



## SCIENTIFIC CONTRIBUTIONS IN CURRENT SCIENCE JOURNAL: A TREND ANALYSIS

**K. Sivakumaran<sup>1</sup> and Dr. K. Sanjeevi<sup>2</sup>**

<sup>1</sup>Ph.D. Research Scholar, Department of Library & Information Science  
Annamalai University, Annamalaiagar.

<sup>2</sup>Assistant Professor & Research Supervisor, Department of Library & Information Science  
Annamalai University, Annamalaiagar .

### ABSTRACT :

*The research contribution in Science discipline is increasing year by year. The present study has analyzed the trend analysis in Current Science Journal from 2013 to 2017. The year-wise publication with comparison of Compound Annual Growth Rate [CAGR], degree of collaboration, Exponential growth rate and Average pages per publication are also analyzed.*



**KEYWORDS :** *Current Science Journal, CAGR, Degree of Collaboration, Exponential Growth Rate.*

### INTRODUCTION

In Library and Information Science subject, the Bibliometric is one of the important thrust area to do Research used to study of documents and patterns of publications in which mathematical and statistical methods have been applied. Alan Pritchard (1969), has coined the word Bibliometric. The Bibliometrics is the organization classification and quantitative evaluation of publication patterns of all macro and micro communication along with their authorships by mathematical and statistical calculus (Sengupta, 1985). The present has analyzed the trend analysis on scientific growth in Current Science Journal over a period of five years from 2013 to 2017.

### REVIEW OF LITERATURE

The review of previous study is a significant and primary component in any research investigations. It enables to understand the earlier research interests, research pattern and magnitude of research output in the field of knowledge. More number of research works have been carried out in the present study. Few related literatures on Bibliometrics were given below.

Pratt (2002) has analyzed literature of AIDS for the period from 1981 to 1990 from MEDLINE source. This study reported growth statistics for AIDS literature, number of different languages, countries of publication, and number of periodical titles. The AIDS literature grew from fewer than 700 entries from 1981 to 1983 to a cumulative total of 29,077 entries by the end of 1990. The greatest relative expansion came in 1983 with a 24-fold increase compared to the previous years.

Sadik Batcha and Baskaran (2007) have analyzed the publication activity of G8 countries on cardiology output of USA, UK, Japan, Italy, Germany, France, Canada, and Russia. Most of the prolific institutions are located in G5 countries and produced 13028 records in the period from 1964 to 2006.

The collaborative performance of authors compete single author contribution and the United States contribution is higher when compared to other countries contribution on Forensic Medicine Literature during 1981-2011 (Jayapriya and Sivaraman, 2012). Viswanathan and Tamizhchelvan (2015) have analyzed the Indian contributions on spacecrafts research during 1979-2013. Suresh Kumar (2016) has done evaluative study on author productivity applied Lotka's Law in artificial neural network in India from 1991 to 2014. The productivity of authors on the publications in the Journal of documentation from 2003 to 2015 was studied by Suresh Kumar (2017). The study revealed that majority of the publications was published with single author.

### OBJECTIVES

The major objective of the present study is:

- ✓ To study the year-wise and trend analysis with comparison of Compound Annual Growth Rate.
- ✓ To find out the Degree of Collaboration on published articles.
- ✓ To analyze the Exponential Growth rate.
- ✓ To examine the average pages per publications during the study period.

### METHODOLOGY

The primary data for the present study has been collected from the Web of Science database. The journal articles, books, websites were used as a secondary sources.

### RESULTS

The year-wise and growth of publications during the study period is calculated and presented in Table-1.

**Table - 1 Year-wise growth rate**

S. No.	Year	Publications	%	% years CARG
1	2013	54	11.34	0.235
2	2014	74	15.55	
3	2015	78	16.39	
4	2016	115	24.16	
5	2017	155	32.56	
Total		476	100	

From the above table, it is clearly noticed that the highest number of articles contributed (155 articles) in 2017 and lowest contributions (54 articles) in 2013. The year-wise growth rate trend is in increasing order with the range of 11.35% to 32.56%. The Compound Annual Growth Rate during the study period is 0.235%

The formula applied for Compound Annual Growth Rate is

$$CAGR = \left( \frac{\text{Ending Value}}{\text{Beginning Value}} \right)^{\left( \frac{1}{\# \text{ of years}} \right)} - 1$$

To find out the degree of collaboration, the formula given by Subramanyam (1983) was used.

$$C = NM / NM + NS$$

Where,

C = Degree of collaboration in discipline

Nm = Number of multiple authored papers

Ns = Number of single authored Papers

**Table - 2 Degree of collaboration**

S. No	Year	Single Author	Multi Author	Degree of Collaboration
1	2013	6	48	0.89
2	2014	9	65	0.88
3	2015	15	63	0.81
4	2016	28	87	0.76
5	2017	32	123	0.79
Total		90	386	0.83

The analyzed results given on above table clearly show that the multiple author contributions were higher compared to single author contribution during the study period. The trend on degree of collaboration values has minor fluctuations between 0.89 and 0.83.

The exponential growth rate of the published articles during the study period has analyzed and given in Table-3.

**Table - 3 Exponential Growth Rate**

S. No	Year	Publications	Exponential Growth Rate
1	2013	54	1.37
2	2014	74	1.05
3	2015	78	1.47
4	2016	115	1.35
5	2017	155	1.37
Total		476	1.31

The computed values of Exponential Growth show in increasing and decreasing order with ranges from 1.37 to 1.31 when compared to the year-wise publication.

The average pages per publication is analyzed and presented in Table-4.

**Table - 4 Average Pages per Publication**

S. No.	Year	Publications	Total Pages	Average Pages per publication
1	2013	54	495	9.17
2	2014	74	691	9.34
3	2015	78	766	9.82
4	2016	115	1017	8.84
5	2017	155	1418	9.15
Total		476	476	9.26

The total number of pages by year-wise publication is gradually increasing from 495 pages to 1418 pages. The average pages per publication trend during the study period show in increasing and decreasing trend with ranges between 9.17 and 9.26.

## CONCLUSION

The year-wise publication trend in Current Science Journal during the study period shows increasing trend. From the analyzed results, the study concluded that the Compound Annual Growth Rate is increasing trend. The multiple author contribution is higher and the level of degree of collaboration is minor fluctuations. The exponential growth rate of the published article trend and average pages per publication is not in stable.

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