

AUTHORSHIP PATTERN AND COLLABRATIVE RESEARCH IN JOURNAL OF HEALTH INFORMATICS IN DEVELOPING COUNTRIES

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ABSTRACT: - *Authorship trends and collaborative research are studied in Journal of Health Informatics in Developing Countries containing 78 articles during the period of 2011-2015. For the analysis of the study 5 volumes containing 10 issues have been taken up for evaluation. The paper covers the authorship trends of average no. of references per articles, Relative Growth Rate & Doubling Time of publications, Form wise distribution, authorship patterns, Single and Multi-Authored Research Articles by Year, Organizational contributions of articles, Country-wise distribution of articles and Length of articles.*

KEY WORDS – *Health Informatics, Developing, Scientometrics*

Introduction:

Scientometrics is the science of measuring and analysis science. In practice, Scientometrics is a formed structure part of science of science methodology including the complex of mathematical and statistical method, used to analysis the quantitative characteristic of science as an enterprise. In 1960, Vassily V. Nalimove had coined the term scientometrics. Modern Scientometrics is primarily based on the work of Derek J. de Solla Price and Eugene Garfield. Scientometrics is a discipline which analyses scientific publications to explore the structure and growth of science Rajendran (2011).

The Journal of Health Informatics in Developing Countries (JHIDC) publishes two volumes every year, in December and in June. Knowledge on health and medical informatics in developing countries is scarce. This health informatics journal has therefore been launched to focus on and promote research, experience and discussions related to health informatics in developing countries. Authors from developing countries are particularly encouraged to contribute in this area.

Review of Literature:

Arya & Sharma (2011): highlighted the collaboration in research and authorship trend in the area of veterinary sciences all over the world with special reference to India. The study is based on the data collected from 'CABI abstracts' for the period of 2006-2010. The findings of the study revealed that collaborative research has been preferred by the scientists over that of solitary research. Average degree of collaboration was found 0.84, which also indicates dominance of collaborative research over solo research. Subject analysis showed a good research in the area of animal nutrition and veterinary physiology.

Bala & Singh (2014) conducted scientometric study. Study reveals that single author contributed 18(5.7%). Most of contributions journal from India. Maximum number of articles 48.7% has the length of 3-6 pages. A highly cited Journal IJBB by contributors is Journal of Bio-Chemistry.

Barik & Jena (2014) analyzed the growth of Library and Information Science (LIS) research articles in India. It covers a total of 385 article indexed by Scopus database during the period of 2004-2013. In this study the authors have tried to analyze the annual growth of LIS research publications in India and to identify the authorship pattern, authors' productivity and degree of collaboration. Lotka's inverse square law has been applied to identify the productivity of authors and

Bradford's law has been applied to identify the scattering of core journals.

Dutt & Nikam (2013) the study examines solar cell research in India. It was seen that academic institutions contributed about half of the total output. Solar cell research by Indian scientists is well connected to international research trends. **Goyal & et al.** (2013) Authorship trends and collaborative research are studied in the field of Chemical Sciences based on the data collected from Indian Journal of Chemistry Section-B (IJCB) published during the 2002-2011. Outcome of the study shows that multi authored articles 97.24% prevail the single authored articles 2.75%. The degree of collaboration in the field of chemical sciences is 0.97.

Goyal & et al. (2013) Authorship trends and collaborative research are studied in the field of Chemical Sciences based on the data collected from Indian Journal of Chemistry Section-B (IJCB) published during the 2002-2011. Outcome of the study shows that multi authored articles 97.24% prevail the single authored articles 2.75%. The degree of collaboration in the field of chemical sciences is 0.97. Average number of authors per paper varies from 3.21-3.78.

OBJECTIVE:

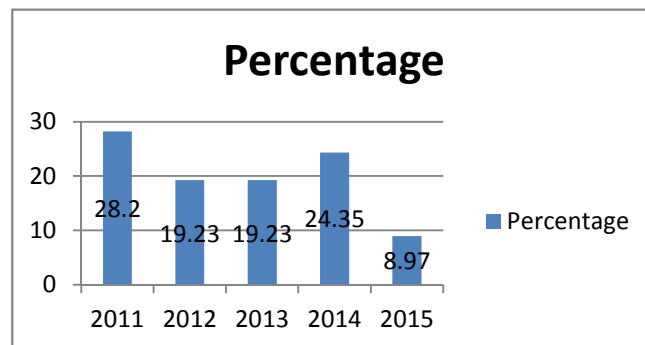
1. To identify the number of references per article.
2. To know relative growth and doubling time of publication.
3. To identify the authorship pattern of references per articles.
4. To identify the Single and Multi-Authored Research Articles by Year.
5. To know the organization wise contribution of 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	% of Articles
2011	5 (1-2)	22	632	28.20
2012	6 (1-2)	15	415	19.23
2013	7 (1-2)	15	427	19.23
2014	8 (1-2)	19	658	24.35
2015	9 (1-2)	07	230	8.97
		78	2362	100

Fig. No. 1 Average No. of references per Article



From table and fig no. 1. Attempt was made to find out the references per article during 2011 to 2015 was 2362. It observed that the highest number of references of articles in 2014 i.e. 658. While the lowest number of references per article showed in the year respectively.

2. Relative Growth Rate [R(P)] AND Doubling Time [Dt(p)]

Relative Growth Rate (RGR) is a measure to study the increase in number of articles/pages per unit of articles/ pages per unit of time (Mahapatra, 1985).

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

Year	No. Of Articles	Cumulative no. of Articles	Log _e 1 ^p	Log _e 2 ^p	[R(P)]	Mean [R(P)]	[Dt(P)]	Mean [(Dt(P))]
2011	22	22	-	3.091	-	0.25	-	2.59
2012	15	37	3.091	3.610	0.519		1.335	
2013	15	52	3.610	3.951	0.341		2.032	
2014	19	71	3.951	4.262	0.311		2.228	
2015	07	78	4.262	4.356	0.094		7.372	

The Relative Growth Rate [R (P)] and Doubling Time [Dt (P)] of Publication in Table No.2 & fig. 2. It can noticed that the Relative Growth Rate of Publication[R (P)] lightly decrease from the rate of 0.519 in 2012 to 0.094 in 2015. The mean relative growth (i.e. 2011 to 2015) showed a growth rate of 0.25. The corresponding Doubling Time for different years [Dt (P)] highly increased from 1.336 in 2012 to 7.372 in 2015. Thus as the rate of growth of publication was decreased, the corresponding Doubling Time was increased.

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

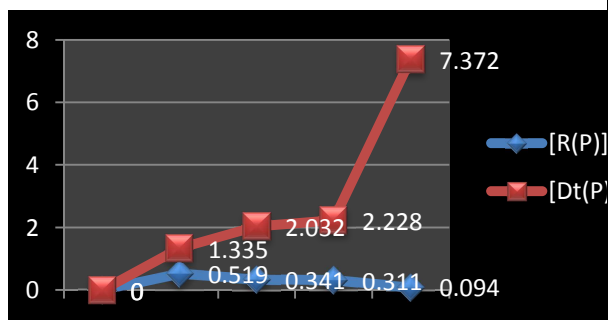


Table No.3: Authorship Patterns

Authorship Pattern	2011	2012	2013	2014	2015	Total
Single	8	2	2	6	1	19 (24.3%)
Two	5	2	3	3	-	13 (16.6%)
Three	2	6	6	4	5	23 (29.4%)
More than Three	7	5	4	6	1	23 (29.4%)
Total	22	15	15	19	07	78

Fig. No. 3: Authorship Patterns

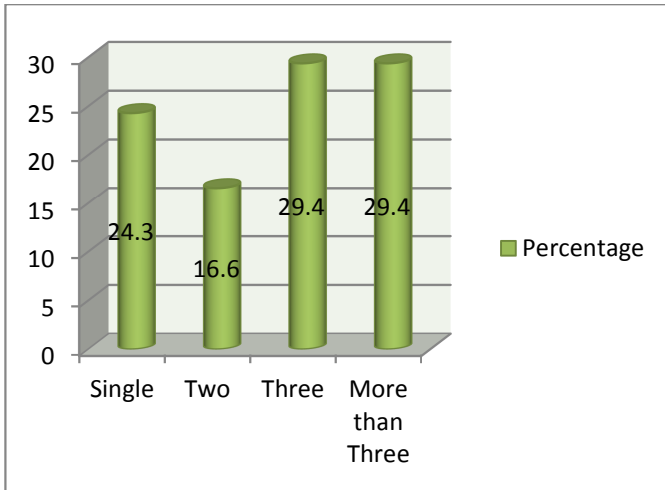


Table no 3 fig no 3, identified the distribution of articles according to the number of contributors. It shows that the number of Three and More than three authors 3 (29.4%) and Double author is the lowest authors 13 (16.6%).

Table No. 4 Single and Multi-Authored Research Articles by Year

Sl.No	Year	Single Authored		Multi Authored		Total	%
		Articles	%	Articles	%		
1	2011	08	42.1	14	23.7	22	28.2
2	2012	02	10.5	13	22.0	15	19.2
3	2013	02	10.5	13	22.0	15	19.2
4	2014	06	31.5	13	22.0	19	24.3
5	2015	01	5.26	6	10.1	07	8.97
Total		19 (24.3)	100	59 (75.6)	100	78	100

Table No. 3 show single and multi-authorship pattern by year. Multi authored articles 59 (75.6%) were dominant in early years. 2014 and

2015; there is a remarkable increase of multi-authored articles.

Table No. 5: Organizational Contributions of Articles

Organization	2011	2012	2013	2014	2015	Total	%
University	20	11	10	14	2	57	73.7
Research Institute	2	4	5	5	5	21	26.9
Total	22	15	15	19	07	78	100

Fig No. 4: Organizational Contributions of articles

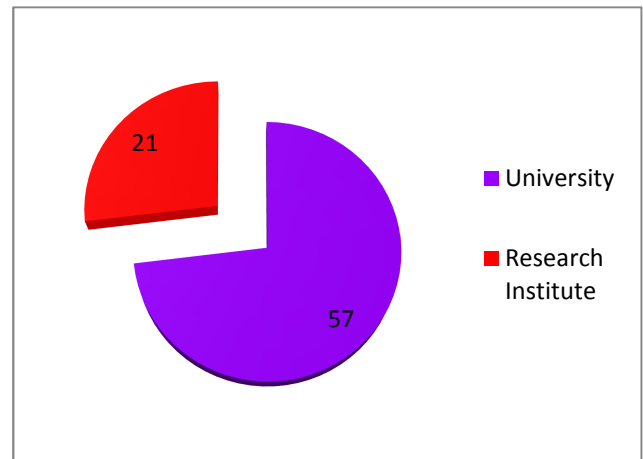


Table No 5 and fig no 4, it is seen that universities are the major contributors with 57 (73.7%) contributions during the period 2011 to 2015. While the research institutions contributed 21 (26.9%) Contributions.

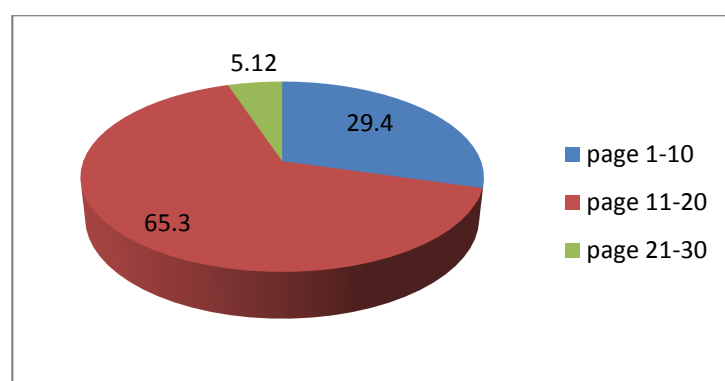
Table no 6. Country-wise distribution of citations

Country wise	2011	2012	2013	2014	2015	Total
Saudi Arabia	2	2	1	4	2	11 (14.1%)
India	3	3	1		-	7 (8.97%)
Malaysia	1	3	-	2	-	6 (7.69%)
Norway	1	1	3		1	6 (7.69%)
Australia	-	-	1	3	1	5 (6.41%)
Iran	4	-	-	1	-	5 (6.41%)
UK	-	2	1	-	-	3 (3.84%)
Nigeria	1	-	1	-	1	3 (3.84%)
USA	1	-	-	1	1	3 (3.84%)
Sri Lanka	1	1	-	-	-	2 (2.56%)
South Africa	1	-	-	1	-	2 (2.56%)
Egypt	-	1	1	-	-	2(2.56%)
Others	7	2	6	7	1	15 (19.2%)
Total	22	15	15	19	07	78

The Study regarding the country wise distribution of citations had been done in order to know the most dominant countries in which the records are cited. It revealed that Saudi Arabia, India, Malaysia and Norway have the majority of most cited records; 11 (14.1%); 7 (8.97%); 18 (7.69%) & France have 6 (7.69%), respectively

Table No.7 Length of Articles

No. of Pages	2011	2012	2013	2014	2015	Total	%
01 - 10	5	6	2	8	2	23	29.4
11 - 20	15	9	13	9	5	51	65.3
21 - 30	2	-	-	2	-	4	5.12
31 - 40	-	-	-	-	-	-	-
Total	22	15	15	19	7	78	100

Fig No. 5 Length of Articles

Out of 78 Contributions 23 Contributions (29.4%) have page length of 1-10 pages while 51(65.3%) have length of 11-20 pages. The lowest range being articles in the range of 21-30 4 (5.12%) respectively.

Finding and conclusion:

1. The highest number of references per articles in the year of 2014.
2. The corresponding Doubling Time for different years [Dt (P)] highly increased from 1.335 in 2012 to 7.372 in 2015.
3. The number of More than three authors 23 (29.4%) and Single is the lowest authors 19(24.3%).

4. The Multi authors higher and predominant than Single authors.
5. Universities are the major contributors with 57 (73.6%) from 2011 to 2015 and followed by research institute with 21(26.9%).
6. Saudi Arabia, India, Malaysia and Norway have the majority of most cited records in 'Journal of Health Informatics in Developing Countries'.
7. 51 (65.3%) of publications have pages length from 11 to 20, followed by 23 (29.4%) have pages length from 1 to 10.

References:

- **Arya, C. & Sharma, S.** (2011). Authorship trends and collaborative research in veterinary sciences: A bibliometric study. *Chinese Librarianship: an International Electronic Journal*, 34. URL: <http://www.iclc.us/cliej/cl34AS.pdf>
- **Bala, Madhu & Singh, M P** (2014) A SCIENTOMETRIC STUDY OF JOURNAL OF BIO-CHEMISTRY AND BIOPHYSICS (IJBB)" (2014). *Library Philosophy and Practice (e-journal)*. Paper 1168. <http://digitalcommons.unl.edu/libphilprac/1168>
- **Barik, N. & Jena, P. Dr.** (2014). Growth of LIS Research Articles in India seen through Scopus: A bibliometric analysis. *Library Philosophy and Practice (e-journal)*. Paper 1133. <http://digitalcommons.unl.edu/libphilprac/1133>
- **Dutt, B and Nikam, K** (2013) solar cell research in India: A scientometric profile. *Annals of Library and Information Studies*. 60; pp. 115-127.
- **Derek, De Solla.** (2000). A study of learning and retention with a web-based IR interface journal of *Librarianship and information science* 37(1),7-16.
- **Goyal, V. Kumar, G. & Kumar, A.** (2016). Authorship Patterns and Collaborative Research Trends in the Field of Chemical Sciences. *International of Information Dissemination and Techology*, 3(3), pp. 184-186.
- **Eugene, Garfield.** (2002), Scientometric indicator data files. A multidimensional machine readable database for evaluative purposes. *Scientometrics*, 28 (1993) 137-150.
- **Rajendran, P Dr, Jayshankar, R Dr, Elango, B** (2011) Scientometric Analysis of contributions to Journal of Scientific and Industrial Research. *International Journal of Digital Library Services*. 1(2); pp. 79-89.