

CITATION ANALYSIS OF DOCTORAL THESES SUBMITTED TO DEPARTMENT OF AGRONOMY IN UNIVERSITY OF AGRICULTURAL SCIENCES DHARWAD: OBSCOLESCENCE STUDY

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Abstract: Citation analysis is a helpful tool in obtaining the users approach to seek information for their requirement. Obscure rate of literature can also obtain through citation analysis. The present study is to find the obscure rate of publications in the field Agronomy by using citation analysis of doctoral theses submitted to the department of Agronomy in University of Agricultural Sciences Dharwad. Theses submitted in the duration 1987 to 2013 are taken for the study. There are total 92 theses yielding 16976 citations. Analysis is also done to find out the Authorship pattern, Chronological distribution, forms of the information resources cited by researchers in their thesis.

Keywords: Citation Analysis, Doctoral theses, obscure study

1.0 Introduction

The growing rate of knowledge and knowledge resources is a biggest and toughest challenge to pick out the required content for the library. The other side the growing rate in price of resources made librarian to be selective in procuring resources for his/her library. Librarians conduct many user studies and use studies to gather information need of library users. Citation analysis of student assignments, master dissertations, Doctoral dissertation is a tool to avail information need. ¹Citation is the representation of a decision made by author who wants to show the relation between the documents he is writing and the work of another (at a particular point). Shaw (1979) stated that the citation establishes relation among authors who is a measure of the extent to which they communicate indirectly through the literature. The References and Citations are used synonymy the precise difference between these terms was given by [Egge&Rousseau (1990)] Citation implies the relationship between a part or whole of the cited document and part or a whole of the citing document. References are taken as the acknowledgement.

Agronomy is the branch of agricultural sciences which involves science and technology for production of plants. The areas of Agronomy are plant genetics, plant physiology, meteorology and soil science. It is application of a combination of sciences like biology, chemistry, economics, ecology, earth science and genetics. Agronomy deals with the issues of producing food, creating healthier food, managing environmental impact of agriculture and extracting energy from plants. Agronomist who involved in the study of Agronomy are specialize in the areas of crop rotation, irrigation, drainage, plant breeding, plant physiology, soil classification. Soil fertility, weed control and pest control. The University of Agricultural Sciences, Dharwad was established on October 1, 1986. The University has 5 Colleges, 30 Research Stations, 6 Extension Education Units, 5 KrishiVigyanKendras and ATIC.

2.0 Review of Related Literature

Goodenalyzes the Ph.D. dissertations of the Ohio State University Chemistry Department between 1996 and 2000. The conclusion reached is that only 12 journals are necessary to cover 50 percent of the references and demonstrates that most of the citations correspond to articles published in scientific journals.

Haycock analyzes the citations in dissertations on Education Sciences, finished between 2000 and 2002 to establish which are the journals that were most frequently used as well as the relationship between monographs and articles of scientific journals.

In the year 1994 Mrs Poornimadevi Thoidingjam studied citation analysis of Ph. D. Theses in social sciences accepted by Guahati University in the duration 1970 – 80. Mr. Prashant Deshmukh analyzed citations appended on Ph. D .theses submitted to Punjabrao KrishiVidyapeeth during 1990- 1994.

3.0 Objectives

1. To know the research output of Agronomy Department in UAS Dharwad
2. To study various forms of information sources approached by researchers of UAS Dharwad.
3. To study age, geographical distribution, authorship pattern, language of citations in doctoral theses submitted to UAS Dharwad
4. To study the Obsolescence rate of Agronomy Journals and Books

4.0 Scope

The present study is to derive the obsolescence rate of publications in the field of Agronomy. Then methodology opted is citation analysis of doctoral theses submitted to the department of Agronomy at University of Agricultural Sciences Dharwad. in the duration 1987 to 2013 . Total number of theses is 92 having 16976 citations.

5.0 Methodology

The data for the study will be collected from the doctoral dissertations submitted to the department of Agronomy in University of Agricultural Sciences Dharwad. The title page and the references given at the end of thesis will be photocopied. The demographic details of doctoral dissertations and citations will be entered in MS excel. Unique identification number will be given to each doctoral thesis and its corresponding citations. The entered data in MS excel will be analyzed by the structure of the subject, distribution of documents by country of origin, language, author characteristics and document characteristics to meet the objectives of the study. The interpretation of data findings of study is recorded.

6.0 Results and Analysis

6.1 Research Output from Department of Agronomy in UAS Dharwad

The following table 1 reveals the rate of Doctoral awards or research output from the department of Agronomy in UAS Dharwad.. The whole time span from 1987- 2013 is divided into small 7 time intervals which has length of four years. The highest Ph. Ds are awarded in the duration 2010- 2013 ie. 20 theses submitted for Ph. D. award in the university. Though the university started in the year 1986 the first phd is awarded in the year 1987. 8 theses submitted in the duration 1987 – 1990. 6 theses in the duration 1991 – 1994, 14 in the duration 1995-1998, 16 theses in 1999-2000, 10 in 2002-2005 and 18 in 2006 – 2009. This reveals that on an average minimum 2 Ph.Ds. awarded every year in the department of Agronomy.

The table 1 also contains the data about citations appended in theses. The average number of citations cited in theses submitted in the duration 1987- 1990 is 170, 1991-1994 is 145, 1995- 1998 is 185, 1999- 2001 is 175, 2002- 2005 is 177, 2006- 2009 is 190 and 2010 to 2013 is 209. The average number of citations shared by each thesis is 185.

Table 1 Year Wise distribution of Doctoral Theses in Agronomy

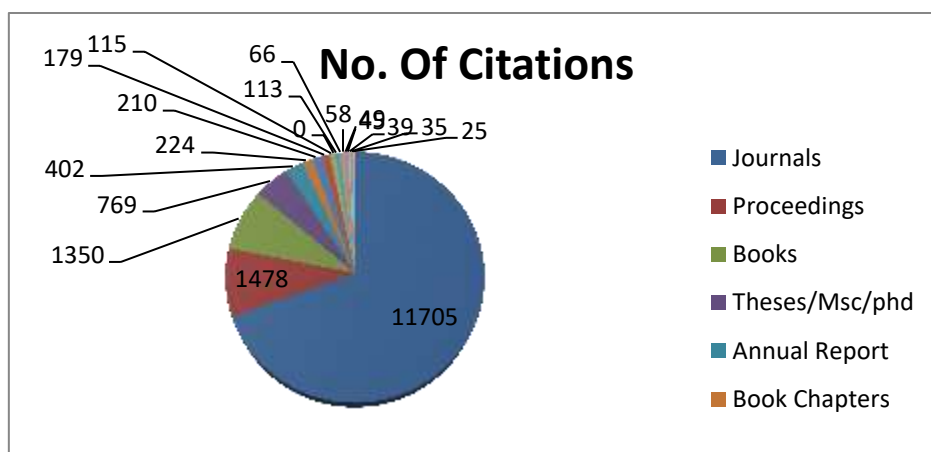
SN.	Year	No. Of Theses	Percentage	Ranking	Number of Citations	Average Number of Citations per Thesis
1	1987- 1990	8	8.7	6	1358	169.75
2	1991-1994	6	6.4	7	872	145
3	1995-1998	14	15.2	4	2583	184.5
4	1999-2001	16	17.4	3	2804	175.25
5	2002-2005	10	10.9	5	1774	177.4
6	2006-2009	18	19.6	2	3411	189.5
7	2010-2013	20	21.8	1	4174	208.7
	Total	92	100		16976	185

6.2 Form wise distribution of citations

Agronomy scientists approached wide variety of information resources for their research. The various types of resources and number of citations are given in the following table Table. 2 The data reveals that researchers cited the journal/ periodical articles most frequently. There are 11705 journal article citations among 16976 and 1350 citations cited from books. Proceedings of conferences/seminars/meetings are also cited more frequently which is ranked second.

Table 2: Form Wise Distribution of Citations

Type of Resource	No. Of Citations	Percentage	Ranking
Journals	11705	69%	1
Proceedings	1478	8.7%	2
Books	1350	7.9%	3
Theses/Msc/phd	769	4.5%	4
Annual Report	402	2.4%	5
Book Chapters	224	1.31%	6
E- Resources	210	1.24%	7
Abstract	179	1%	8
Reports	115	0.7%	9
Other Resources Patents/statistical reports/standards/	114	0.7%	10
Report	113	0.7%	11
Progress report	66	0.4%	12
Research Report	58	0.3%	13
Manual	49	0.3%	14
Project Report	45	0.3%	15
Gov publications	39	0.2%	16
Monograph	35	0.2%	17
Hand book	25	0.15%	18
Total	16976	100%	



6.3 Authorship pattern

Authorship pattern is the study of cited publications is prepared by single authored?or multiple authored?. The following table-3 shows the researchers or scientists believe in collaboration only (4507) 26.54% of cited literature is single authored. Double authored citations ranks first it shares 5052 citations (29.8%) Three authors is in third place of ranking which shares 3699 (21.8%) of citations. Some publications found authored by more than 12 or thirteen but they are counted in the more than seven authors category. The publications published by name of institution/organization/company is categorized as Corporate authorship, there are 492(2.9%) citations come under this category.

Table 3 Authorship Pattern

SN.	Number of Authors contribution	No. of Citations	Percentage	Ranking
1	Single	4507	26.54	2
2	Double	5052	29.8	1
3	Three Authors	3699	21.8	3
4	Four Authors	2022	11.9	4
5	Five Authors	739	4.35	5
6	Six Authors	228	1.34	7
7	Seven Authors	123	0.7	8
8	More than Seven Authors	114	0.67	9
9	Corporate Authors	492	2.9	6
	Total	16976	100	

6.4 Chronological Distribution of Citations

The table 4 describes the chronological distribution of citations. The data reveals that the researchers referred recent publications for their research. From the data highest citations ie 5239 ie 31 % of citations are published in the duration 1991- 2000. The usage of publications is declined as it becomes old. The publications which are published in the duration 1881 to 1950 are rarely used. The usage percentage is 1.5%.

Table 4 Chronological Distribution of citations

Sl. No	Years	No. of Citations	Percentage	Rank
1	1881- 1950	260	1.5	6
2	1951-1960	466	2.7	5
3	1961-1970	1318	7.7	
4	1971-1980	2622	15.4	3
5	1981-1990	4664	27.5	2
6	1991-2000	5239	31	1
7	2001-2013	2407	14.2	4
	Total	16976	100	

6.5 Obsolescence Study:

Obsolescence study or Age study of publications is one of the common observation in citation analysis. It describes the decline in usage of publication or citations over a time period. The following table 5 represents the obsolescence of Journals and Book citations. The complete 11705 journal article citations and 1350 Book Citations divided into 11 time span having 10 years of length.

Table - 5 Age Wise Distribution of Citations

Sl. No	Age of Citations	No. of Citations	Journals	Percentage	Books	Percentage
1	0 to 9	6286	4228	36.13%	234	17.34%
2	10 to 19	5510	3901	33.33%	363	26.90%
3	20 to 29	2942	2056	17.57%	321	23.90%
4	30 to 39	1353	903	7.70%	257	19.04%
5	40 to 49	548	353	3.01%	142	10.52%
6	50 to 59	193	160	1.37%	16	1.20%
7	60 to 69	59	50	0.43%	3	0.23%
8	70 to 79	40	26	0.24%	6	0.50%
9	80 to 89	25	16	0.14%	3	0.00%
10	90 to 99	11	10	0.09%	0	0.00%
11	100+	9	2	0.02%	5	0.37%
		16976	11705	100.00%	1350	100.00%

The table 5 reveals that recent journals and books are most approached by researchers. The citations of age 0- 9 years are more. There 6286 citations of age 0- 9 among those 4228 (36.13 %) are journal articles and 234 (

17.34 %) books. The data gathered shows that 87% citations come under the age group 0- 29. The remaining 13% of citations come under the age group 30 to 100+. This proves that there is considerable decline in usage of publication when it gets old.

The half-life of Journals and Books cited by Agronomy scientists in their doctoral dissertations is calculated median year of publication ie 52. 5 years and mean year of journals and books is 53.009

7.0 Findings and Conclusion

Citation analysis is one of the tool in bibliometrics, scientometricinformetric studies. The application of citation analysis in libraries will be used in collection management. The citation counting will help in procuring the books, periodicals and also in weeding process. It is found from the study that

1. Researchers of Agronomy cited journal articles most frequently. The 69% of total citations ie 11705 are the journal articles. Proceedings of conference/seminars/workshops meetings are also referred by scientists for their study which ranked second 8.7% 1478 citations and 1350 (7.9%) citations from Books are cited in theses. Researchers cited Technical reports, manuals M. Sc. And Doctoral dissertations etc. for their study.
2. From citations cited in the Agronomy research scholar theses observed that the studies or literary work is done with collaboration. The 4507 citations i.e 26.54 % of citations are single authored and remained are double authorship, with three authors four authors etc.
3. It is observed from the results of analysis the researchers prefer recent literature. The usage declines over the time period. The half life of Journals and Books are calculated for Agronomy ie median of the years is 52.5 years and mean of the years is 53.9years.

Obsolescence studies helps in weeding of outdated materials which makes the place for new procurements also avoids the unnecessary noise in retrieval of information.

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