	2 (0.50%)	0
90-99	0	0	2 (0.81%)	2 (0.50%)	0
100+	3 (0.71%)	0	2 (0.81%)	4 (1.01%)	0
Total	423	468	246	395	416

It is determined that a lot of book citations were covered in the age group 0-9. The highest numbers of citations were contributed in Environmental Law (43.37%) in the age group 0-9. It was also found that in the subject Intellectual Property Law, 98.34% of book citations came under the age group 0- 49, and the remaining 1.66% of citations were cited in the age group 50-100⁺.

6.6 Obsolescence of journal citations of sub-disciplines (Decade-wise)

Like the above section, this section shows the obsolescence of journal citations of sub-disciplines. There are a total of 1012 journal citations scattered into five disciplines.

Table 6: Obsolescence of journal citations of specific disciplines

Age of references	Journal citations				
	Constitutional Law	Environmental Law	Int. Property Law	Criminal Law	Law & Social transformation in India
0-9	105 (59.66%)	206 (80.78%)	100 (87.71%)	191 (62.21%)	84 (52.5%)
10-19	25 (14.20%)	33 (12.94%)	11 (9.64%)	76 (24.75%)	31 (19.37%)
20-29	22 (12.5%)	8 (3.13%)	3 (2.63%)	29 (9.44%)	35 (21.87%)
30-39	13 (7.38%)	3 (1.17%)	0	7 (2.28%)	6 (3.75%)
40-49	5 (2.84%)	2 (0.78%)	0	2 (0.65%)	0
50-59	1 (0.56%)	2 (0.78%)	0	1 (0.32%)	3 (1.87%)
60-69	1 (0.56%)	0	0	0	1
70-79	1 (0.56%)	1 (0.39%)	0	0	0
80-89	2 (1.13%)	0	0	1 (0.32%)	0
90-99	0	0	0	0	0
100+	1 (0.56%)	0	0	0	0
Total	176	255	114	307	160

It is clear from this table that most of the journal citations were covered in the age group 0-9. The highest number of citations (87.71%) were contributed in the subject of Intellectual property law in the age group 0-9, and 100% citations came under the age group 0- 29. It proves that researchers have used more recent citations than older ones.

6.7 Half-life of book and journal citations

The half-life of book and journal citations is calculated in Table 7. It is found that the half-life of books was 15.53 in Constitutional Law, whereas it is 8.60 in Intellectual Property Law. Equally, the half-life of the journal was 7.85 in Law & Social Transformation in India, whereas it is 4.16 in Intellectual Property Law.

Table: 7 Half-life of book and journal citations

Disciplines	Half-life of book	Half-life of journal
Law	11.70	5.48
Constitutional Law	15.53	6.42
Environmental Law	10.83	5.13
Int. Property Law	8.60	4.16
Criminal Law	12.02	5.90
Law & Social Transformation in India	13.90	7.85

FINDINGS

The findings of the study are following:

- In the Law discipline, the highest number of 8 theses (18.18%) were submitted in the year 2014, and the least number of theses was in the year 2007.
- In sub-disciplines of Law, the maximum number of theses were contributed in Constitutional Law and Criminal Law (11 theses, 25%), and the least number of theses were contributed in Intellectual Property Law (5 theses, 11.36%).
- It is revealed that researchers cited book citations (43.45%) most frequently in broad and specific subjects, followed by journals (22.57%).
- In the Law discipline, most of the book and journal citations were cited in recent years. A lot of books (40.50%) and journals (67.79%) were cited in the time span 0-9 years.
- In sub-disciplines of Law, the highest number of book citations was contributed in Environmental Law (43.37%), and journal citations were contributed in the subject of Intellectual Property Law (87.71%) in the age group 0-9.
- The half-life of books was 11.70 years, and journals were 5.48 years.

CONCLUSION

Due to the increasing cost of documents as well as shortage of space in libraries, it has become a challenging task for working professionals to select relevant documents. An obsolescence study is a study that gives directions towards selecting the best for the users. It also guides librarians in weeding out the unused or outdated materials. The study reveals that book citations are preferred more than journals, and the overall distribution of theses among

five sub-subjects is not equal. It is found that the half-life period is longer for books than journals, and citations are mostly of recent years.

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