International Journal of Information Movement *Vol.2 Issue XII April 2018)*

IFSIJ Impact Factor : 1.575 *Website: www.ijim.in* *ISSN: 2456-0553 (online)* **Pages 1-7**

CITATION ANALYSIS OF THE JOURNAL 'ENERGY, SUSTAINABILITY AND SOCIETY

Dr. M. Raghunandana
Asst. Professor
Dept. of Library & Information Science
Bangalore University, Bangalore-560056
Email: **mraghunandana@rediffmail.com**

Abstract: Environmental science is the study of the effects of natural and unnatural processes, and of interactions of the physical components of the planet on the environment. The Environmental science teaches us to understand the way nature works, to understand interaction between humans and environment, and to understand how human development affects environment. This paper analyses citations of the Journal "Energy, Sustainability and Society". It covers the study on Authorship pattern, Chronological distribution of Journal citations.

Keywords: Environmental Science, Energy, society

1.0 Introduction:

Environmental science is an interdisciplinary field as it incorporates information and ideas from multiple disciplines. The natural sciences, such as Biology, Chemistry, and Geology are base for Environmental science. The environmental science not includes the natural sciences but also work with the social sciences and the humanities. The Social science which are incorporated into environmental science include Geography, Economics, and Political science. The subjects like Philosophy and ethics are the two fields within the humanities that are also included in environmental science. With the combination of Natural science, Social Science and Humanities the Environmental science can extend its scope by examining problems and topics from many different points of view.

2.0 Definitions

According to **Miller:** "Environmental science is defined as a branch of biology focused on the study of the relationships of the natural world and the relationships between organisms and their environments."

3.0 Citation Analysis

Citation analysis is the study of the impact and assumed quality of an article, an author, or an institution based on the number of times works and/or authors have been cited by others. It helps to identify the most important documents in a collection. A classic example is that of the citations between academic articles and books. The general analysis of collections of documents is known as bibliometric and citation analysis is a key part of that field. For example, bibliographic coupling and co-citation are association measures based on citation analysis (shared citations or shared references).

4.0 About the Source Journal: Energy, sustainability and society is an interdisciplinary forum for research, development & implementation of sustainable energy systems published yearly by Springer science & Business Media in United States. It was first published in the year 2011.It covers topics ranging from scientific research to innovative approaches for technology implementation to analysis of economic, social and environmental impacts of sustainable energy systems.

4.1 Need for the Study

Environmental Science literature is growing enormously. This literature on environmental science is published in numerous textbooks, journals, reports, and conference proceedings, interviews and discussions, yearbooks etc. Therefore this study helps to prepare rank list (core periodicals) to understand productive journals which are published on Environmental science. As libraries face problems in selecting productive and reputed journals, this study helps to identify productive journals for collection development in general and journal selection in particular.

5.0 Objectives of the Study:

The following are some of the objectives for present study.
They are:

1 To know the different forms of literature used by the researchers.
2 To find out the different source of information
3 To list out the highest source of the text books in data collection.
4 To find the rank list of frequently cited journals.
5 To understand the Authorship pattern of the journal citation and books citations.
6 To understand the chronological distribution of ranked journal citation.
7 To identify the dominant countries whose literature is of interest to the researchers?

6.0 Scope of the Study:

The present study analyses the citations which are appended in the source Journal "Energy, Sustainability and Society" during the year 2012-2016.

7.0 Source of the Data:

The data was collected from the source journal "Energy, Sustainability and Society" There are 3638 citations and citations for journals. The data analysis for different table headings is provided.

8.0 Methodology of Research:

The present study is focused on citations in journals over a period of five years, i.e. 2012 to 2015. These citations were later grouped according to journals, textbooks, thesis etc. There were 3638 citations identified in the study out of which 1348 citations were of journal articles and 1709 citations were from textbooks.

9.0 Review of Literature

A literature review compiles and evaluates the research available on a certain topic or issue that you are researching and writing about. Thus, an effective review analyses and synthesises the published work on a topic and should: Summarise and evaluate findings, compare and contrast different authors' views to:

- Group authors who draw similar conclusions, and
- Note areas where authors are in disagreement,
- Highlight exemplary studies,
- Note gaps in knowledge

9.1 Sources of Information:

LISA,LISTA, Shodganga, Emerald Insight, Vidhyanidhi, DOAJ, Online open access journals.

9.2 Literature Review

Ketzler, Rolf & Zimmermann, Klaus F. (2013) quantifies the determinants of citation success and stimulates their citation potential. Among the determinants of number of cites the quality of the publication outlet exhibits a strong positive effect. The same effect has the number of published pages, but journal with size limits also yield more cites. Field journals get fewer citations in comparison to general journals. Controlling for journal quality, the number of co-authors of a paper has no effect, but it is positive when co-authors are located outside the own institution.

Maharana, Bulu et al. (2011) presented the mapping of Indian contributions in chemistry determining India's position in publishing top research papers in chemistry as reflected in Science Direct. The investigations illustrate that participation of Indian scientists occupy third position. The findings supported an earlier survey which propounded that India has a long history of chemical investigations, and chemistry is the most popular discipline followed by mathematics and physics.

10.0 Analysis and Interpretation of Data

There are five journals from the year 2012 to 2016 consulted for data collection. There are 3638 citations which have been distributed on the basis of form as well as the source of the citation. Out of the total citations, 1709 citations are from book and 1348 citations are from books. The rest have been classified into citations from reports, working papers, conference/seminar articles, handbooks, yearbooks and so on.

Table-1: Volume & Year wise distribution of Citations

Year	Volume No.	No. of articles	Number of Citations	Percentage	Cumulative Citations	Cumulative Percentage
2012	2	19	593	16.30%	593	16.30%
2013	3	17	746	20.50%	1339	36.80%

2014	4	17	829	22.78%	2168	59.59%
2015	5	17	916	25.17%	3084	84.77%
2016	6	17	554	15.22%	3638	100%
Total			**3638**	**100%**		

Table 1 identifies the year wise distribution of citations. There are 593 (16.30%) citations in the year 2012, 746 (20.50%) in 2013, 829 (22.78%) in 2014, 916 citation in 2015 and 554(15.22%) citations in the year 2016.

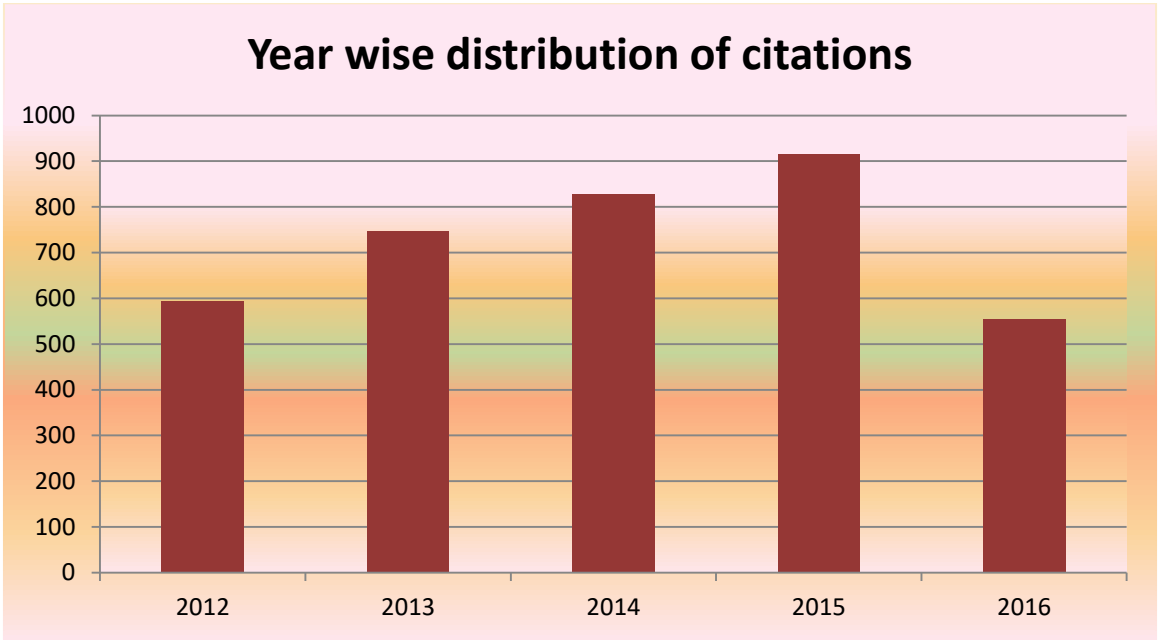

Fig-1: Year wise distribution of citations

Table-2: Source wise distribution of citation

Sources	**Number of Citations**	**Percentage**	**Cumulative Citations**	**Cumulative Percentage**
Primary Sources [Periodicals, Conference/Seminar articles, reports, thesis & dissertations]	1862	51.18%	1862	51.18%
Secondary Sources [Text Books, Handbooks, dictionaries& encyclopedias]	1729	47.52%	3591	97.05%
Tertiary Sources [Yearbooks]	5	0.13%	3596	98.84%
Miscellaneous	42	1.15%	**3638**	**100%**
Total	**3638**			

It is evident from the above table that 51.18% of the citations represent primary sources of information. This is followed by secondary sources (47.52%), tertiary sources (0.13%) and other sources consist of (1.15%) of the citations.

From this table it is observed that researchers concentrated more on primary sources as it contains current and nascent information.

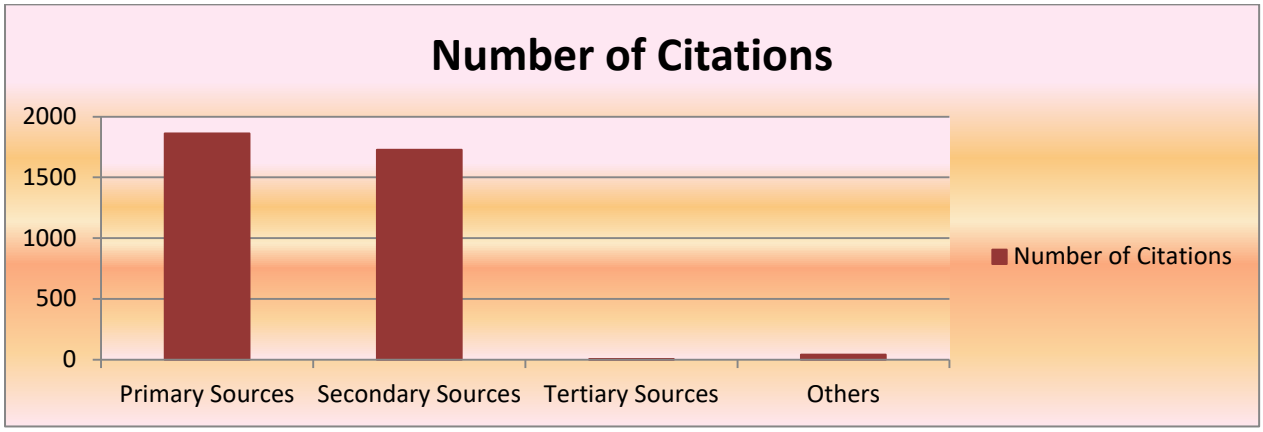

Fig-2: Source wise distribution of citation

Table-3: Form wise distribution of citations

Source material	Rank no	No. Of Citation	Cumulative Citation	% of citations	Cumulative%
Textbooks	1	1709	46.97%	1709	46.97%
Periodicals	2	1348	37.05%	3057	84.02%
Reports	3	278	7.67%	3335	91.67%
Conference/ Seminar Articles	4	134	3.76%	3469	95.35%
Thesis	5	76	2.08%	3545	97.44%
Websites	6	42	1.15%	3587	98.59%
Newspapers	7	26	0.71%	3613	99.31%
Govt Reports	8	11	0.30%	3624	99.61%
Handbooks	9	9	0.24%	3633	99.86%
Yearbooks	10	5	0.13%	3638	100%
TOTAL		**3638**		**100%**	

Table 3 shows the source wise ranking of citations. The highest number of citations are from textbooks 1709 (46.97%) followed by periodicals 1348 (37.95%), reports 278 (7.67%), conference/seminar articles 134 (3.76%), thesis 76(2.08%), websites 42 (1.15%), working papers 26(0.71%), govt reports 11(0.30%), handbooks 9(0.24%) and yearbooks 5 (0.13%) were referred by researchers.

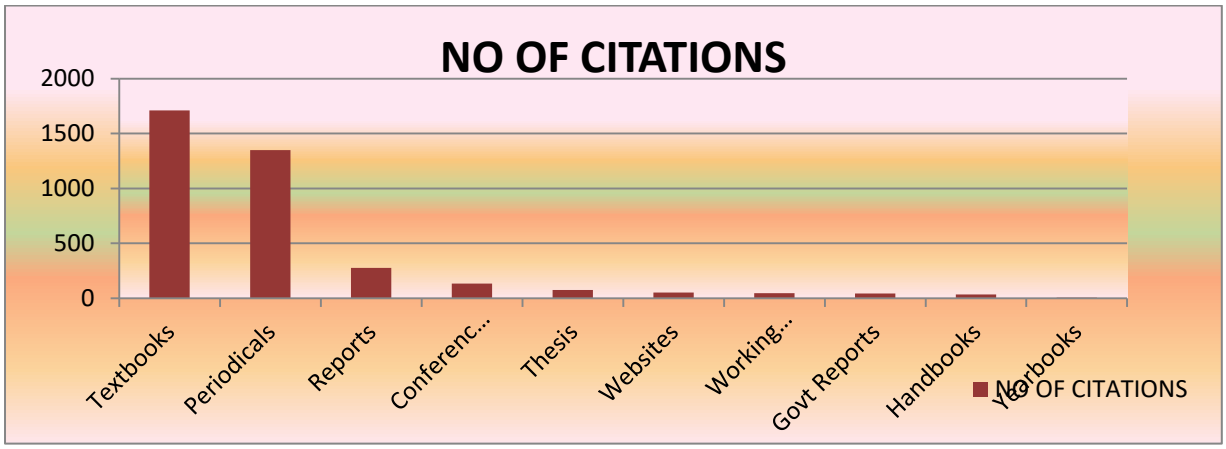

Fig- 3.Form wise distribution of citations

Table-4: Authorship pattern of Journal citations

Number of Authors	Number of Citations	Percentage
Single Author	256	18.99%
Double Author	421	31.23%

Three Authors		316	23.44%
Four and above authors		259	19.21%
Corporate Authors	96	7.12%	
Total	**1348**	**100%**	

Table-4 shows the authorship as reflected in journal articles. Single author contributions aggregate to 256(18.99%) followed by double authors with a total of 421(31.23%), three authors contributes to 316(23.44%), four and above authors 259(19.21%) and corporate authors contributes to 96(7.215) of the articles.

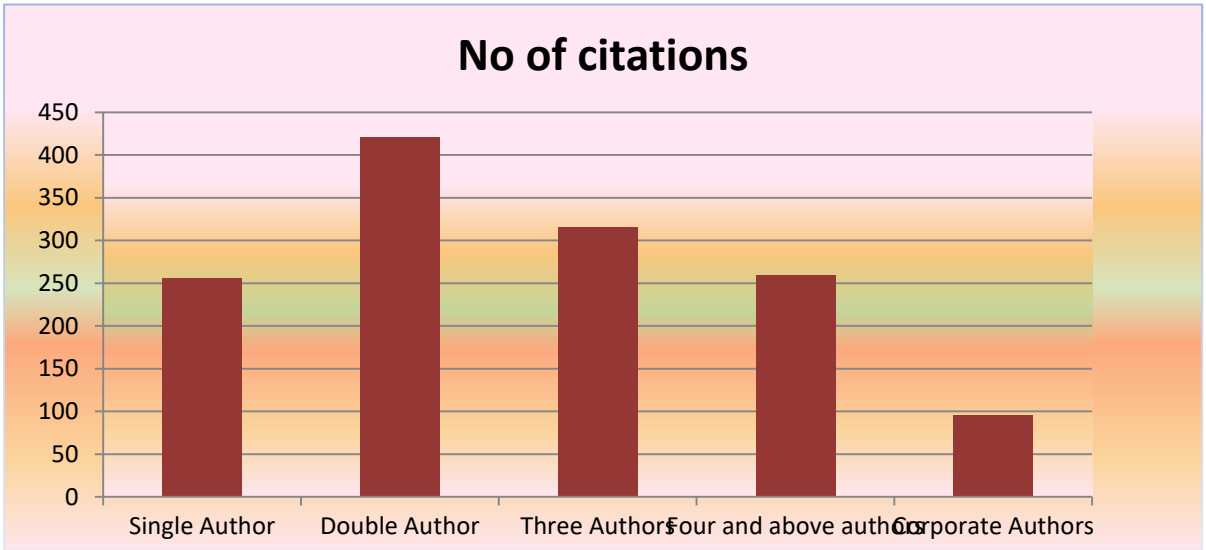

Fig- 4 Authorship pattern of Journal Citations

Table-5 Chronological Distribution of Journal Citations

Year	Number of citations	Percentage	Cumulative Citations	Cumulative Percentage
1995-2000	107	7.93%	107	7.93%
2001-2005	190	14.09%	297	22.03%
2006-2010	636	47.18%	933	69.21%
2011-2015	415	30.78%	1348	100%
Total	**1348**	**100%**		

Table-5 reveals the chronological distribution of journal citations. The periodicity of the citations is divided into 4 parts. Chronological distribution of the journal citations shows that more than 47.18% of the citations are from the period between 2006 and 2010. The remaining citations are scattered between1995-2000 (7.93%), 2001-2005 (14.09%) and 2011-2015 (30.78%). This indicates that the researchers referred the latest source of information for their research work and the older sources were cited less often compared to latest articles

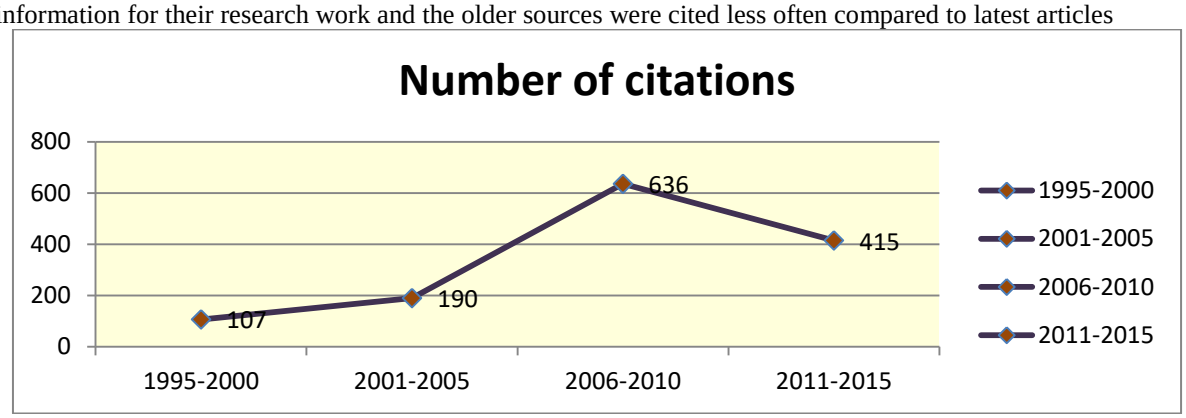

Fig-5 Chronological distribution of journal citations

Table-6 Authorship Pattern of Book Citations

Number of Authors	Number of citations	Percentage
Single Authors	347	20.30%
Double Authors	412	24.10%
Three Authors	381	22.29%
Four and above Authors	435	25.45%
Corporate Authors	134	7.84%
Total	**1709**	**100%**

Table 6 shows the authorship pattern as reflected in textbooks. Single author contribution aggregates to 347(20.30%) followed by double authors with a total of 412(24.10%), three authors contributes to 381(22.29%), four and above authors contribute to 435(25.45%) and corporate author contributes to 134(7.84%) of the articles cited.

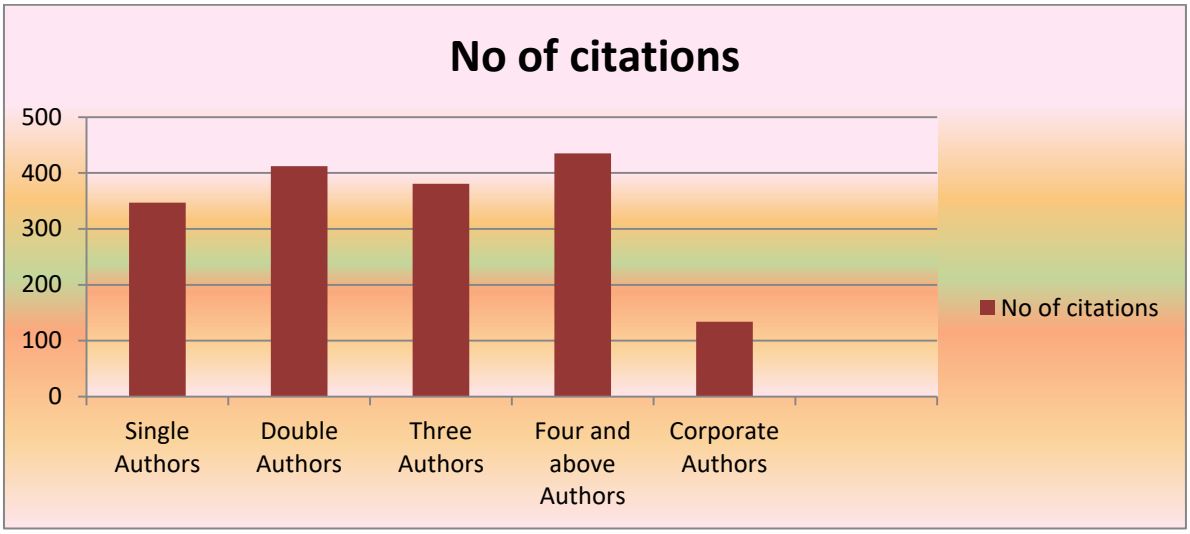

Fig- 6. Authorship pattern of book citations

Table-7: Chronological Distribution of Book Citations

Year	No. Of citations	Percentage	Cumulative Citations	Cumulative Percentage
1995-2000	118	6.90%	118	6.90%
2001-2005	256	14.97%	374	21.88%
2006-2010	673	39.37%	1047	61.26%
2011-2015	662	38.73%	1709	100%
	1709	**100%**		

Table-7 reveals the chronological distribution of book citations. The periodicity of the citations is divides into 4 parts. Chronological distribution of books shows that more than 39.37% citations are of period 2006-2010. The remaining citations are scattered between 1995-2000(6.90%), 2001-2005(14.97%) and 2011-2015(38.73%).

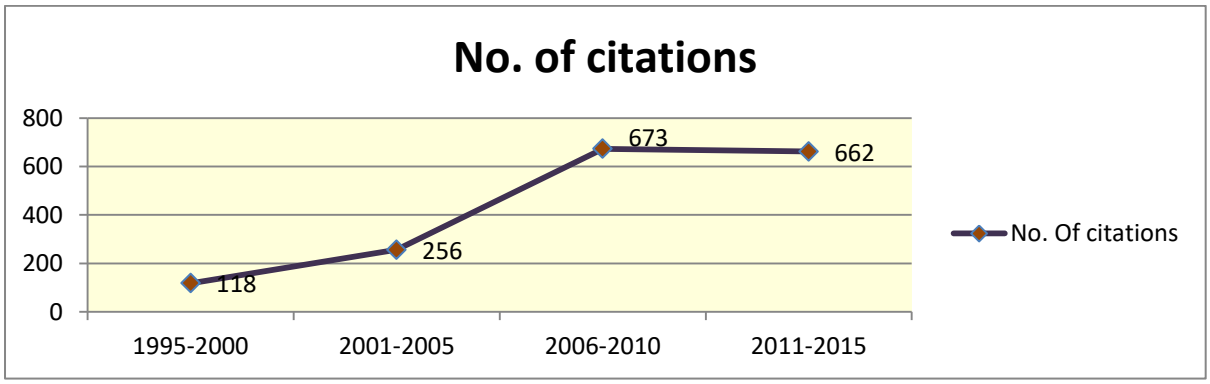

Fig-7.Chronological distribution of Book Citations

10.0 Major Findings

It is observed from table 1 that highest number of articles cited was published in the year 2015.

10.1 Source wise distribution of Citations

The analysis of the environmental science journal shows that the researchers mainly depend on Primary source (51.18%) for their information use

10.2 Authorship Pattern of Book Citation

Authorship pattern of the study shows that 347(20.30%) of the articles cited were contributed by single authors, followed by double authors with a total of 412(24.10%), three authors 381(22.29%), four and above authors contribute to 435(25.45%) and corporate author contributes to 134(7.84%) of the articles cited.

10.3 Chronological Distribution of book citations

Table reveals thatshows that more than 47.18% citations are of period 2005-2010. This shows that the researcher referred current sources for latest information for their research work.

11.0 Conclusion

The present investigation is mainly intended to describe the characteristics of Environmental Science literature. The citations analysis is made on the journal "Energy, Sustainability and Society". As citation analysis is one of the most widely used method of Bibliometrics to analyse the productiveness of periodicals, the study identifies and brings out the list of core journals which are most productive in the field of Environmental Science. The findings and suggestions of the study may be used by the faculty of the department of Environmental Science and also may recommend these sources to post graduate students and research scholars.

12.0 References

1. Allison, Melody M (2006).Mapping the Literature of Nephrology Nursing. Journal of The Medical Library Association, 94, 74-79.
2. Shokeen,Ashu & Kaushik,Sanjay K (2010). Indian Journal of Plant Physiology: A Citation Analysis. Annals of Library And Information Studies, 5(2),23-26.
3. Biradar, Banateppanvar K etal.(2013). Citation Analysis of Doctoral Theses In Zoology Submitted To Kuvempu University, India: A Case Study. International Journal of Library and Information Science, 5(6), 192-202.
4. Bjorneborn, L. & Ingwersen, P. (2004). Toward A Basic Framework for Webometrics. Journal of The American Society For Information Science And Technology, 55 (14), 1216-1227.
5. Maharana,Bulu et al. (2011). Citation Analysis Of Top Research Papers In Chemistry With Specific Reference To India. Library Review, 60 (6), 501-512.
6. Neuhaus, Christoph, Daniel, Hans(2008). Data Sources for Performing Citation Analysis: An Overview. Journal Of Documentation, 64 (2),193-210.
7. *Jadhav, Vandana S et al. (2012).* Online Journal Of Library Hi-Tech: A Citation Study. Journal of Library, Information and Communication Technology,4(1), 32-37.
8. Jan, Rosy(2008). Citation Analysis of Library Trends. Webology,6(1),67-71.
9. Jeyshekar, B et al. (2012). Scientrometric Analysis of Research Output on Neutrino In India. International Journal of Digital Library Services,2(2), 45-56.
10. LI, JIATAO & TSUI, ANNE S (2002). A CITATION ANALYSIS OF MANAGEMENT AND ORGANIZATION RESEARCH IN THE CHINESE CONTEXT: 1984–1999. ASIA PACIFIC JOURNAL OF MANAGEMENT, 19 (1), 87-95.
11. SINGH, JOGINDER & BURMAN, M. SHEELA (2011) CITATION ANALYSIS OF DISSERTATIONS OF LAW SUBMITTED TO UNIVERSITY OF DELHI. LIBRARY PHILOSOPHY AND PRACTICE. 3, 3-4.
12. GUNDOLF,KATHERINE & MATTHIAS, FILSER(2013).MANAGEMENT RESEARCH AND RELIGION: A CITATION ANALYSIS. JOURNAL OF BUSINESS ETHICS, 112 (1),177-185.