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Research Article

RESEARCH PRODUCTIVITY ON IMMUNOLOGY DURING THE YEAR 2015-2017: A SCIENTOMETRIC STUDY

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ABSTRACT

The present analyses the growth pattern of Immunology Research publications from web of science database. Publication output on for the duration of the period 2015-2017 (on November 14- 2017) was taken from the study. The downloaded data was Web of Knowledge-Science and were analyzed with the Bibexcel tool. The study covers a scientoemtric analysis of publications on immunology in worldwide research. The investigate output is based on the data from Year of publications, Relative Growth and Doubling Time, Language wise distribution, Document brand of Publications, Authorship Pattern, Degree of Collaboration and also etc. Hence, the present study encouraged the authors will help for produce additional publications and to create awareness of Immunology follow a line of investigation in the society.

INTRODUCTION

Scientometric is the study of measuring and analyzing the science, technology and innovation. The term "Scientometrcis" has been first used as a translation of the Russian term "naukometriya" (measurement of science) coined by Nalimov and Mulchenko (1996). The research area of Scientometrics began during the second half of the 19th century. It has over 100 years of history. During this time, scientific studies of Scientometrics shifted from the unconscious to consciousness, from qualitative research to quantitative research, and from external description to detailed study revealing the inherent properties of scientific protection.

This paper consists of four main Parts: Introduction, Review of Literature, Data analysis, and Conclusion.

Scientometric

A complex of quantitative Mathematical and Statistical methods used to investigate such aspects as research staff and to define evolutionary and prospectus of science (Bonitz, 1999). Scientometrics is a very recent term. It is often used synonymously with the term bibliometrics.

Originated an in Russian tern for the application of quantitative methods in the history of science, but its scope and objectives have wielded. This term was introduced and came into Prominent with the founding of the journals scientometric by "T. Braunin, 1977 originally published in Hungary and currently broad Amsterdam". The scientometric is part of the sociology of science and application to science policy making.

Immunology

The word immunity was derived from the Lain word "immunis" meaning exempt. Immunology deals with physiological functioning of the immune system in states of both health and disease as well as malfunctions of the immune system in immunological disorders like allergies, hypersensitivities, immune deficiency, transplant rejection and autoimmune disorders. The Immune system protects us from attack by microbes and worms. It use specialized organs designed to filter out and respond to microbes entering the body's tissues and a mobile force of molecules and cells in the bloodstream to respond rapidly to attack.

REVIEW OF LITERATURE

Raj Kumar Bhardwaj (2016) the study on the analysis of Ebola Virus: A Scientometric Study of World Research Publications. These publications have received 69,960 citations until March 1, 2015. The maximum published in the form of articles and review, 2040 (83.40%). The highest number of papers was

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published in 2012, i.e., 198 (8.1%).Top ten countries produced 2124 (86.8%) of the total research publications on Ebola virus. Swapan Kumar Patra and Prakash Chand (2007) this article looks at the growth over time of Indian AIDS research output based on bibliographic data from Pub Med and Web of Science. The yearly analysis of data shows that there is a rapid growth of literature from 1992 onwards. Still, in an international sense, relative productivity of India is low and requires more focused research and development.

Bhardwaj (2014) evaluated the global publication output on dengue during 2001-12 using data obtained from Scopus. The total publication was 9618. During the period 2001-12, annual growth rate was 13.4 percent, compared to 14.31 percent in the period 2001-2006, and 12.48 percent in 2007-2012.

Gupta et al. (2011) analyzed the Indian research output in diabetes during 1999-2008. By referring to Scopus database, the data was retrieved on the following parameters its growth, rank of global publications share, citation impact, overall share of international collaborative papers, and share of major collaborative partners. The publication share of India was also compared with China, South Korea and Brazil.

Jeyachitra (2009) made a Scientometric study on Biomedical Science for the period of 1998 -2007. In this study analyses growth literature, authorship pattern, country wise distribution, citation analysis etc. The study has examined that totally 785. This study examined totally 33611 citations published for the study period. The overall journal citation is calculated the journal self-citation is 24.46 percent.

Objective of the Study

- To examine year wise Publication of research output
- To identify the Relative Growth Rate and Development of research output
- To identify the Language wise distribution of research output
- To identify the Document type and source wise distribution
- To identify the Authorship pattern wise distribution of research output
- To identify the proportion of single and multi authored papers and the degree of collaboration
- To identify the Source wise Publication of research output

Scope, Methodology and limitation of the study

The source of data to the present study is Thomson Reuters' Web of Science (WoS). The study attempts to analysis the research performance of Immunology research. It aims to identify the field of various documents. The study is to examine the Relative Growth Rate and Doubling time of publication during the study period. The author's Productivity and degree of collaboration in research output are also brought under the purpose of the study. The study period was 2015 to 2017 (on the date of November 14 - 2017). A total of 5636 records were downloaded and analyzed by using the BibExcel and MS- Excel as per the objectives of the study.

DATA ANALYSIS AND DISCUSSION

Year wise distribution of publications

The data has been Collected "Immunology" for 2015 - 107(November 14 2017). They are categorized below in Table 1 for the total number of Records and their percentage**.**

Year	Records	Cumulative	%	Cumulative %
2015	1845	-	32.74	-
2016	2106	3951	37.37	70.11
2017	1685	5636	29.89	100
Total	5636		100	

From the table 1 is observed that the year wise distribution of publications. The highest number of contribution 2106 (37.37%) were published in the year 2016 and lowest number of contributions were 1685 (29.89%) in the year of 2017 (November 14).

Relative Growth Rate and Doubling Time publication

The Relative Growth Rate [R(P)] and Doubling Time [Dt(P)] of publication in Table No.2. It can noticed that the Relative Growth Rate of publication [R (a)] decrease from the rate of 0.76 in 1991 to 0.26 in 1995. The mean relative growth rate was 0.37. The corresponding Doubling Time for 0.91 2016 to 1.92 in 2017 (November). The mean Doubling Time the five years in 1.486. Thus as rate of growth of publication was decreased the corresponding Doubling Time was increased.

Year	Records	Cumulative	Log 1 W1	Log 2 W2	R (a) (W1-W2)	Mean (a)	Doubling Time Dt (a)	Mean Dt
2015	1845	1845	-	7.52	-		-	
2016	2106	3951	7.52	8.28	0.76	0.37	0.91	0.94
2017	1685	5636	8.28	8.64	0.36		1.92	

Language wise publication

The below table 3 shows the dissemination of Immunology research by the language wise publication. This phenomenon is not an exception to the subject of Immunology research which published about 5478 (97.19%) of the research output in English. This is followed by German 59 (1.03%) and Spanish 28 (0.49%) as second and third positions respectively. The last position of language is Japanese 1 (0.02%).

S. no	Language	Records	Cumulative	%	Cumulative %
1	English	5478	-	97.19	-
2	German	58	5536	1.03	98.22
3	Spanish	28	5564	0.49	98.71
4	French	22	5586	0.39	99.1
5	Polish	10	5596	0.18	99.28
6	Turkish	9	5605	0.15	99.43
7	Russian	7	5612	0.12	99.55
8	Portuguese	6	5618	0.10	99.65
9	Hungarian	5	5623	0.09	99.74
10	Korean	4	5627	0.07	99.81
11	Czech	2	5629	0.03	99.84
12	Greek	2	5631	0.03	99.87
13	Ukrainian	1	5632	0.02	99.89
14	Italian	1	5633	0.02	99.91
15	Chinese	1	5634	0.02	99.93
16	Norwegian	1	5635	0.02	99.95
17	Japanese	1	5636	0.02	100
Total		5636		100	

Document type of publication

During the study period Out of 5636 publications most of publications 3678 (65.26%) were found as 'Articles' followed by 1194 (21.18%) review; 269 (12.44%) 'Editorial Material' and other type of publications Meeting Abstract, Proceedings papers, note, book review, reprint, bibliography etc. were

below in table 4. It makes to understand that most preferred publishing channel of the researcher were journal articles.

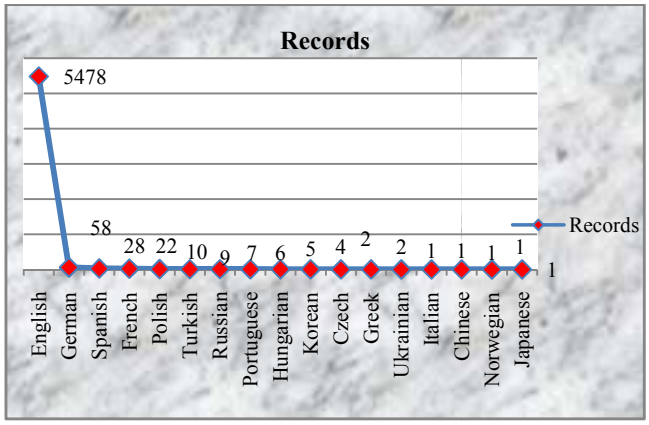

Fig No. 1 Language wise publication

Name of the Document	Records	Cumulative	%	Cumulative %
Article	3678	-	65.26	-
Review	1194	4872	21.18	86.44
Editorial Material	417	5289	7.39	93.83
Meeting Abstract	193	5482	3.42	97.25
Article; Proceedings Paper	45	5527	0.79	98.04
Review; Book Chapter	34	5561	0.60	98.64
News Item	27	5588	0.48	99.12
Letter	21	5609	0.37	99.49
Biographical-Item	9	5618	0.15	99.64
Article; Book Chapter	7	5625	0.12	99.76
Book Review	4	5629	0.07	99.83
Correction	3	5632	0.05	99.88
Editorial Material; Book Chapter	3	5635	0.05	99.93
Meeting Summary	1	5636	0.02	100
Total	**5636**		**100**	

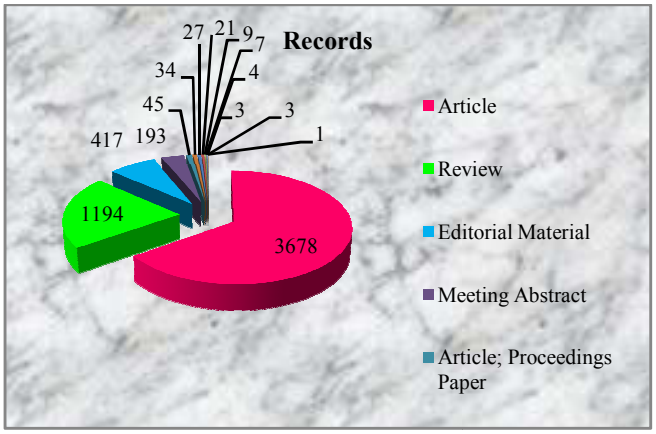

Fig No. 2 Document wise distribution

Authorship Pattern wise distribution

Table 5 - it can be seen that the first position author contributions are two authors 798 (14.15%) followed by three authors contributions 758 (13.44%). More than 10 authors were 685 (12.15%) and four authors were 630 (11.17%). Finally 10 Authors were published 4190 (3.37%) articles.

Degree of Collaboration of Immunology research

In order determine the Degree of Collaboration (DC), the following formula suggested by Subramanyam K (1983) has been used.

DC = Nm/Nm+Ns

Where, DC = Degree of Collaboration in the discipline

Nm = Number of multiple Authored Papers in the discipline

Ns = Number of single Authored Papers in the discipline

= 5077 / 5507+559

= 5077 / 5636

= 0.90

S.No	Number of authors	Records	Cumulative	%	Cumulative %
1	1 Author	559	-	9.91	-
2	2Authors	798	1357	14.15	24.06
3	3 Authors	758	2115	13.44	37.5
4	4Authors	630	2745	11.17	48.67
5	5Authors	558	3303	9.90	58.57
6	6Authors	471	3774	8.35	66.92
7	7Authors	404	4178	7.16	74.08
8	8Authors	335	4513	5.94	80.02
9	9Authors	248	4761	4.40	84.42
10	10Authors	190	4951	3.37	87.79
11	>10Authors	685	5636	12.15	100
	Total	**5636**		**100**	

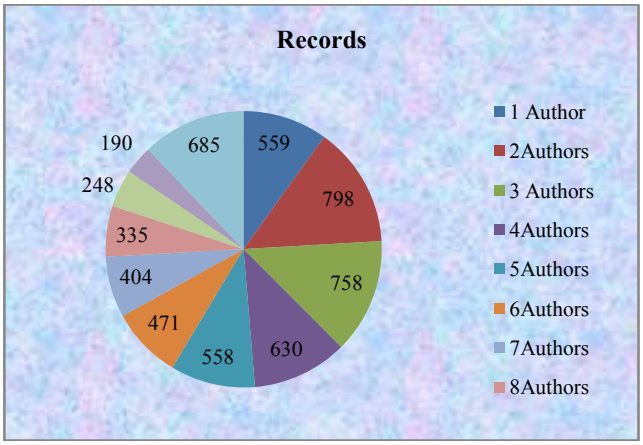

Fig No 3 Authors wise distribution

The degree of collaboration for any subject range from 0.01 to 0.99. Thus the degree of Collaboration (C) during the overall 3 years 2015-2017 (November 14 2017). The degree of collaboration of the Immunology research in the value of 0.90.

S.No	Number of authors	Records	%
1	Single author	559	9.91
2	Multi authors	5077	90.08
	Total	5636	100

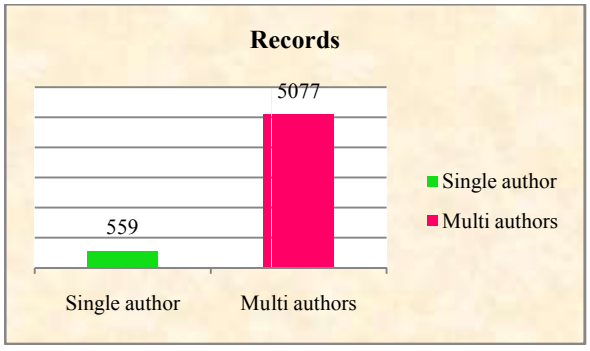

Fig No 4 Authors wise distribution

CONCLUSION

Concluding results from the analysis of collected data in Web of Science. The findings of the study showed that Research productivity on Immunology during the year 2015-2017: A Scientometric Study. This study presented in a manner corresponding to objectives of the study. In the Year-wise

distribution, 5636 articles were published during 2015-2017 (14 November 2017) in the Immunology research. Maximum numbers of articles were published in the year 1995 with 487 (22.52%) articles and minimum number of articles published in 1991 with 377(17.43%) articles. that the Relative Growth Rate of publication [R (P)] decrease from the rate of 0.76 in 1991 to 0.26 in 1995. The mean relative growth rate was 0.35. The corresponding Doubling Time for 0.91 1991 to 2.67 in 1995. The mean Doubling Time the five years is 1.486. Thus as rate of growth of publication was decreased the corresponding Doubling Time was increased. The language wise English 1967 (90.98%) is most important language found during the study. In Authorship pattern, of the total number of the 5636 articles, 559 (9.92%) articles are written by single author, 5077 (90.08%) articles are written by multi author.

References

Raj Kumar Bhardwaj, **"**Ebola Virus: A Scientometric Study of World Publications" *Journal of Scientometric Research*, Pp. 34-42, 2016.

Swapan Kumar Patra, Saroj Mishra, "Bibliometric study of bioinformatics literature" *Scientometrics,* Vol. 67(3), pp. 477-489, 2006.

R K, Bhardwaj, "Dengue fever: A Bibliometric analysis of India's contributions to the research literature of this dangerous tropical disease" *Science & Technology Libraries*, Vol. 33(3), pp. 289, 2014.

B M., Gupta, and A. Bala, "Mapping of Tuberculosis Research in India: A Scientometric Analysis of Publication Output during 1998- 2009" COLLNET *Journal of Scientometrics and Information Management*, Vol. 5 (1), pp. 33-51, 2011.

S. Jeyachitra, "Scientometric study on Biomedical Science" Bharathidasan University: Thesis, pp. 220-225, 2009.

Grant Lewison, Philip Roe, "Lung cancer researchers, 2008–2013: their sex and ethnicity" *Scientometrics*, pp. 1-13, 2016.

Vaishali Khaparde, and Shubhangi Pawar, "Authorship Pattern and Degree of Collaboration in Information Technology" *Journal of Computer Science & Information Technology*, pp. 1-9, 2013.

A. Thirumagal, "Bibliometric study of Nanotechnology in India: an analysis" *SRELS Journal of Information Management,* Vol. 49 (5), pp. 577-587 2012.

I. Ya, Yashin, and A. Ya, Yashin, "Current Trends in Gas Chromatography Methods and Instrumentation: A Scientometric Study" *Journal of Analytical Chemistry,* Vol. 56, (3), pp.200-213, 2001.

P. Rajendran, and R. jeyshankar, Scientometric analysis of Contributions to Journal of Scientific and Industrial Research" *International Journal of Digital Library Services,* Vol. 1 (2), pp. 1-11, 2011.

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