

Citation analysis of dissertations submitted to the Faculty of Fisheries, SKUAST-K, (J&K State)

Asifa Jan

Assistant Librarian
Faculty of Fisheries, SKUAST-K
Rangil, Ganderbal, 190006, J&K State
asifakhan15@rediffmail.com

***Abstracts** - Citation analysis in master ^s/PhD degree dissertation submitted to the Faculty of fisheries during the period of 2008-2017 were analysed for finding possible relationship between citing, cited articles authors. Frequency percentage distribution (presented in charts, line graphic, tables) .The results indicate that Fisheries Journals were mostly utilized reference material in dissertations. Fish biology had highest number of dissertation followed by Fish nutrition and Fish Breeding & Genetics. The lowest numbers of dissertation were from fish economics. The findings reveal that more than 83% of the citation was from Journals and majority of article were contributed by single author. Journal of fish Biology occupies the first rank and more than 48.92% Cited Journals are 15 Years old.*

Keywords:-citation Analysis, Bibliometric studies, Theses, Fisheries Science

Introduction

Bibliometrics has become a standard tool of science policy and research management in the last decades. All significant compilations of science indicators heavily rely on publication and citation statistics and other, more sophisticated bibliometric techniques. Today, bibliometrics is one of the rare, truly interdisciplinary research fields to extend to almost all scientific fields. Bibliometric methodology comprises components from Mathematics, Social Science, Natural Sciences, Engineering and even Life sciences.

The term 'Bibliometrics' and *Scientometric* were almost simultaneously introduced by Pritchard and Nalimov and Mulchenko in 1969¹. While Pritchard explained the term in International Journal of Digital Library Services

Citation analysis is one of the popular methods employed in recent years for identification of core documents and complex relationship between citing and cited documents for a particular scientific community in a geographical proximity². The purpose of the present study is to investigate the use pattern of authorship as revealed through the citation analysis of the MFSc & doctoral dissertations submitted between 2008-2017 in the Faculty of Fisheries, SKUAST-Kashmir, India.

Objective of the Study

Review of Literature: Various studies have been carried out on citation analysis. For the present study, the following to have been reviewed in the light of the topic. Zafrunnisha found that foreign journals were the most cited sources as compared to Indian journals. In authorship pattern, collaborative authorship is high as compared to single papers³. Jadhav et al. in their study reveals that books were most cited documents 1549 (29.39 %), and maximum number 3675 (62.61%) of citations were from India. It was found that single

authorship is dominant⁴. Jan found that books received more citations as compare journals, and female (52.34 %) contributed more than male (47.66 %) ⁵.Deshmukh reveals that journal were the most cited form of literature. In authorship pattern single authored papers dominated over another type of authorship⁶.

Chikate and Patil⁷ in their study reveal that journal articles were found highly cited followed by books and web resources and single authored papers were highly cited. Pillai journal articles were found to be the most frequently cited bibliographic items. The USA was the leading cited country and Elsevier Science is the leading cited publisher.

Okay found that most students in education used more textbooks (60.3%) than other forms of documents Harwade and Dankhade⁸ in their bibliographic form distribution of citations showed that books accounted for 42.77% of citations, followed by journals (32.81%), Ph.D theses (14.70%), newspapers (4.50%) and others (5.22%). The results also revealed that the single authored papers were the highest in number and half-life period for journals was found to be 22 years¹¹.

Buttlar ⁹observed that about 80 % of the citations were of single authored papers, also journal articles were cited more than books, book chapters, proceedings, theses, and other print resources. The most cited journals were College and Research Libraries and Journal of the American Society for InformationScience⁹. Schneder found that Bibliometrics is the most active field of library and information science. Citation analysis study is the major portion of it. Bibliometrics is a subfield of the information science – Bibliometrics is the study of documents and their bibliographic reference and citation structure. Bibliometrics methods have been successfully applied to examine the intellectual structure of several disciplines¹⁰.

Citation represents the pool of archival knowledge from which authors retrieve established ideas and, in turn, generate new research ideas. This knowledge may be disseminated; within an area and across disciplinary boundaries¹¹.

Objective of the Study

- To determine the principal forms of literature used in dissertations by MFSc / doctoral students
- To prepare a ranked list of periodicals based on frequency of use by MFSc/doctoral students.
- To determine the age distribution of literature used by MFSc/doctoral students.
- To study authorship patterns in citations.
- To determine subject-wise distribution of citations

Methodology

The source of the data for the present study is the 32 dissertations. Theses submitted to Faculty of Fisheries, SKUAST-K during the year 2008-17. In this discipline of Fishery science, a total number of 32 theses in 14699 citations were found in the 32 thesis, each thesis was manually examined and citations were extracted from the references and bibliographical sections of the thesis. The data extracted were analysed using MS-Excel software.

Data Analysis:

Table- 1.Bibliographic form-wise distribution of citations

Form of publication			Cumulative	
Form of Publication	Cumulative	Percentage	Cumulative	Percentage
Journal	12242	83.29	12242	83.29
Books	1450	09.87	13692	93.14
Thesis	500	03.40	14192	96.55
Reference Books	300	02.04	14492	98.59
Proceeding	70	00.48	14562	99.06
Web	59	00.40	14621	99.47
Symposium	50	00.34	14671	99.81
Reports	20	00.13	14691	99.94
Technical Paper	8	00.05	14699	100
Total	14699			

Figure1: Distribution of Citations

It is observed from the above table and fig. that out of the total citations, the journals contribute the highest number of citations accounting for 12242 (83.29%) followed by books as the most cited information source accounting for (9.87%). The next preferred source of information by fisheries users publications with (3.40%) whereas the thesis. The least use of sources is technical reports (05%).

Table2:-Ranked List of Cited Journals

SN	Name of Journal	Rank	Citation	Percentage	SN	Name of Journal	Rank	Citation	Percentage
1	Journal of Fish Biology	1	2956	24.14	49	Jl of Marine Biology	13	20	0.16
2	Indian Journal of fisheries	2	2222	18.15	50	Jl of Morphology	13	20	0.16
3	Journal of environmental Biology	3	1450	11.84	51	Seafood exporter Journal	13	20	0.16
4	Aquaculture	4	1360	11.1	52	Environmental Research	13	20	0.16
5	Turkish Journal of Fisheries & Aquaculture sc	6	1131	9.23	53	Recent Adv in aquaculture	13	20	0.16
6	Jl of inland fish society	5	1106	9.03	54	Canadian jl of fish and Aquaculture	13	20	0.16
7	Egpt Journal of Aquaculture Research	7	36	0.29	55	Canadian jl of zoology	13	20	0.16
8	Envi ecology	7	36	0.29	56	Fish Biology	13	20	0.16
9	World Journal of Fish & Marine Science	7	36	0.29	57	Fish shellfish Immunology	13	20	0.16
10	International Journal of parasitology	8	35	0.28	58	Jl Fish Disease	13	20	0.16
11	International Journal of environmental studies	8	35	0.28	59	Jl of marina Biology	13	20	0.16

12	Parasitology	8	35	0.28	60	Jl of Morphology	13	20	0.16
13	Aquaculture Research	8	35	0.28	61	Seafood expo Journal	13	20	0.16
14	Environmental pollution	8	35	0.28	62	Journal of aquaculture Animal health	14	18	0.14
15	Environmental Biology of Fish	8	33	0.26	63	Asian jl of Agriculture Science	14	18	0.14
16	Hydrobiology	8	33	0.26	64	Acta Anatomy	14	18	0.14
17	Jl of Biology Science	8	33	0.26	65	Bangladesh JI Biological Science	14	18	0.14
18	Jl of Research & Development	8	33	0.26	66	Environmental Ecology	14	18	0.14
19	Jl of Helminthology	8	32	0.26	67	Food chemistry	14	18	0.14
20	African JI of Biotechnonology	9	30	0.24	68	Journal Fish physiology & biochemistry	14	18	0.14
21	African JI of Biological Science	9	30	0.24	69	International Journal of lakes & river	14	18	0.14
22	Comp physiology Ecology	9	30	0.24	70	Jl of exp Biology	14	18	0.14
23	Fishing chimes	9	30	0.24	71	Jl of plankton Research	14	18	0.14
24	Jl of Entomology zoological studies	9	30	0.24	72	Marine biology	14	18	0.14
25	African Journal of Agri Research	10	28	0.22	73	Research Journal of Science	14	18	0.14
26	Ecotoxicology	10	28	0.22	74	Fish pathology	14	18	0.14
27	Fisheries Research	10	28	0.22	75	Ichthyology	15	14	0.11
28	International Journal of social Sc Research	10	28	0.22	76	Indian Journal of inland fisheries	15	14	0.11
29	Jl of animal Ecology	10	28	0.22	77	International Journal of Fish & Aquaculture	15	14	0.11
30	Jl of chem. & pharmacological Res	10	28	0.22	78	Jl inland fish society	15	14	0.11
31	Jl parasitology	10	28	0.22	79	Jl of Architecture	15	14	0.11
32	Taxon	10	28	0.22	80	Jl of Marine Science	15	14	0.11
33	Ecology	11	25	0.2	81	Jl of zoology society of India	15	14	0.11
34	Geobios	11	25	0.22	82	Limnology & Oceanography	15	14	0.11
35	Jl of Fish Res	11	25	0.22	83	Marine mammal society	15	14	0.11
36	Nature	11	25	0.22	84	Natural Environmental & pollution Technology	15	14	0.11
37	Gen comp endocrinology	12	23	0.18	85	Science	15	14	0.11
38	International Journal of Environmental biology	12	23	0.18	86	Water research	15	14	0.11
39	Jl of sc & Applied Bioscience	12	23	0.18	87	Arab gulf Journal of science	16	13	0.11
40	Pollution research Journal	12	23	0.18	88	Austrian Journal of Marine Freshwater Research	16	13	0.11
41	Environmental Research	13	20	0.16	89	Current world environment	16	13	0.11
42	Recent Advance in Aquaculture	13	20	0.16	90	Envi pollution	16	13	0.11
43	Canadian Journal of Fish and aquaculture	13	20	0.16	91	Indian Journal of zoology	16	13	0.11
44	Canadian Journal of	13	20	0.16	92	Indian Journal	16	13	0.11

	zoology					Ecological Environment			
45	Fish biology	13	20	0.16	93	Intern res Journal Environment Society	16	13	0.11
46	Fish immunology shellfish	13	20	0.16	94	Journal Research aqua	16	13	0.11
47	Ichthogics	13	20	0.16		15 Journals with 2 Citations	17	15x2=30	0.25
48	Jl Fish Disease	13	20	0.16		39 Journals with 1 Citation	18	35x1=35	0.29

Table 3:-Scattering of Journals and Citations over Bradford’s Zone

Zone	No of Journal	No of Citation	% of Citation
1	1-2	2956	24.15
2	3-5	3672	30.00
3	143	5614	45.85

Table 3:- shows the distribution of number of journals against the number of citations according to Bradford’s Law. It is clearly indicated from the above table that first 2 Journals cover 2956 articles; next 3 journals covers 3672 articles and further 143 Journals covers 5614 articles. In other words, approximately one-third of the total citations have been covered by each group of the journal. According to the Bradford’s Law, $3 = n$, then $1: n: n^2$

$$2:2 \times 3:2 \times 9^2 = 2:6:162$$

The zone three numbers of journals (i.e. 143) is not near to square of that in zone two. Hence, it is found that the literature does not fit to the law. So, 1st 2 journals with 2956 citations are the most productive group, which covers 24.15% literature. To increase the satisfaction level of the users of Fisheries College, in addition to 75.85%, the library has to add 40 more titles to its current subscription list. This way, the study will be helpful in deciding the core journals as it will serve as the basis for future subscriptions based on the availability of funds.

Table 3:-Yearly Distribution of Thesis

Year	Frequency	%
2008-09	2	6.25
2009-10	2	6.25
2010-11	1	3.13
2011-12	6	18.75
2012-13	0	0
2013-14	0	0
2014-15	1	3.13
2015-16	4	12.50
2016-17	7	21
2017-18	9	28.13
Total	32	100

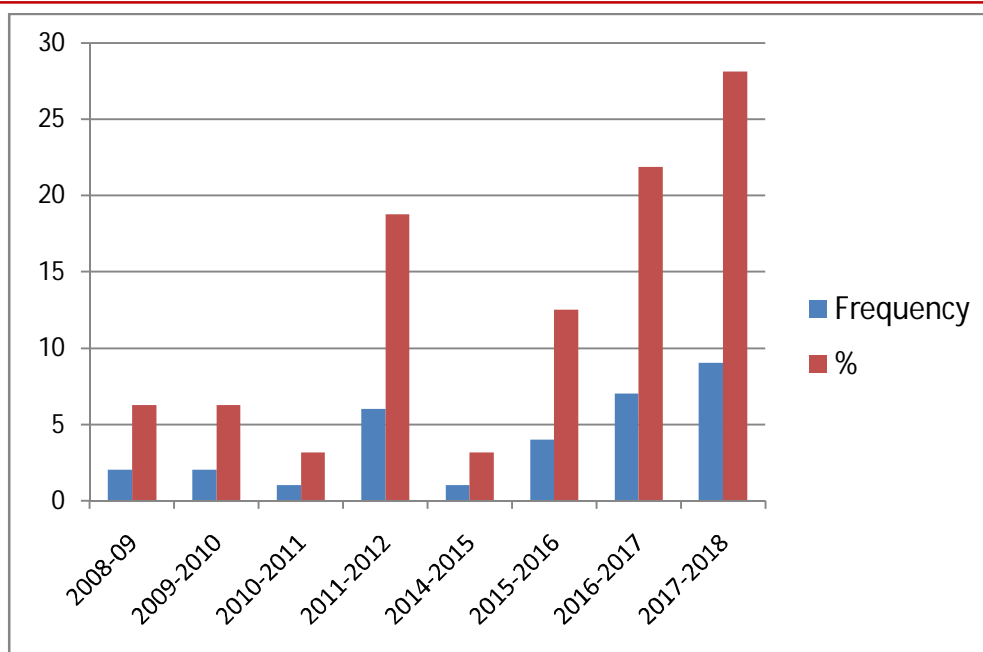


Figure 3:-Yearly Distribution of Thesis

Table3:-show the chronological distribution of dissertation was very high in 2017 and very low in 2010 and 2014. In year 2012 & 2013 the distribution was zero. Most of year averaged in 4 dissertations annually.

Table 4:-Subject Distribution

Subject	No of Dissertation	%	Cumulative Nos	%
Fishery Biology	13	40.63	13	40.63
Fish Engineering	2	6.25	15	46.88
Fishery Economics	1	3.13	16	50.00
Fish Nutrition	3	9.38	19	59.38
Fish Breeding & Genetics	3	9.38	22	68.75
Fish Pathology	2	6.25	24	75.00
Limnology	8	18.75	32	100.00
Total	32			

13 (40.63%) of the citations are from fishery biology, followed by 08 (18.75%) in limnology, 03 (9.38%) citations from fish nutrition and fish breeding & genetics, followed by (6.25%) citation from fish pathology and fish engineering.

Table 5: Authorship pattern

No of Author	No of Articles	%	Cumulative %
Single Author	6887	56.25	56.25
Two Authors	2186	17.85	74.1
Three Authors	304	02.50	76.6
Four Authors	1879	15.35	91.95
More than Four Authors	986	08.05	100
Total	12242	100.00	

Table 5:-shows authorship pattern of journal citation. It reveals that out of total cited journals 6887(56.25%) were contributed by single author. Whereas 2186(17.85%) were contributed by two authors.1879 (15.35%) were contributed by four authors, and only (2.50%) were contributed by three authors.

Table 6:-Age of Citation

Time Span	No of Citations	%	Cumulative Citations	Cumulative %
1957-67	300	02.45	300	2.45
1968-78	495	04.05	795	6.49
1979-89	1904	15.55	2699	22.05
1990-2000	2390	19.40	5089	41.57
2001-2011	5989	48.92	11078	90.49
2012-2015	1164	9.53	12242	100

Table 6:-indicates years-wise distribution of the cited journals. It is clearly revealed that more than 55 years old journals have been used by the fisheries users. Near about 48.92% of the articles are 15 years old. 33% of the citations in Agronomy and 40% citations in Plant breeding range between 0-10 years. To find the half-life of Agronomy and Plant breeding literature, plain graphs are drawn taking the age of citations on the X-axis and cumulative numbers of citations on the Y-axis as presented in fig.3 & 3(a). A line parallel to X-axis is drawn in both figures from the point A (A represent half of the total citations i.e.531 and 488) to reach the curves at point B. From B, another line parallel to Y-axis is drawn to reach the X-axis at point C. The half-life of Agronomy and Plant

Findings

More than 14699 citations from 32 MFSc/ doctoral dissertations were analyzed. The following conclusions are drawn:

- More than half of the citations recorded are from journal articles: 12242 (83.29%)
- other subject areas.
- Journal of Fish Biology is the most cited journal, followed by *Scientometrics*.
- Most of the citations are from 5 journals out of the total number

Conclusion

Citation analysis of dissertations and ranking of journals are useful in determining information sources that are vital for doctoral studies in a given subject area. They may also help libraries in their budget planning to judiciously use their budgets and funds to make far reaching decisions on library material collection

References:-

1. Buttler L. (1999). Information sources in library and information science doctoral research. *Lib. Inf. Sci. Res.*, 21(2), 227-245.
2. Chikate R.V. and Patil S.K. (2008). Citation analysis of theses in library and information science submitted to University of Pune: A pilot study. *Lib. Philosophy and Practice*, 1-15.
3. Deshmukh Prashant P. (2011). Citations in Annals of Library and Information Studies from 1997- 2010: A study. *Annals Lib. Inf. Studies*, 58, 355-361.references
4. Hirwade M.A. and Dankhade S.S. (2002). Citation analysis of doctoral research in economics. *ILA Bulletin*, 38, 36-45.
5. Jadhav V., Khaprade V.S. and Shelke Santosh M. (2011).Citation analysis of University News Journal. NFLIBNET Centre.
6. Jan Rosy (2009). Citation analysis of Library Trends. *Webology*, 6(1), 1-10.
7. Okiy Rose B. (2003). A citation analysis of education dissertations at the Delta State University, Abraka, Nigeria. *Collection Building*, 22(4), 158-161.
8. Ravichandra, G Sivaprasad, K Manohara, 2014. Bibliometric Citation in PhD thesis in Library & Information Science at Bharathidasar University Tiruchi. *International Journal of Digital Library science* .4(3).218-230.
9. Shashiraj, C. Nayak .2017. Citation analysis of PhD thesis in Economics submitted to University of Gulbarga Karnataka, during 1984-2002. *Research Journal of Library science*, 5(3):1-8.
10. Zafrinnisha N. (2012). Citation analysis of PhD theses in psychology of selected Universities in Andhra Pradesh, India. *Lib. Philosophy and Practice*.

