

BIBLIOMETRIC ANALYSIS OF LITERATURE CITED IN THE PH. D. THEIS IN ZOOLOGY, 2002-2008

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Abstract

The study is based on the bibliometric analysis of documents used by the researches in Ph. D. thesis of zoology has submitted in DAVV during year 2002-08. To identify the nature of document used by researches, author ship trend and collaboration of author in publication, ranking of Journal, preferred by research scholars. Analysis of data depicts that out of 3327 citations are for books, followed by journal and thesis and monographs documents. It is clear that the researchers in zoology still prefer to refer books more in number when compared to other bibliographical forms of documents. Finding out the core periodicals in any subject is the primary concern of any bibliometric study. According an effort has been made to find out the core periodicals in zoology a based on the total count each periodical had in thesis submitted by P.H.D. scholars. In fact the Bradford's law states that large number of article will get published in fewer journals, which will be considered as core in any subject.

KEY WORDS : Bibliometirc study, Citation analysis, Bibliometric analysis of PH. D. Thesis in Zoology.

Introduction:

The term Bibliometrics was introduced in 1969 to indicate a new discipline, which employs quantitative methods for analyzing various aspects of written document. Over the years this subject has been growing and gaining the grounds in libraries and information centers all over the world. The subject is also very popular among the research scholars for research, because in every field of knowledge the research scholars are interested in doing research in theoretical aspect of subject or mathematical and statistical analysis of a particular area of selected problem.

Bibliometrics is the quantitative evaluation of literature. Bibliometric analysis is used in science and technology policy arena to determine the knowledge outputs of national systems of innovation. It helps to monitor growth of literature and patterns of research enabling monitoring. Scientific productivity is influenced by a large number of factors, including individual characteristics such as age, gender, psychological traits, and educational background, as well as structural features like funding, institutional context, and the organization of the actual research.

Need of Study:

The basic need for the present study is to the information use pattern of the researchers in Zoology and to improve collection development measures of the library, so that suitable measures can be initiated.

1. Librarians are like managers in industries and need, objective data to take timely decision librarian can use reference statics.
2. Cost of library collection, utility etc. needs to be continuously evaluation.
3. Utility/Presence of documents and non-book materials available in the library need to be assessed.
4. Library performances indicator to be discussed.
5. Academic programmers in the case of university libraries and information requirement need regular assessment for better collection development policies.
6. Distribution of publication of author become basic Bibliometric data.

Objective of Study:

To fulfil the above need, the following are the objective for the present study.

1. To identify of documents used by the researches in Ph. D. thesis of zoology has submitted in DAVV during year 2002-08.
2. To identify the core periodicals in Zoology, Which are of high relevance for the school of Zoology.
3. To identify the nature of document used by researches.
4. To know length of articles.

5. To know illustration used in citation of Ph. D. in Zoology.
6. To know authorship pattern in the field of Zoology.
7. Annual distribution and growth of literatures used.
8. To know the ranking of author, publication and place.
9. Author ship trend and collaboration of author in publication.
10. To determine the ranking of Journal, preferred by research scholars.
11. To study the decade-wise distribution of citation of Journal.

Review of Literature:

Nandi, Amitava and Bandyopadhyay (2008)¹ – “Indian Economic Review” published by Delhi School of Economics, University of Delhi has played a key role in the dissemination of fundamental and applied knowledge of Economics since 1952. This paper finds out the result of a bibliometric study covered in the issues of Indian Economics Review during 1998-2002. It examines authorship pattern, the degree of collaboration among author and geographical distribution of the author. **Dixit & Katare, (2007)**²- Highlights the research trend of cotton-scientists by studying the patterns of articles published in Journal of the Indian Society of Cotton Improvement for the period 1995-2004. Patterns related to authorship bibliographic forms, citations, contributing institutions and subject were analyzed, based on these details. Raining of core journals (Indian & foreign) in the field of cotton sponce has also been done. **Mini Devi (2007)**³- The article highlights the significance of Bradford law in today’s information age. The classical law is applied to the toxicology Literature collected from the international database, Toxicology Information Online (TOXLINE), and its validity on that data was tested. The data was found unfit for the law. Hence a new formulas is derived and applied which was found fit for the study. **Parvathamma and Gobbur (2007)**⁴ – Plastics is a product of polymers, which finds a wide variety of applications. Bibliometric analysis of 64444 publications related to Plastics, as indexed in Biological Abstracts on CD, during 1998-2002 was undertaken. Papers constitute majority of the contribution and degree of collaboration amount to 0.81 this shows that team research is prevalent in the area of Plastics. **Mohd. Nazim, Moin Ahmad (2007)**⁵ This study presentation a bibliometric analysis of scientific output in the area of Information literacy the aim being to offer an overview of research trends in this field and characterize its most important aspects and their evolution over the last quarter of the 20th century. **Sevukan M, Sharma (2007)**⁶- Research output in plant science of faculties in central universities of India has been analyses bibliometrically. The study analysis a total of 34.8 bibliographic records of plant sciences retrieved from ISI science Citation Index- Extended (SCIE1) for a period of 10 years from 1997 to 2006. **K. R. Ranghavan (2007)**⁷- Bibliometric analysis of 779 articles published, along with citation in five volume 37 (2000) to 41 (2004) has been carried out. The growth and popularity of the journal is showing a steady upward trend, though contribution from the developed nations from only 15% of the total. **Shafi, Rather, Ahmad, Jan Rosy and shah Jeelani (2007)**⁸ - This paper examines the articles published in on-line D-Lib magazine for collaboration and productivity with in different facts of digital / electronic libraries. The study carried out for this paper found that collaborative research is given priority over solo research. The degree of collaboration is found to be 0.66. The study further reveals that most of the contribution

comes from the USA and Germany while fact-wise distribution of articles depicts that most of the articles cover digital libraries and preservation followed by metadata. / cataloguing. **Rajendiran, P. and Parihar Y.S. (2007)⁹** – Identifies various bibliometric indicators of articles published by the Indian researchers in the field of laser science and technology during the period 1995-2005. The Scopus the indexing/abstracting online database is the main source for this study. The bibliometric techniques, such as Bradford's law, Lokta's law and the Subramanian formula were employed respectively to measure quantitative distribution of literature in sources for this study.

Methodology:

The literature cited in the Ph.D. thesis of the subject zoology is the basic sources of information to access the information used by the researchers. Accordingly the references cited at the end of the Ph.D. thesis have been taken as the sources data for our present study. The Ph. D. thesis has been taken as the sources data for our present study. The Ph. D. theses submitted during the seven years (2002-2008) in zoology have been studied.

Data collected on the basic of different factor and analysis of the different aspect such as length of articles. No of table, graphs, photograph in the articles, authorship pattern etc. Its presentation of data by different table and graph i.e. Ranking of journal. Ranking of place.

Scope and Limitations:

The scope and limitation of this study as follows:

1. The scope of this study is Zoology thesis submitted by the Ph. D. scholar in Devi Ahilya University, Indore
2. Analysis only the thesis submitted in Devi Ahilya University, Indore during period of 2002-2008.

Hypothesis:

It may be also provide guideline for research scholar and professional who's interested in bibliometric study. My study is may be useful for research scholar and other professional of the zoology of may be also useful for the university librarian to developing collection of zoology.

Type of Document used:

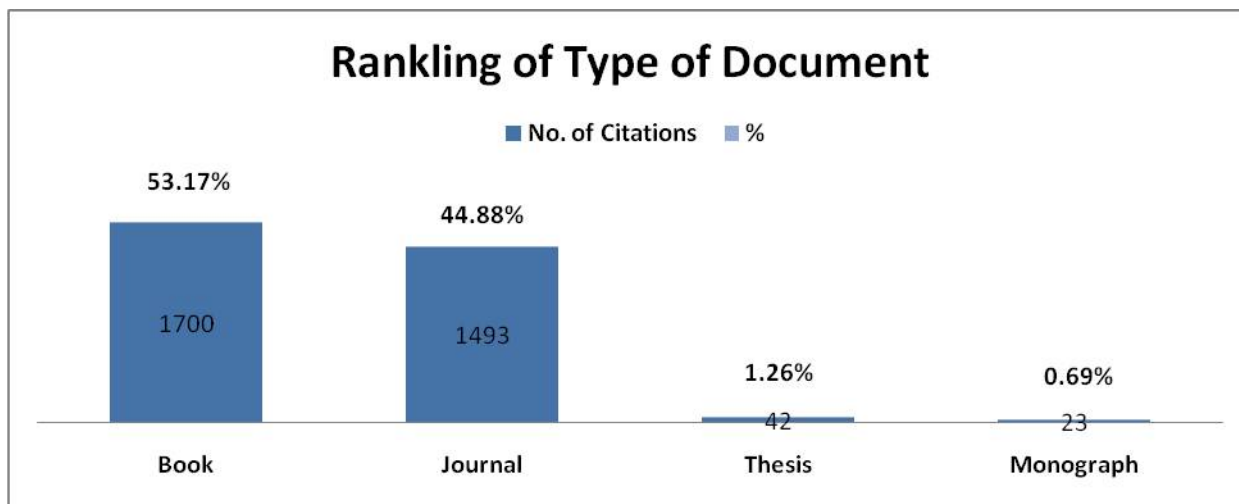
Naturally, the researches in the field of zoology prefer more of scientific research articles in doing their research. However, they may refer to other kinds of documents as well in search for information. So an effort has been made to study the type of material/document used. In the present study, book, periodicals, thesis, monographs have been included.

Table 1: Rankling of Type of Document:

S.No.	Title of Publisher	No. of Citations	Percentage	Rank
1	Book	1700	53.17%	1
2	Journal	1493	44.88%	2
3	Thesis	42	1.26%	3
4	Monograph	23	0.69%	4
	Total	3327	100%	

The above table explicates that in the ranking of document types cited by the contributors in PH. D. thesis of Zoology. The book is on the top most with 1700 (53.17%) citations followed by journal 1493 (44.48%), thesis 42 (1.26%), monograph 23 (0.69%).

It is clear that the researchers in zoology still prefer to refer books more in number when compared to other bibliographical forms of documents. Here, it is interesting to note that the primary periodicals are in the second position. This can be attributed to the fact that the subject zoology is not being taught in the university teaching department, and the resources available to the researchers in the colleges may be insufficient to pursue the research. Thus referring to more of books.



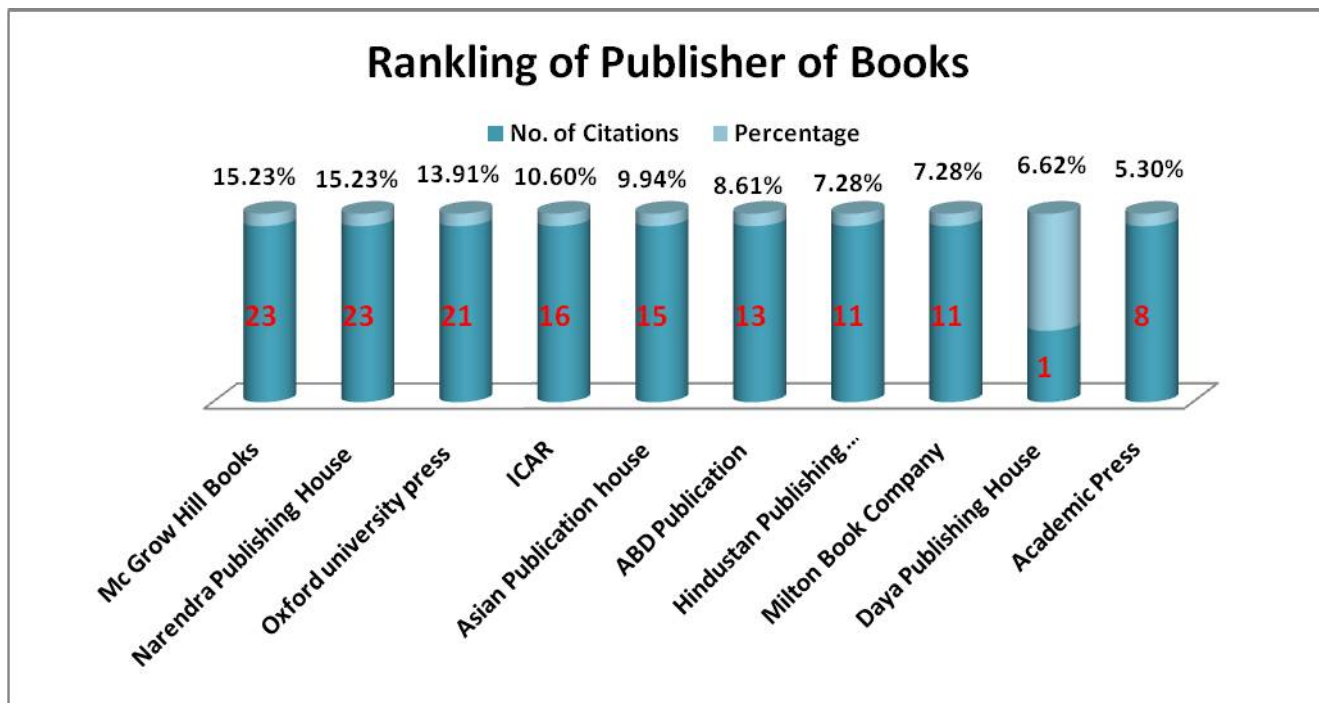
Identification of the Publishers of the Books Used:

From the previous paragraph, it is clear that the researchers are referring to more books, when compared to other sources of information. As such, it is felt necessary to identify the publisher, who publishes more books in the subjects zoology. This will enable the researcher s to refer to the catalogue of these few publisher, from whom, they can get maximum information about the books available in zoology.

Table 2: Rankling of Publisher of Books:

S.No.	Name of Publisher	No. of Citations	Percentage	Rank
1	Mc Graw Hill Books	23	15.23%	1
2	Narendra Publishing House	23	15.23%	1
3	Oxford university press	21	13.91%	2
4	ICAR	16	10.60%	3
5	Asian Publication house	15	9.935%	4
6	ABD Publication	13	8.61%	5
7	Hindustan Publishing Corporation	11	7.28%	6
8	Milton Book Company	11	7.28%	7
9	Daya Publishing House	1	6.62%	8
10	Academic Press	8	5.30%	9
	Total	151	100%	10

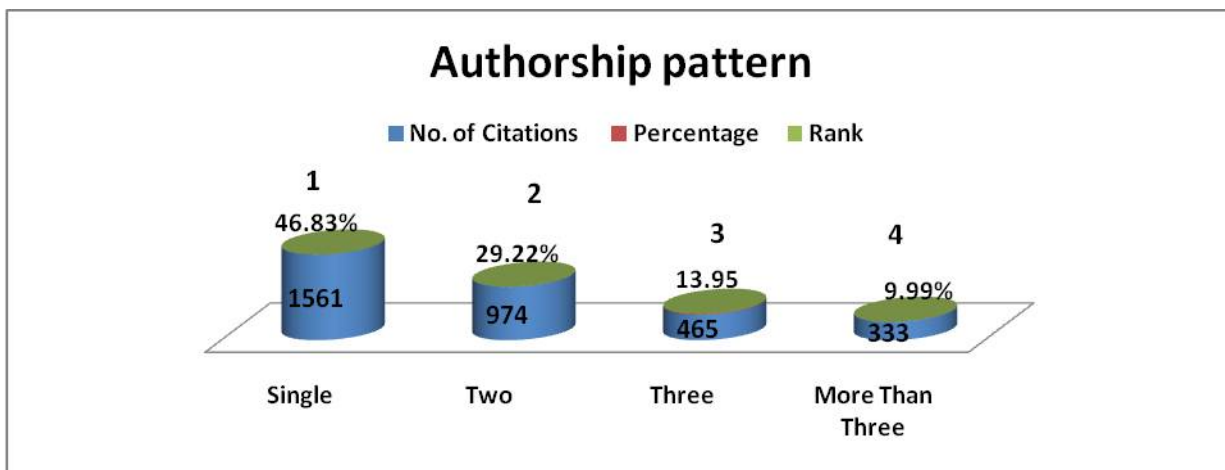
The table shows the publisher wise preferences with the highest No. of citation 23 for Mc Graw Hills Books having percent 15.23% and citation to Academic Press 8 having percent 5.30%.Howere, The total number of reference to these top ten ranked publishers is very less, when compared to the total number of citations for which the research have used. This may be attributed to the fact, that the book on zoology is not being published by a few publishers.



Authorship Pattern in the references used:

Table3: Authorship Pattern in the references used:

S.No.	Number of Authors	No. of Citations	Percentage	Rank
1	Single	1561	46.83%	1
2	Two	974	29.22%	2
3	Three	465	13.95	3
4	More Than Three	333	9.99%	4
	Total	3333	100%	



This table gives the brake up of all citation as per their author. It found that double authorship pattern on the second rank with 974 (29.22%), triple authorship pattern on third rank with 465(13.95%) while more than three authors are cited only 333 (9.99%) time. Thus, the researcher in Zoology, still prefer single author publications more in number when compared to multiple authors.

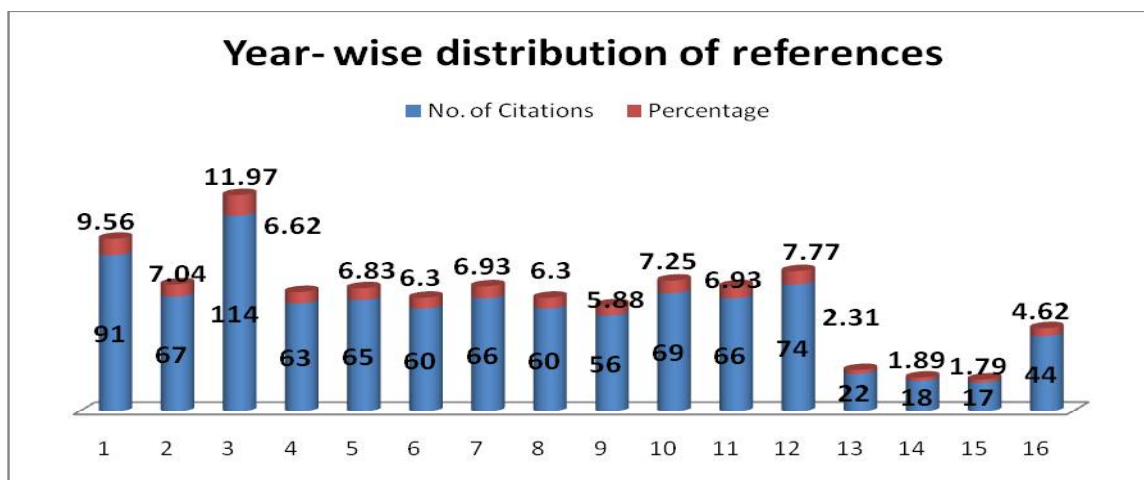
Year- wise distribution of references:

As seen in the previous paragraphs, there were large numbers of references for books by the researchers in Zoology. So an effort has been made to study the year wise breakup of references of the top ten highly ranked publication years by the researchers. The picture is very much heterogeneous and data is varying so widely. It is very difficult to identify any reason for this type of variation.

Table 4: Year- wise distribution of references:

S.No.	Year	No. of Citations	Percentage
1	1991	91	9.56
2	1992	67	7.04
3	1993	114	11.97
4	1994	63	6.62
5	1995	65	6.83
6	1997	60	6.3
7	1998	66	6.93
8	1998	60	6.3
9	1999	56	5.88
10	2000	69	7.25
11	2001	66	6.93
12	2002	74	7.77
13	2004	22	2.31
14	2005	18	1.89
15	2006	17	1.79
16	2008	44	4.62
	Total	952	100

Up to date ness in information gathering is an important issue in information behavior of the researcher. Generally the researcher prefers to use the latest information, unless otherwise the issues are rare and basic. The above table shows the ranking of year of books published. It clearly shows that the citations from the book in the year of citation used researcher and have been cited mostly of the total citation the number of citations accounting for 11.97% percent have been published during 1993 with 114 citations.



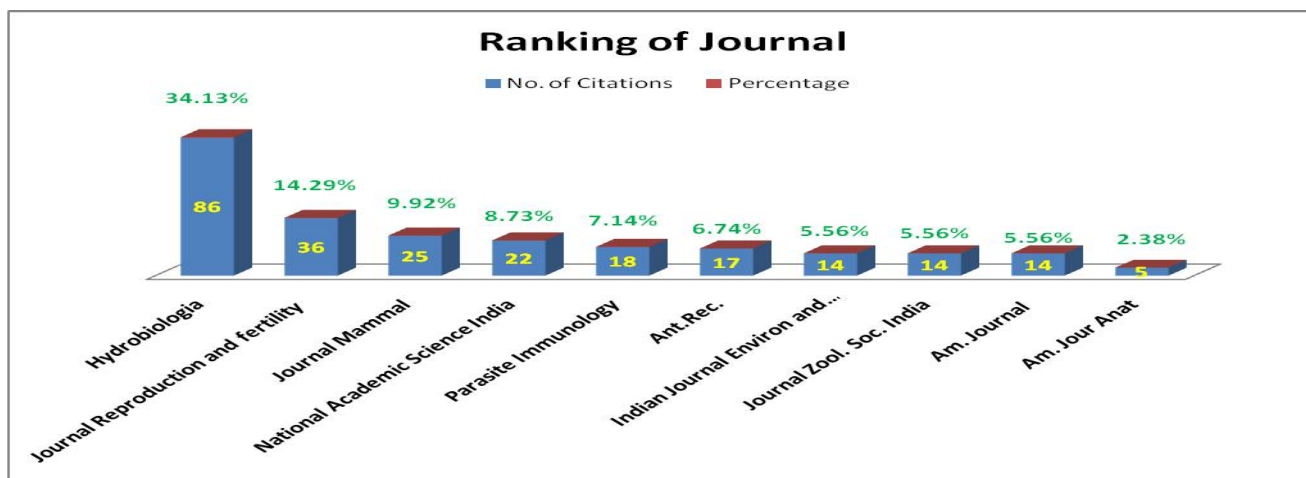
Ranking of Journals :

Primary periodical is the fastest means of scientific communication. As stated in the previous chapter, Maximum number of references are being published by a selected few journals. With highest citations. As such it has been studied the phenomenon in the subject Zoology.

Table5: Ranking of Journal:

S.No.	Name of Publisher	No. of Citations	Percentage	Rank
1	Hydrobiologia	86	34.13%	1
2	Journal Reproduction and fertility	36	14.29%	2
3	Journal Mammal	25	9.92%	3
4	National Academic Science India	22	8.73%	4
5	Parasite Immunology	18	7.14%	5
6	Ant.Rec.	17	6.74%	6
7	Indian Journal Environ and Ecoplan.	14	5.56%	7
8	Journal Zool. Soc. India	14	5.56%	7
9	American Journal of Zoological Research	14	5.56%	7
10	Am. Jour Anat	5	2.38%	8
	Total	252	100	

Finding out the core periodicals in any subject is the primary concern of any bibliometric study. According an effort has been made to find out the core periodicals in zoology a based on the total count each periodical had in thesis submitted by P.H.D. scholars. In fact the Bradford's law states that large number of article will get published in fewer journals, which will be considered as core in any subject. Table shows list of journal most frequency cited in the field is given in the source journal. The study covered only the journal preferred by the researcher. Hydrobiologia has ranked the highest with 86 citations and percentage 34.13% and lowest American journal Anat. Has ranked with 6 citations and percentage 2.38%.



Conclusions:

Based on the discussions made in the previous chapter, the following conclusions were drawn.

1. During the period of study 14th Ph. D. these were submitted. However the year 2002-08 are the fruitful years for the department because 6 these in each year.
2. Books are the most preferred medium in the reference cited with the counted 3333 citations.
3. The Research have preferred the book authored by single authors for the references.
4. From the study it is found that the year 1993 has the highest citations with 114 however this is not a healthy trend.
5. Ninety percent of the research has referred to the article in journal contributed by single author with 1561 citation.

Suggestions:

Based on the discussions and the findings in the previous chapters and paragraphs, the following suggestions are made.

1. We are in the era of information revolution. Still research prefer to the traditional forms of documents. It appears that the researchers need awareness regarding the electronic resources, which are available on internet.
2. The book published from foreign countries also might be having some relevance and these books also might find a place in the references.
3. The literature used by the researchers need to be up-to-date, thus covering the latest literature in their area of research.
4. The list of core journals should be made available to the researchers, so that the researchers will have access to the treasure of information.
5. The university library should make necessary arrangement for the organization of other forms of documents, since they contribute a considerable amount of the information used by researchers.

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