

# CITATION ANALYSIS OF MANAGEMENT PHD THESES SUBMITTED TO GURU JAMBHESHWAR UNIVERSITY OF SCIENCE AND TECHNOLOGY, HISSAR

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**Abstract:** The present study is based on 5758 citations, appended in the 38 Ph.D. theses of Management submitted to Guru Jambheshwar University of Science & Technology, Hisar during the period 2000-2009. The main purpose of this study was to investigate authorship pattern of the citations, type and form of literature cited, and compiled a rank list of core journals in the Management field. The study revealed that journals were the most preferred sources of information used by the researchers in the field of Management accounting for 49.51% of total citations, followed by books with 31.82 % citations. The Journal of ‘Economic & Political weekly’ has ranked the first with 677 citations accounting for 20.03% of the total journal citations. Authorship pattern for journal citations shows that most of the citations were contributed by single author. The findings of the study revealed that out of the total number of 2851 journal citation, 46.26% are by single author.

**Keywords:** Citation Analysis; Bibliometric Study, Authorship Pattern; Journals Ranking; Bibliographic Form; Ph.D. Theses; Guru Jambheshwar University of Science & Technology, Hisar ; Management.

## 1.0 Introduction

Citation analysis is an effective tool to identify the core references in a subject by counting the citations appended at the end of each scientific article. It is basically a technique, which involves the process of collection, counting, analysis and interpretation of citations given in research writing and thereby helping in identification of significant sources of information.

Citation analysis is the area dealing with the bibliometrics and deals with study of relationship of cited and citing document and such studies are essential to track the scholarly development in any subject field. Citation analysis uses citations in scholarly works to establish links. Many different links can be ascertained, such as links between authors, between scholarly works, between journals, between fields, or even between countries. The very common use of citation analysis is to determine the impact of a single author on a given field by counting the number of times the author has been cited by others.

The first recorded citation analysis was done by Gross and Gross (1927) who looked at citational patterns to determine the journals to be subscribed to and back volumes to be acquired for the library of Pamona College. They studied the citation frequency in the reference given in the “Journal of The American Chemical Society (Amudavalli 1977).

## 2.0 Literature Review

**Gohain, Mr. Arjun & Saikia, Dr. Mukesh (2014)** The study revealed that journals were the most preferred sources of information used by the researchers in the field of chemical sciences accounting for 78.83% of total citations, followed by books with 15.57 % citations. The Journal of Journal of American Chemical Society has ranked the first with 617 citations accounting for 7.13% of the total journal citations. Authorship pattern for journal citations shows that out of the total number of 8658 journal citation, 39.89% are by more than three authors, followed by two authors with 22.28 %. **Banateppanvar, K, Biradar, B. S and Kannappanavar, B.U (2013)** studied doctoral theses of botany, submitted to the Kuvempu University during the years 2000-2006. Findings revealed that journals were the most preferred sources of information used by the researchers in the

field of botany, accounting for 74.77 % citations. Authors found that major citations come from journal literature. Authorship pattern for journal citations shows that most of the citations were contributed by multi authors. **Banateppanvar1, K and others (2013)** studied the materials cited in doctoral theses of the Zoology, submitted to the Kuvempu University, India during the year 2002 to 2006. Findings revealed that journals were the most preferred sources of information used by the researchers in the field of Zoology accounting with 74.47% of the total citations followed by books and monographs 18.02% citations. The Journal of Mutation Research occupied first rank with 94 citations accounting for 5.71% of the total journal citations. It was observed that major citation from journal literature and maximum numbers of cited materials were contributed by multi authors and degree of collaboration is 0.71. **Banateppanvar, K., Biradar, B. S. and Kannappanavar, B. U. (2013)** studied citation analysis of doctoral theses in biotechnology submitted to Kuvempu University, Karnataka. Journals were the most preferred sources used by the researchers in the field of biotechnology accounting with 79.72% of total citations. Plant cell tissue & org .cult (Netherlands) has ranked the first with 121 citations accounting for 4.16% of the total journal citations. Furthermore, Bradford's Law of Scattering was applied. The study examined the authorship pattern more cited materials were contributed by multi authors and degree of collaboration is 0.85. **Gupta, J. & Khare, V.P. (2013)** studied on citation analysis of Ph.D. theses of LIS in Dr. Harisingh Gour University, Sagar . Findings revealed that the most of the cited sources were journals. Authors found that most of the contributions of journals were from USA, and the most cited journals are IASLIC Bulletin with 11.89%. **Singh, K. P and Bebi (2013)** studied citation analysis of Ph.D. theses submitted in the department of Sociology of the University of Delhi during 1995-2010. The study was based on the 5766 citations taken out from 25 Ph.D. theses of sociology. Authors pattern found that highest number of citations was single authored 83.94 %, and 67.23 % citations were from books and only 22.20 % citations were from journals. **Kumar, K and Reddy, T. R (2012)** studied citations in master's degree dissertations submitted to the department of library and information science, Sri Venkateswara University, Tirupathi during the period 2000 – 2007. Findings showed that journals were the most utilized reference materials in the dissertations. **Trayambakrao, K. D and Sonwane, S (2012)** studied 2876 citations appended in 34 theses of Economics submitted to Dr. Baba Saheb Ambedkar Marathwada University the year 2000-2010. The study was carried out to find the types of cited document, the chronological distribution of cited documents, the authorship pattern of cited document, the rank list of cited journals-books, language wise distribution, geographical distribution of cited documents, the rank list of cited web– sources and the cited authors. **Zafrunnisha, N (2012)** in her study analyzed the productivity of cited journals in Psychology doctoral theses, which was measured after dividing the journals into four equal groups. The journal distribution as per the Bradford's Law revealed the ratio as 17:46:358 in Psychology, dispersion of journal titles in psychology didn't satisfy the Bradford's Law of Scattering. **Hussain, A and Swain, D. K (2011)** studied the top papers of computer science as reflected in Science Direct. Authors found that out of 495 top papers, three-authored articles are little ahead than two authored articles followed by four-authored articles and in respect of country wise productivity USA is at the top followed by UK, Taiwan, China, and Canada. It also revealed that European Journal of Operational Research occupied the top position followed by Computers in Human Behavior, and Pattern Recognition. **Nasir, J and Kumar, D (2010)** studied 4,875 citations in the doctoral dissertations submitted between 1990-2010 in the department of economics, Aligarh Muslim University, Aligarh, India to ascertain the authorship patterns, distribution of literature by format, language, country and decade, and ranking of journals by citation frequency,. Findings revealed that books were the most dominant form in which information is communicated in economics. The dominant language of the literature cited is English and the single author was dominant.

### 3.0 Methodology:

Keeping in view the objective of the present study necessary data has been collected from 38 doctoral theses submitted in the department of Management, Guru Jambheshwar University of Science & Technology, Hisar 2000-2009. The bibliographical references which were used by the researchers for completing the theses at the end of each chapter and end of the doctoral theses were taken as the source of data for the study. The collected data was classified, tabulated, presented, analyzed and interpreted with the help of tables. The study presents analysis of several parameters like authorship pattern, forms of literature, and finally a list of core journals was compiled and prepared on the basis of highly cited articles of the journals in the field of Management.

### 4.0 Objectives of the Study

The Main objectives of the study are:

1. To know about the subject-wise distribution of the theses;
2. To know about the forms of cited documents;
3. To know the authorship pattern of cited books and journals
4. To prepare a rank list of most cited journals by the management scholars;
5. To know about the obsolescence/ half-life of cited books and journals.

**5.0 Data Collection, Analysis and Interpretations**

The basis of this study is the citations collected from 38 doctoral dissertations in the field of Management at the Guru Jambheshwar University of Science & Technology, Hisar. The total number of citations are 5758 consisted 2851 journal citations from 677 cited journals.

Table 5.1: Subject-Wise Distribution of Doctoral Dissertations: Guru Jambheshwar University of Science & Technology, Hisar

Sr. No.	Subject Of the Doctoral Dissertations	No. of doctoral dissertations	Percentage of doctoral dissertations	Cumulative No. of doctoral dissertations	Percentage of Cumulative No. of doctoral dissertations
1	Finance Management	11	28.95	11	28.95
2	Marketing Management	7	18.42	18	47.37
3	Human Resource Management	15	39.47	33	86.84
4	Operations Management	0	0.00	33	86.84
5	International Business Management	3	7.89	36	94.74
6	Pharmaceutical Management	2	5.26	38	100.00
7	Retail Management	0	0.00	38	100.00
Total		38			

**Table 5.1** reveals that out of total 38 doctoral dissertations, 33 (86.84%) doctoral dissertations are on finance management, marketing management and human resource management. 3 (7.89%) doctoral dissertations are on international business management and 2 (5.26%) doctoral dissertations are on pharmaceutical management while no research work has been done on other areas of management such as operations management and retail management.

Table 5.2: Format of Cited Documents: Guru Jambheshwar University of Science & Technology, Hisar

Sr. No.	Bibliographical Forms	No. of Citations	Cumulative Citations	Percentage	Cumulative Percentage	Rank No.
1	Books	1832	1832	31.82	31.82	2
2	Journals	2851	4683	49.51	81.33	1
3	Reports	226	4909	3.92	85.26	4
4	Reviews/ Newspapers	205	5114	3.56	88.82	5
5	Magazines	273	5387	4.74	93.56	3
6	Conference Proceedings / Seminars/ Discussion Papers/ Research Papers/ Working Papers etc.	156	5543	2.71	96.27	6
7	Websites	41	5584	0.71	96.98	9
8	Reference Books/ Glossaries/ Dictionaries etc.	101	5685	1.75	98.73	7
9	Theses/ Dissertations and Unpublished Sources	26	5711	0.45	99.18	10
10	Unidentified	47	5758	0.82	100.00	8
Total		5758				

**Table 5.2** Deals in all 5758 citations of 38 theses submitted in the Guru Jambheshwar University of Science & Technology, Hisar distributed among different bibliographical forms. The above given table reveals that

Journals are the most used bibliographic form which holds the first position among all sources accounting for 2851 citations (49.51%) of the total citations (5758). The total number of citations from Books are 1832 (31.82%); Magazines with 273 citations (4.74%); Reports with 226 citations (3.92%); Reviews/ Newspapers with 205 citations (3.56%); Conference Proceedings/ Seminars/ Discussion Papers/ Research Papers/ Working Papers etc.. with 156 citations (2.71%); Reference books/ Glossaries/ Dictionaries etc. with 101 citations (1.75%); Unidentified forms with 47 citations (0.82%); Websites with 41 citations (0.71 %;) and Theses/ Dissertations and Unpublished Sources with 26 citations (0.45%) respectively.

Table 5.3: Authorship Pattern of Cited Journals And Books: Guru Jambheshwar University of Science & Technology, Hisar

Sr. No.	Authorship Pattern	Journals				Books			
		No. of Citations	Percentage of Citations	Cumulative Citations	Percentage of Cumulative Citations	No. of Citations	Percentage of Citations	Cumulative Citations	Percentage of Cumulative Citations
1	Single	1319	46.26	1319	46.26	1166	63.65	1166	63.65
2	Joint	870	30.52	2189	76.78	464	25.33	1630	88.97
3	Three	341	11.96	2530	88.74	118	6.44	1748	95.41
4	Four	198	6.94	2728	95.69	45	2.46	1793	97.87
5	More than four	123	4.31	2851	100.00	39	2.13	1832	100.00
Total		2851				1832			

DC = 0.54 CC= 0.32

DC = 0.36

CC = 0.21

**Table 5.3** depicts the authorship pattern of cited journals and books by the Guru Jambheshwar University of Science & Technology, Hisar. Out of the total citations 5758 the journals account for 2851 forming 49.51% of the total citations while books account for 1832 forming 31.82% of the total citations. Authorship pattern of journals indicates that out of the total number of 2851 Journal Citations, 1319 are by single author (46.26%), followed by 870 citations (30.52%) by joint authors, 341 citations by three authors (11.96%), 198 citations by four authors (6.94%) and 123 citations by more than four authors (4.31). Degree of Collaboration of cited journals is 0.54 which indicates the extent of collaboration was popular among authors. Collaborative co-efficient is 0.32 which indicates less collaboration between authors.

Authorship pattern of book citations shows that out of the total number of 1832 Book Citations, 1166 are by single author (63.65%), followed by 464 citations (25.33%) by joint authors, 118 citations by three authors (6.44%), 45 citations by four authors (2.46%) and 39 citations by more than four authors (2.13%). Degree of Collaboration of cited journals is 0.36 which indicates the extent of collaboration was not much popular among authors. Collaborative co-efficient is 0.21 which indicates less collaboration between authors.

Table 5.4: Ranking of Journals: Guru Jambheshwar University Of Science & Technology, Hisar

Sr. No.	Rank No.	Title of Journal	No. of Citations	Percentage of Citations	Cumulative Citations	Cumulative Percentage
1	1	Economic and Political Weekly	571	20.03	571	20.03
2	2	University News Journal	56	1.96	627	21.99
3	3	Journal of Applied Psychology	54	1.89	681	23.89
4	4	Journal of Finance	46	1.61	727	25.50
5	5	Yojana	34	1.19	761	26.69
6	6	Vikalpa	33	1.16	794	27.85
7	7	Finance India	32	1.12	826	28.97
8	7	Journal of Marketing	32	1.12	858	30.09

9	8	Journal of Finance	30	1.05	888	31.15
10	9	Journal of Business Venturing	29	1.02	917	32.16
11	10	Indian Management Journal	28	0.98	945	33.15
12	11	Productivity	27	0.95	972	34.09
13	12	Journal of Advertising	26	0.91	998	35.01
14	12	Indian Journal of Marketing	26	0.91	1024	35.92
15	13	International Journal of Bank Marketing	25	0.88	1049	36.79
16	13	Chartered Secretary	25	0.88	1074	37.67
17	14	Journal of Financial Economics	24	0.84	1098	38.51
18	15	Journal of Business Standard	22	0.77	1120	39.28
19	16	Journal of Entrepreneurship Theory and Practice	20	0.70	1140	39.99
20	16	Journal of Human Relations	20	0.70	1160	40.69
21	17	Journal of Education Planning and Administration	19	0.67	1179	41.35
22	17	Journal of Consumer Research	19	0.67	1198	42.02
23	17	Management Accounting	19	0.67	1217	42.69
24	18	Prajanan	18	0.63	1235	43.32
25	18	Journal of Administrative Science Quarterly	18	0.63	1253	43.95
26	18	Journal of Personnel Psychology	18	0.63	1271	44.58
27	19	Packaging India	17	0.60	1288	45.18
28	19	Management Accountant	17	0.60	1305	45.77
29	19	Academy of Management Journal	17	0.60	1322	46.37
30	20	Journal of Business	16	0.56	1338	46.93
31	20	Indian Economic Journal	16	0.56	1354	47.49
32	21	ICAFI Journal of Applied Finance	15	0.53	1369	48.02
33	21	Human Resource Management Journal	15	0.53	1384	48.54
34	21	Indian Journal of Commerce	15	0.53	1399	49.07
35	21	Chartered and Financial Analyst	15	0.53	1414	49.60
36	22	Journal of Service Research	14	0.49	1428	50.09
37	22	Journal of Higher Education	14	0.49	1442	50.58
38	22	Journal of Portfolio Management	14	0.49	1456	51.07
39	22	Business India	14	0.49	1470	51.56
40	22	ICFAI Journal of Bank Management	14	0.49	1484	52.05
41	23	Chartered Accountant	13	0.46	1497	52.51
42	24	Journal of Financial Management	12	0.42	1509	52.93
43	24	Advertising and Marketing	12	0.42	1521	53.35
44	24	Journal of Decision Science	12	0.42	1533	53.77
45	24	Indian Ports	12	0.42	1545	54.19
46	25	Personnel Journal	11	0.39	1556	54.58
47	25	IBA Bulletin	11	0.39	1567	54.96
48	25	Indian Journal of Industrial Relations	11	0.39	1578	55.35
49	25	Journal of Management Science	11	0.39	1589	55.73
50	26	Journal of Small Business Management	10	0.35	1599	56.09
51	26	Fortune India	10	0.35	1609	56.44

52	26	Journal of Entrepreneurship and Regional Development	10	0.35	1619	56.79
53	27	The Economic Times	9	0.32	1628	57.10
54	27	Journal of Kurukshetra University	9	0.32	1637	57.42
55	27	Journal of Vocational Education and Training	9	0.32	1646	57.73
56	27	Training and Development Journal	9	0.32	1655	58.05
57	27	Journal of Advertising Research	9	0.32	1664	58.37
58	27	Business World	9	0.32	1673	58.68
59	28	Journal of Business	8	0.28	1681	58.96
60	28	Academy of Marketing Science	8	0.28	1689	59.24
61	28	International Journal of Selection and Assessment	8	0.28	1697	59.52
62	28	Journal of Financial and Quantitative Analysis	8	0.28	1705	59.80
63	28	Financial Analyst's Journal	8	0.28	1713	60.08
64	28	Business Today	8	0.28	1721	60.36
65	28	Business Line	8	0.28	1729	60.65
66	28	Journal of Accounting Research	8	0.28	1737	60.93
67	28	Journal of Occupational Psychology	8	0.28	1745	61.21
68	28	Journal of Applied Corporate Finance	8	0.28	1753	61.49
69	28	Quarterly Journal of Economics	8	0.28	1761	61.77
70	28	Journal of Management	8	0.28	1769	62.05
71	29	Journal of Marketing Management	7	0.25	1776	62.29
72	29	Journal of Marketing Research	7	0.25	1783	62.54
73	29	Hindu Business Line	7	0.25	1790	62.79
74	29	Indian Journal of Commerce	7	0.25	1797	63.03
75	29	Journal of Research in Higher Education	7	0.25	1804	63.28
76	29	Business Horizons	7	0.25	1811	63.52
77	29	Public Administration Quarterly Journal	7	0.25	1818	63.77
78	29	Southern Economic Journal	7	0.25	1825	64.01
79	29	American Economic Review	7	0.25	1832	64.26
80	29	Journal of Management Development	7	0.25	1839	64.50
81	29	Research in Personnel and Human Resource Journal	7	0.25	1846	64.75
82	29	Journal of Managing Service Quality	7	0.25	1853	64.99
83	30	Organizational Dynamics	6	0.21	1859	65.21
84	30	Journal of Organizational Behaviour and Human Performance	6	0.21	1865	65.42
85	30	Indian Journal of Economics	6	0.21	1871	65.63
86	30	Indian Economic Journal	6	0.21	1877	65.84
87	30	Psychological Review	6	0.21	1883	66.05
88	30	Journal of Indian School of Political Economy	6	0.21	1889	66.26
89	30	The Link	6	0.21	1895	66.47
90	30	ICFAI Journal of Applied Finance	6	0.21	1901	66.68
91	30	Business Weekly	6	0.21	1907	66.89
92	30	Power Line	6	0.21	1913	67.10
93	30	European Journal of Marketing	6	0.21	1919	67.31

94	30	Journal of Indian Shipping	6	0.21	1925	67.52
95	30	Academy of Management Review	6	0.21	1931	67.73
96	30	Journal of Accounting and Finance	6	0.21	1937	67.94
97	30	Indian Journal of Training and Development	6	0.21	1943	68.15
98	31	Abhigyan	5	0.18	1948	68.33
99	31	Journal of Social Welfare	5	0.18	1953	68.50
100	31	Sweden Journal of Marketing	5	0.18	1958	68.68
101	31	European Journal of Operational Research	5	0.18	1963	68.85
102	31	Marketing Week	5	0.18	1968	69.03
103	31	RBI Bulletin	5	0.18	1973	69.20
104	31	Journal of Small Business and Entrepreneurship	5	0.18	1978	69.38
105	31	Journal of Advertising Age	5	0.18	1983	69.55
106	31	Journal of Indian Institute of Bankers	5	0.18	1988	69.73
107	31	Psychological Bulletin	5	0.18	1993	69.91
108	31	Journal of Personality and Social Psychology	5	0.18	1998	70.08
109	31	Journal of Portfolio Management	5	0.18	2003	70.26
110	31	Journal of Entrepreneurship	5	0.18	2008	70.43
111	31	Journal of Managerial Psychology	5	0.18	2013	70.61
112	31	Journal of Personality and Social Psychology Bulletin	5	0.18	2018	70.78
113	31	Journal of Managerial Psychology	5	0.18	2023	70.96
114	----	Other (564) Journals	828	29.04	2851	100.00
Total			2851			

**Table 5.4** gives a rank list of periodicals of Guru Jambheshwar University of Science & Technology, Hisar which indicates that among 677 periodicals cited only sixty three periodicals account for more than 60% (i.e. 60.08%) of the citations and therefore they may be considered as core periodicals. Table also indicates that “Economic and Political Weekly” is the first most frequently cited periodical i.e. 20.03%.

**Table 5.4.1: Verbal Formulation of The Bradford’s Law of Scattering: Guru Jambheshwar University of Science & Technology, Hisar**

Number of Zones	Number of Journals	Number of Journals Citations
Zone 1 (Nuclear)	12	972
Zone 2	82	953
Zone 3	583	926

**Table 5.4.1** shows the journal distribution as per the Bradford’s Law which reveals the ratio as **12:82:583** in Guru Jambheshwar University of Science & Technology, Hisar. It is evident from the above ratio that the number of journal titles in each zone is not increasing geometrically. Hence it is concluded that the dispersion of journals’ titles in Management does not satisfy the verbal formulation of Bradford’s Law of Scattering.

**Table 5.5: Chronological Distribution of Books and Journals Citations: Guru Jambheshwar University of Science & Technology, Hisar**

Sr. No	Time Interval	Books				Journals			
		No. of Citations	Percentage of Citations	Cumulative Citations	Cumulative Percentage	No. of Citations	Percentage of Citations	Cumulative Citations	Cumulative Percentage
1	1919 and Before	5	0.27	5	0.27	0	0.00	0	0.00

2	1920 - 1929	6	0.33	11	0.60	1	0.04	1	0.04
3	1930 - 1939	6	0.33	17	0.93	3	0.11	4	0.14
4	1940 - 1949	4	0.22	21	1.15	6	0.21	10	0.35
5	1950 - 1959	27	1.47	48	2.62	13	0.46	23	0.81
6	1960 - 1969	89	4.86	137	7.48	58	2.03	81	2.84
7	1970 - 1979	219	11.95	356	19.43	209	7.33	290	10.17
8	1980 - 1989	348	19.00	704	38.43	470	16.49	760	26.66
9	1990 - 1999	655	35.75	1359	74.18	1063	37.29	1823	63.94
10	2000 - 2009	473	25.82	1832	100.00	1028	36.06	2851	100.00
Total		1832				2851			

**Table 5.5** shows chronological distribution of Books and Journals citations of Guru Jambheshwar University of Science & Technology, Hisar. The books citations are 1832 in number and they cover the period before 1919 to 2009. This time period has been divided into 10 groups according to the decades of the century. From this grouping it is found that the decade beginning with 1990-99 has the maximum number of citations 655 (35.75%) out of the total books citations and the decade beginning with 1920-1929 and 1930-1939 have only 6 (0.33%) citations each. The data reflected in table also shows that the books published during 1990-99 are mostly used by the scholars. However, the number of citations goes on gradually decreasing while moving towards the oldest period. It is also revealed that the scholars use current journals more than books, the analysis shows that the scholars usually use articles from the current journals.

**Table 5.6.1: Obsolescence/ Half-Life of Documents: Guru Jambheshwar University of Science & Technology, Hisar- Books**

Sr. No.	Period	No. of Citations	Percentage of Citations	Cumulative Citations	Cumulative Percentage	Citations in 'tail' T
1	0 - 10	857	46.78	857	46.78	1832
2	11 - 20	455	24.84	1312	71.62	975
3	21 - 30	322	17.58	1634	89.19	520
4	31 - 40	116	6.33	1750	95.52	198
5	41 - 50	53	2.89	1803	98.42	82
6	51 - 60	9	0.49	1812	98.91	29
7	61 - 70	6	0.33	1818	99.24	20
8	71 - 80	5	0.27	1823	99.51	14
9	81 - 90	6	0.33	1829	99.84	9
10	91 - 100	1	0.05	1830	99.89	3
11	Above 100	2	0.11	1832	100.00	2
Total		1832				

**Table 5.6.1** shows the obsolescence/ half-life of books in Management at Guru Jambheshwar University of Science & Technology, Hisar. The obsolescence study of books is based on a total number of 1832 citations. These citations are distributed in 11 periods of 10 years each. The obsolescence graph shows the median citation age of books citations as 11 years. This means that 50 per cent of the books used by a research scholar were published during the last 11 years prior to the year of submission of his/her thesis. This also shows that though a research scholar has used books belonged to the last 100 years, yet 50 per cent of the total books used belonged to the period of 11 years, prior to the year of submission of his/her thesis. This implies that a library should not procure books 11 years after their publication and may also maintain a separate stack for such old books as these are not likely to be in active use.



**Obsolescence/ Half-Life of Documents: Guru Jambheshwar University of Science & Technology, Hisar - Books**

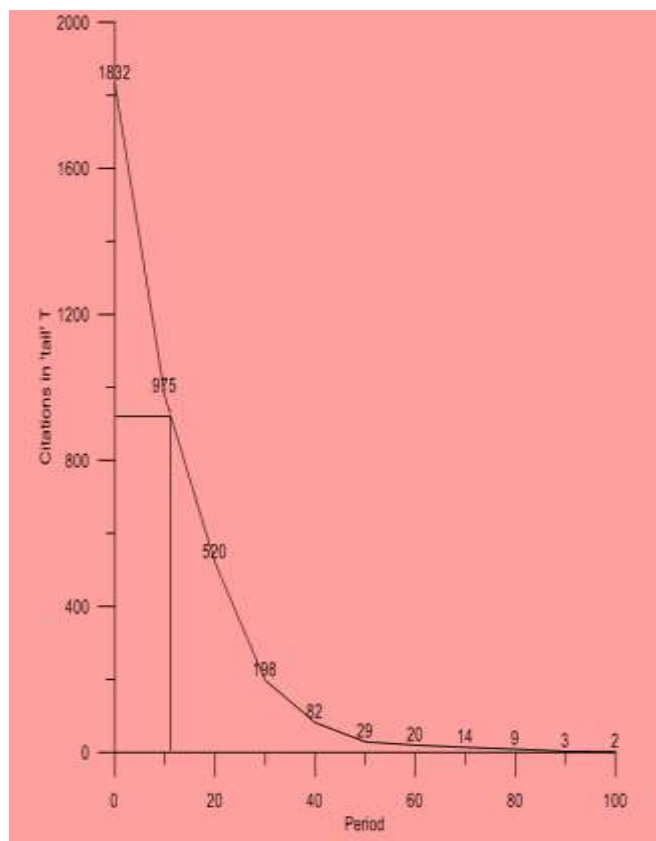
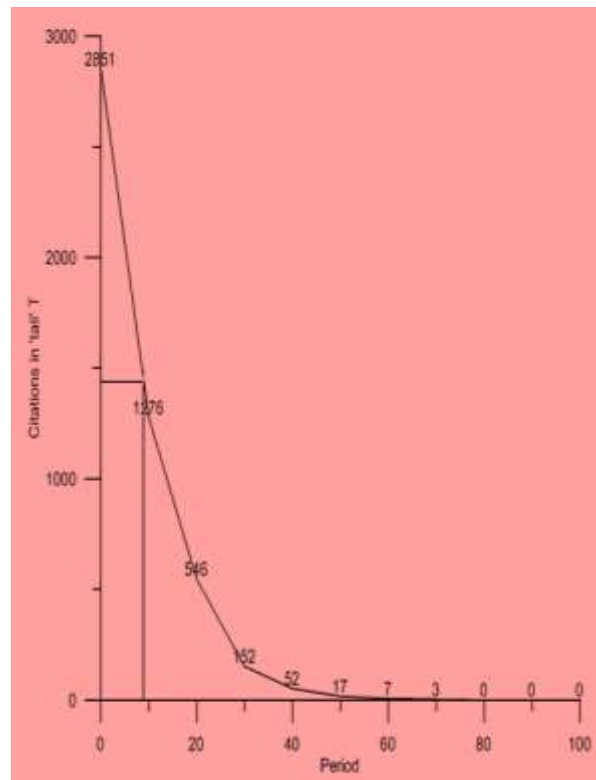


Figure 5.6.1

**Table 5.6.2: Obsolescence/ Half-Life of Documents: Guru Jambheshwar University of Science & Technology, Hisar- Journals**

Sr. No.	Period	No. of Citations	Percentage of Citations	Cumulative Citations	Cumulative Percentage	Citations in 'tail' T
1	0 - 10	1575	55.24	1575	55.24	2851
2	11 - 20	730	25.61	2305	80.85	1276
3	21 - 30	394	13.82	2699	94.67	546
4	31 - 40	100	3.51	2799	98.18	152
5	41 - 50	35	1.23	2834	99.40	52
6	51 - 60	10	0.35	2844	99.75	17
7	61 - 70	4	0.14	2848	99.89	7
8	71 - 80	3	0.11	2851	100	3
9	81 - 90	0	0.00	2851	100	0
10	91 - 100	0	0.00	2851	100	0
11	Above 100	0	0.00	2851	100	0
Total		2851				

**Table 5.6.2** shows the obsolescence/ half-life study of journals which is based on a total number of 2851 citations. These citations are distributed in 11 periods of 10 years each. By plotting the obsolescence graph, it is found that the median citation age of journals citations is 9 years, which means that 50 per cent of the journals referred to by a research scholar were published during the last 9 years prior to the year of submission of his/her thesis. This also means that though a research scholar consults journals pertaining to the last 100 years, 50 per cent of the total number of journals used are 9 years old. This also implies that the library may not procure back volumes of journals which are more than 9 years old. They may also maintain separate stacks for shelving the back volumes older than 9 years, because these are not in active use.



### Journals

Figure 5.6.2

### 6.0 Conclusion

Citation analysis in any research activities has become one of the popular methods to study subject relationships, authorship pattern, impact, publication trends, and to identify core journal in a particular subject field or for a particular scientific community.

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