SCIENTOMETRIC ANALYSIS OF JOURNAL ETHICS AND INFORMATION

TECHNOLOGY

Vaishali .B. Kanekar[1]
Research Scholar
Dept .of Library & Information Science
Dr. Babasaheb Ambedkar Marathwada University,
Aurangabad, Maharashtra, India.

Dr. Siddiqui Eraj Azeeza[2]
Librarian
Dr. Rafiq Zakaria College for Women,
Aurangabad, Maharashtra, India.

ABSTRACT:

The present study deals with Scientometric analysis of 249 articles published in Journal Ethics & Information Technology. Ten Volumes of the journal containing 40 issues from 2003 – 2012 have been taken into consideration for the present study. The data analysis was done using the SPSS package. Data reveals that single author contributed 181 (72.6%) while the rest of 68 (27.3%) articles were contributed by Multi authors. USA ranked 1st with 38.9% publications followed by UK. The highest range being articles in the range of 11-20, 136 (54.6%). The study reveals that there is a continuous growth in publications. The study indicates that University are the major contributions with 207 (83.1%) followed by Research Institute.

KEYWORDS: *Scientometric, Information Technology*

INTRODUCTION:

The focus of Scientometrics is the measurement of science and is therefore concerned with the growth, structure, interrelationship and productivity of scientific disciplines (Hood & Wilson, 2001). Scientometric analysis is a technique to analyze the scientific publication in particular field of science at global level, performance of a country, performance of institutions and individual scientist. (Murugan, C & Balasubramani, R, 2012). Scientometrics is the study of the quantitative aspects of science as a discipline or economic activity. It is part of the sociology of science and has application to science policymaking. It involves quantitative studies of scientific activities, including, among others, publication, and so overlaps bibliometrics to some extent.

Ethics & Information Technology is growth of the Internet, the ability to capture and store vast amounts of personal data, and greater reliance on information systems in all aspects of life have increased the risk that information technology will be used unethically. (Reynolds, G. W, 2011)

SOURCE:

Ethics & Information Technology is a peer-reviewed Journal which published in the year 1999. It publishes from Netherlands (Springer). It dedicated to advancing the dialogue between moral philosophy and the field of information and communication technology (ICT). The journal aims to foster and promote reflection and analysis which is intended to

make a constructive contribution to answering the ethical, social and political questions associated with the adoption, use, and development of ICT.

REVIEW OF LITERATURE:

Dongare and Khaparde (2015) have a analyzed scientometric of 76 articles published in International Journal of Health Informatics in Developing Countries "Online Information Review" during 2011-2015. The study reveals that in all the years under the coverage of the study, the year 2011 shows the maximum number of contributions. Majority of articles are contributed by two authors. Among two authored contributions. Pablo Torres affiliated to Statistics and Epidemiology, RTI International Research Triangle Park, NC, USA is found to be highest score whose contribution is to be found in every issue.

Gopikuttan and Aswathy (2014) the present study evaluates the research productivity of University of kerala based on the data collected from WoS. The study reveals that Chemistry is produces more number of papers while the multi-authorship also possesses a lead role, Indian Journals are the most preferred journals**.**

Gupta and Gupta (2014) have done ten year study. The global share of Indian pneumonia research was 2.74% during 2004-2013. USA contributed the largest share of 50.56% during 2004-2013. Among the subjects, medicine contributed of 76.28% during 2004-2013.

Jeyasekar (2014) the data for the study is obtained from the SCOPUS database. It found that Bruce Budowle is the author who has contributed the highest number of article. Journal of Forensic Sciences almost half of the total forensic science literature. USA contributes 30% forensic science literature**.**

OBJECTIVE:

1. To identify the number of references per article.

2. To know relative growth and doubling time of publication.

3. To identify the authorship pattern of references per articles.

4. To identify the year-wise degree of collaboration.

5. To know the organization wise contribution of articles.

6. To find out the country wise distribution of cited articles.

7. To find out the lengths of articles.

DATA ANALYSIS:

Table No. 1 Average No. of references per Article

Year	Volume No.	No. Of Articles	No. of References	Percentage
2003	31 (1-4)	21	549	8.43
2004	32 (1-4)	24	536	9.63
2005	33 (1-4)	23	436	9.23
2006	34 (1-4)	24	592	9.63
2007	35 (1-4)	25	781	10
2008	36 (1-4)	22	596	8.83
2009	37 (1-4)	29	900	11.6
2010	38 (1-4)	28	1192	11.2
2011	39 (1-4)	27	1228	10.8
2012	40 (1-4)	26	887	10.4
		249	**7697**	**100**

From table and fig no. 1. Attempt was made to find out the references per article during 2003 to 2012 was 7697. It observed that the highest number of references per articles in 2011 i.e. 1228, followed by 1192 citations in the year of 2010. While the lowest number of references per article showed in the 2005, respectively.

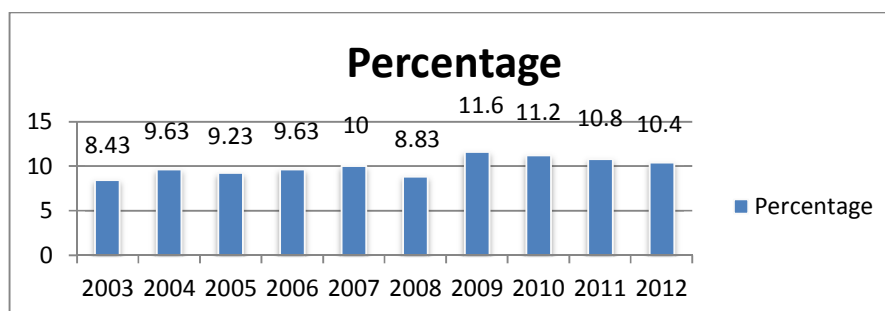### Fig No. 1: Average number of references per article:

Table No. 2 Relative Growth Rate [R(P)] AND Doubling Time]Dt(p)] for Publication

Year	No. Of Article	Cumulative no. of Article	$Log_e 1^p$	$Log_e 2^p$	[R(P)]	Mean [R(P)]	[Dt(P)]	Mean [(Dt(P)}
2003	21	21	-	3.04	-		-	
2004	24	45	3.04	3.80	0.76		0.91	
2005	23	68	3.80	4.21	0.41		1.69	1.54
2006	24	92	4.21	4.52	0.31	0.34	2.23	
2007	25	117	4.52	4.76	0.24		2.88	
2008	22	139	4.76	4.93	0.17		4.07	
2009	29	168	4.93	5.12	0.19		3.64	
2010	28	196	5.12	5.27	0.15		4.62	4.79
2011	27	223	5.27	5.40	0.13	0.15	5.33	
2012	26	249	5.40	5.51	0.11		6.3	

The Relative Growth Rate [R(P)] and Doubling Time [Dt(P)] of publications are derived and presented in Table & Fig. no. 2. It can be noticed that the Relative Growth Rate of publications [R(P)] decreased from the rate of 0.76 in 2004 to 0.11 in 2012. The mean relative growth for the first five years (i.e. 2003 to 2007) showed a growth rate of 0.34 whereas the mean relative growth rate for the lowest five years (i.e. 2008 to 2012) reduces to 0.15. The corresponding Doubling Time for different years [Dt(P)] gradually increased from 0.91 in 2004 to 4.79 in 2012.

Fig No. 2: Relative Growth Rate [R(P)] AND Doubling Time]Dt(p)] for Publication
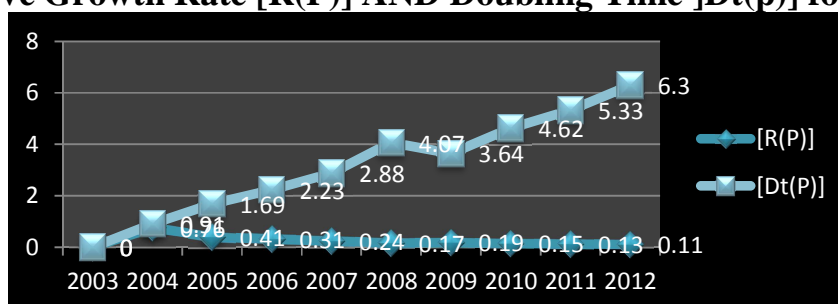
Table No. 3: Authorship pattern of the articles:

Year	Single	Two	Three	More than three	Total
2003	17	3	1	-	**21**
2004	17	5	2	-	**24**
2005	18	4	1	-	**23**
2006	18	5	1	-	**24**
2007	23	1	1	-	**25**
2008	18	3	1	-	**22**
2009	16	6	5	2	**29**
2010	23	5	-	-	**28**
2011	13	6	7	1	**27**
2012	18	6	-	2	**26**
Total	**181(72.6)**	**44(17.6)**	**19(7.63)**	**5 (2.00)**	**249**

Table 3 indicates that the details about the authorship pattern 181(72.6) articles have been contributed by single author 44 articles (17.6%) by two authors and 19 articles (7.63%) by three authors.5 (2.00%) articles by more than three authors.

Fig No. 3 Table No. : Authorship pattern of the articles:
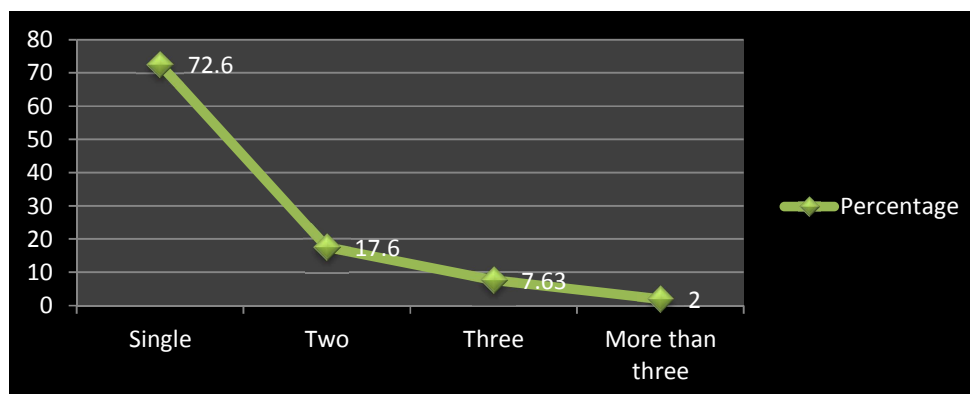
Categories of Authors and Collaborative Researchers:

The Degree of Authors Collaboration is shown in Table No. 4. Various methods have been proposed to calculate the degree of research collaboration. Here in this study the formula proposed by Subramanyam (1983) has been used**.**

The degree of collaboration

$$C = \frac{NM}{Nm+Ns}$$

Where,

C=degree of collaboration

Nm= number of multi author

Ns=number of single author

$$C = \frac{68}{181+68} = 0.27$$

Thus the degree of collaboration (C) 0.27

Table No. 4: Year – Wise Degree of collaboration:

Year	Total No. Of Article	No. of Author	Total No. of Single Author	% of article	No. of Multi Articles	% of articles	Degree of Collaboration
2003	21	26	17	6.82	4	1.60	0.19
2004	24	33	17	6.82	7	2.81	0.29
2005	23	29	18	7.22	5	2.00	0.21
2006	24	31	18	7.22	6	2.40	0.25
2007	25	28	23	9.23	2	0.80	0.08
2008	22	27	18	7.22	4	1.60	0.18
2009	29	51	16	6.42	13	5.22	0.44
2010	28	33	23	9.23	5	2.00	0.17
2011	27	37	13	5.22	14	5.62	0.51
2012	26	40	18	7.22	8	3.21	0.30
Total	249	335	181	72.6	68	27.3	0.27(mean)

Table 4 shows that the single author articles are highest than multi author articles. The single author articles are highest in the year 2007 & 2010 i.e.23 (9.23%) and highest multi author articles are observed in the year 2011 i.e.14 (5.62%).

Table No. 5: Organizational Contributions of Articles

Organization	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
University	21 1	24 1	20 8.69	16 66.6	21 84	21 95.4	20 68.9	22 78.5	22 81.4	20 76.9	**207 83.1**
Research Institute	-	-	3 13.0	8 33.3	4 16	1 4.54	9 31.0	6 21.4	5 18.5	6 23.0	**42 16.8**
Total	**21 8.43**	**24 9.63**	**23 9.23**	**24 9.63**	**25 10.0**	**22 8.83**	**29 11.6**	**28 11.2**	**27 10.8**	**26 10.4**	**249 100**

Authors from Universities are the major contributors with 207(83.1%) contribution from 2003-2012 and followed by research institute with 42 (16.8%) contribution.

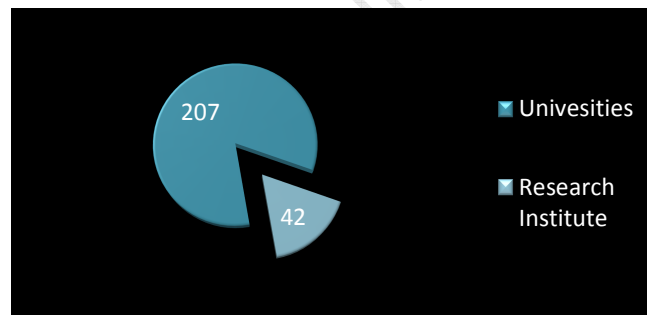## Fig. No. 4: Organizational Contribution of Articles

Table No.6: Country wise Distribution

Country wise	2003	2004	2005	2006	2007	2008	20009	2010	2011	2012	total
USA	12	8	8	6	12	8	17	12	6	8	97(38.9)
U.K	5	3	4	5	4	5	1	3	8	3	41(32.1)
Netherlands	2	6	4	1	1	3	1	5	6	6	35(14.0)
Australia	-	3	1	3	3	-	2	-	4	3	15(6.02)
Canada	1	2	1	-	1	-	-	1	1	2	9(3.61)
Norway	-	-	-	3	1	3	1	-	-	-	8(3.21)
Germany	-	2	1	1	-	1	1	-	-	-	6(2.40)
Belgium	-	-	-	-	-	-	-	4	-	-	4(1.60)
Others	1		4	5	3	2	6	3	2	4	30(12.0)
Total	21	24	23	24	25	22	29	28	27	26	249

The country having a maximum number of 7697 citations appended in 249 articles have been considered. The study regarding the country wise distributions of citations has been done in order to know the most dominant countries in which the information is cited. Table reveals that USA, UK, Netherlands have 97(38.9%), 41(32.1%), 35(14.0%), respectively.

Table No. 7: Length of Articles

No. of pages	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	total	%
01-10	9	15	14	11	10	11	15	6	7	11	109	43.7
11-20	11	9	9	13	15	11	14	22	17	15	136	54.6
21-30	-	-	-	-	-	-	-	-	3	-	3	1.2
31-40	1	-	-	-	-	-	-	-	-	-	1	0.4
Total	**21**	**24**	**23**	**24**	**25**	**22**	**29**	**28**	**27**	26	**249**	100

Out of 249 articles 136 (54.6%) had 11-20 pages followed by 109(43.7%) had 01-10 pages.

The lowest range being articles in the range of 31-40 only 1 (0.4%).

Fig. No.5 Length of Article
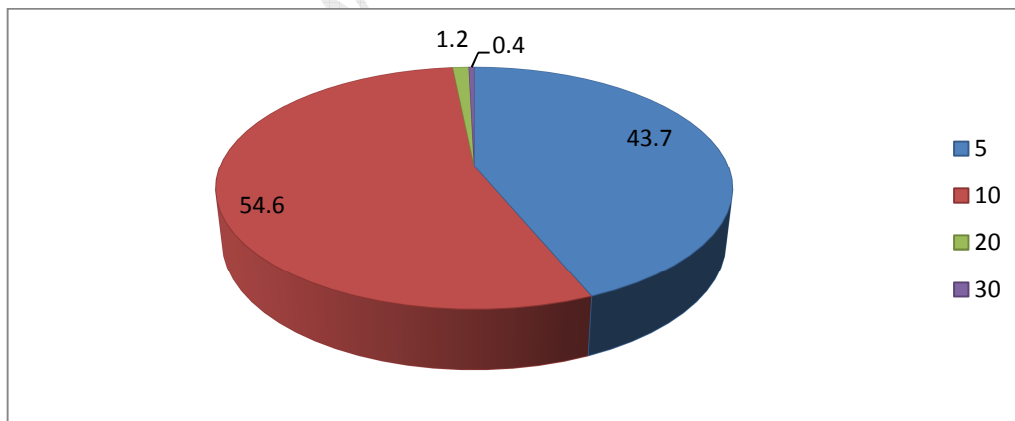
FINDING AND CONCLUSION:

The findings are based on the analysis of collected data appended in 249 articles and 7697 references in Ethics & Information Technology**.**

1. The highest number of references per articles in the year of 2011.

2. The mean relative growth for articles in the first five years 2003 to 2007 is (0.34) reduced to (0.15) in the year 2008 to 2012.

3. The number of single authors 181 (72.6) and more than three is the lowest authors 5 (2.00).

4. The Single authors higher and predominant than Multi authors.

5. Universities are the major contributors with 207 (83.1) from 2003 to 2012 and followed by research institute with 42(16.8).

6. USA, UK, Netherlands have the majority of most cited records in 'Ethics & Information Technology'.

7. 136 (54.6) of publications have pages length from 11 to 20, followed by 109 (43.7) have pages length from 1 to 10.

REFERENCES:

- Dongare, S and Khaparde, V Dr. (2015): Scientometric analysis of International journal of health informatics in developing countries. Knowledge Librarian. 2(5), pp.221-237.

- Gopikuttan, A. and Aswathy, S. (2014): Publication Productivity of University of Kerala: A Scientometric View. DESIDOC Journal of Library & Information Technology. 34(2), pp. 131-139.

- Gupta, B. M and Gupta, R. (2014): "Pneumonia Disease Research in India: A Scientometric Study during 2004-13" *Library Philosophy and Practice (e-journal).* Paper 1154. http://digitalcommons.unl.edu/libphilprac/1154

- Hood, William W.; & Wilson, Conception S. (2001a). The Literature of Bibliometrics, Scientometrics and Informetrics, Scientometrics, 52(2), pp.291-314.

- Jeyasekar, J. J. (2014): A Scientometric Snalysis of Global Forensic Science Research Publications. *Library Philosophy and Practice (e-journal).* Paper 1024. http://digitalcommons.unl.edu/libphilprac/1024

- Murugan, C. and Balasubramani, R. Dr. (2012) Scientometric Mapping of Remote Sensing Research Output: A Global Perspective. Library Philosophy and Practice (e-journal*).* Paper 801. http://digitalcommons.unl.edu/libphilprac/801

- Reynolds, G. W (2011): Ethics & Information Technology, 4th edition, Course Technology.