

A Bibliometric Analysis of the Scholarly Publications of Bishop Heber College, Tiruchirappalli, Tamilnadu, India

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Abstract:

This paper analyses the contribution of Bishop Heber College faculty member's publications for the period of 1995-2017 from web of science database. The data were retrieved from web of science database. During our study period the 209 publications published in the study period. The study found that after 2011 the publication growth rate is high particularly in the year 2017 with highest publication of 30 research articles. In India, the faculty members are mostly collaborated with Bharathidasan University and country wise England has more collaboration with country analysis.

Key words: Bibliometric analysis, Scholarly publications, Bishop Heber College, BHC, India, web of science, WoS, Citation analysis.

INTRODUCTION

The purpose of this study is to analyse the role of Research and Development in recent competitive world. Especially in India, last five years most of the institutes largely concentrate on R&D. Most of the institutes are effectively participating in the

country based institutional ranking system. Particularly the Ministry of Human Resource Department few years back introduced and every year publishes the institutional ranking based on the core subject. In ranking methodology the Research productivity is playing important role. In recent NIRF ranking the Bishop Heber College, Thiruchirappalli ranked 3rd in 2018 and 4th rank in 2017, respectively. This article, evaluates the Bishop Heber College's research out listed in web of science database. For measuring the productivity research publications, the bibliomaniac tool has been adopted.

About the Institute - Bishop Heber College

The Bishop Heber College is a Christian educational institution located in Tiruchirappalli, Tamil Nadu, India. This institute was founded in the year 1966. Mr. Frederick Schwartz, the first German missionary, supported by the Society for the Promotion of Christian Knowledge (S.P.C.K) in South India and he built a small school near the Rock Fort in Tiruchirappalli in 1762. It was renamed after Reginald Heber, the Lord Bishop of Calcutta, who came to Tiruchirappalli in 1826 and died on his way to Travancore. The Heber Memorial School became a full-fledged high school in 1864. In 1873 the School was raised to a Second Grade College and in 1882 it became a First Grade College. It was then known as S.P.G College. It was the first college to be established in Tiruchirappalli. The college was merged with Madras Christian College (MCC), Tambaram, in 1934 as recommended by the Lindsay Commission on Christian Higher Education in India. It was revived like a phoenix on 24 June 1966.

Presently the college offers several undergraduate and graduate degree courses and at the doctorate level, too. This college is known for its lush green environment and aesthetically designed buildings. Students use to refer the college as "Beauty Bishop".

The University Grants Commission, New Delhi and Bharathidasan University, Tiruchirappalli granted Autonomy to the College during 2004-2005. The College was accredited with 5 stars by the National Assessment and Accreditation Council (NAAC) on 21 May 2001 and was reaccredited at the A+ Level on 31 March 2007. Also the college has been recognized by the University Grants Commission as "College with Potential for Excellence" on September 2011. In the Third Cycle of reaccreditation by NAAC, it has been accredited with 'A' Grade with a GPA points of 3.58/4 on 3rd March 2015. The College was awarded the coveted status of "College of Excellence" by UGC in 2017.

In recent 2018 and 2017 in National Institute Ranking Framework (NIRF) ranking, the college bagged the 3rd and 4th rank among the top arts colleges in the country and 1st and 2nd Rank at the State level and 1st Rank among the affiliated colleges of the varsity. The College has created a great reputation for its high academic standards and attracts students from all over India and abroad.

Objective of this study

- To find out year-wise distribution of the publication
- To examine the Productive Author
- To examine the Authorship pattern
- To examine the collaborative institutes and countries

Review of Literature

Nagarkar, S., & Kengar, M. (2017)¹ concluded that, the faculty members are very active in research areas like applied physics, chemical physics, materials sciences, microwave and optical technology, nuclear physics, solid state, thin solid films, etc. This study found that single authorship found to be declining.

Sivakumar B & Senthilkumaran P. (2017)² analysed the faculty publications of KSR College of Engineering, Tiruchengode, India. The study found that overall growth rate of publications has shown increasing trend during the study period. Maximum publication was in the year 2015. Consequently the doubling time for publications have shown an increasing trend.

Bid, S. (2016)³ analyzed the publications of Indian Institute of Technology Kharagpur (IIT Kharagpur) during 2000 to 2015. The study found that contributors from IIT Kharagpur have tendency to publish their work in international journals having high impact factor.

Mishra, V.K., (2015)⁴ concluded that, the bibliometric study is a powerful tool and methodology for finding the ranking and reputation of the institutes in terms of their academic and research output.

Radhakrishnan, N., & Velmurugan, C. (2015)⁵ found that, the publication growth rate was very low till 2004 and there has been a steady growth of research publications since 2005. 2014 is identified as the most productive year due to the publications of 148 papers. It is observed that collaborative research among the institutions is an upcoming trend. South Korea is well associated with Periyar University. Researchers felt that the administrative body of Periyar University has provided the necessary facilities to enhance its research possibility towards knowledge production.

Methodology

The data retrieved from the web of science database by searching the keyword of “Bishop Heber Coll”. This data base is one of the leading comprehensive citation database in the world. The analysis based on the research output of faculty members of Bishop Heber College, Thiruchirappalli. The time span was set from 1995 to 2017 as covered in the web of science database.

ANALYSIS AND DISCUSSION

Year wise growth of publications

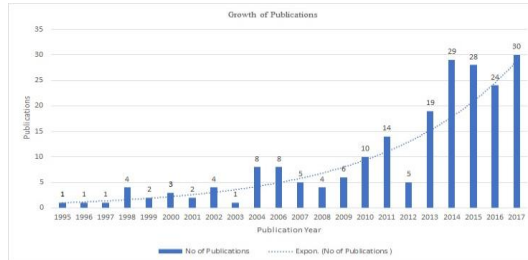


Figure 1

The above *figure 1* highlighted the growth rate of publications during the study period 1995 to 2017. Total 209 research publications were published by Bishop Heber College faculty members and the publication growth rate was gradually increased in the year 1998 with four publications and 2017 is the most productive year with 30 publications followed by 2014 with 29 publications. The study found that, last five years (2013-2017) research contribution and growth rate was high.

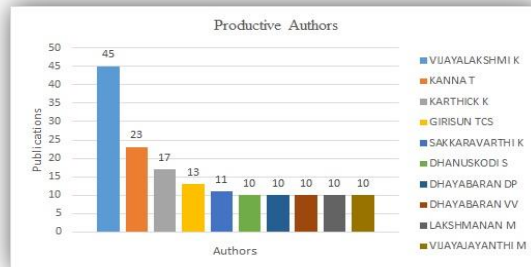


Figure 2

The above *figure 2* reveals the top 10 most productive authors based on their number of publications. Prof. Vijayaakshmi K is the most productive author with 45 publications followed by Kanna T with 23 publications, Karthick K with 17 publications,

Girisun TCS with 13 publications and Sakkaravarthi K with 11 publications. Remaining 5 authors with 10 publications each.

Distribution of publications by Document Wise

Document Type	Nos.	%
ARTICLE	168	80.38 %
PROCEEDINGS PAPER	35	16.74 %
MEETING ABSTRACT	4	1.91%
LETTER	2	0.95 %
NOTE	1	0.47 %

Table 1

The above *table 1* identified the document wise publications of faculty members. Out of 209 publications, 168 publications were published with scholarly articles followed by 35 research papers presented and published with conference proceedings.

Distribution of publications by Authorship Pattern

Authors	1995 - 2000		2001-2005		2006-2010		2011-2015		2016-2017		Total	
	Papers	Citations	Papers	Citations	Papers	Citations	Papers	Citations	Papers	Citations	Papers	Citations
1	1	3	3	3	4	0	0	0	1	0	9	6
2	3	4	4	4	7	86	42	226	23	51	79	371
3	5	30	4	23	11	212	27	213	15	9	62	487
4	2	1	3	25	9	58	16	129	2	6	32	219
5	1	1	1	0	1	4	5	20	7	4	16	29
6	0	0	0	0	0	0	2	11	3	3	5	14
7	0	0	0	0	1	34	0	0	1	0	2	34
8	0	0	0	0	0	0	1	12	1	0	2	12
9	0	0	0	0	0	0	0	0	1	10	1	10
10	0	0	0	0	0	0	2	49	0	0	2	49

Table 2

The above *table 2* shows that authors pattern as per WoS database. The published articles are grouped with the period of 5 years. 2 papers were published by 10 authors in the period of 2011-2015. Double authorship has highest publications of 79 papers with 371 citations followed by 62 articles written by three authors with highest citations of 487.

32 articles were written by four authors with citations of 219. 16 papers written by 5 authors, 5 papers written by 6 authors, each 2 papers written by 7 and 8 authors and one article written by 9 authors. The data revealed that authors

from Bishop Heber College have propensity to publish their research paper with two or more authors.

Degree of Collaboration

The degree of collaboration is defined as the ratio of the number of collaborative research papers to the total number of research papers in the discipline during a certain period of time. The extent of collaboration in research can be measured with the help of the formula suggested by Subramanyam (1983)⁶ used in this study. It is expressed as where;

$$C = \frac{N_M}{N_M + N_S}$$

Where, C= Degree of Collaboration

NM = Number of multiple authors

NS = Number of single authors

Hence, Single Author publications 9, Multiple Authors 200

The degree of collaboration is 0.95. It found that there few negligible contributions by single authors.

Distribution of publications by *Organizational Enhanced*

Top 25 Collaborative Institutes

Organizations-Enhanced	Records	Organizations-Enhanced	Records
Bishop Heber College	209	Karunya Institute of Technology Sciences	3
Bharathidasan University	35	Qatar Foundation	3
National Institute Technology Tiruchirappalli	20	Rajah Serfoji Govt Coll	3
Anna University	7	Sastra Univ	3
Anna University Chennai	6	Sujatha Degree Pg Coll Women	3
Alagappa University	5	Tokyo University Of Science	3
Inst Numer Computat Anal	5	Vellore Institute Of Technology	3
Nottingham Trent University	5	Act C Jst	2
Trinity College Dublin	5	B S Abdur Rahman Crescent Institute of Science Technology	2
Council of Scientific Industrial Research	3	Bharath University	2
Indian Council of Agricultural Research	3	Cochin University Science Technology	2
Jamal Mohamed College	3		

Table 3

The above *table 3* shows that the Bishop Heber College collaboration with other institutes/organizations. Over all the BHC has collaborated with 125 institutes and includes many

leading institutes from India and abroad. Their highest collaborations is with Bharathidasan University, Thiruchirappali with 35 publications and 20 publications with National Institute of Technology, Thiruchirappalli. Over and above its including Anna University, Nottingham Trent University, Trinity College Dublin, Qatar Foundation, Council Of Scientific Industrial Research, Indian Council Of Agricultural Research, Indian Statistical Institute etc.

Distribution of Publications by Country Wise

Countries/Regions	records	Countries/Regions	records
INDIA	209	BRAZIL	1
ENGLAND	10	FINLAND	1
IRELAND	10	GERMANY	1
JAPAN	6	SAUDI ARABIA	1
MALAYSIA	3	SOUTH AFRICA	1
QATAR	3	SRI LANKA	1
USA	3	UGANDA	1
GREECE	2	UZBEKISTAN	1
PEOPLES R CHINA	2	VIETNAM	1
SOUTH KOREA	2	WALES	1
AUSTRIA	1		

Table 4

In *table 4* shows that, the BHC faculty members has collaborated with foreign authors. The above table shows that BHC has collaborated with 20 countries. It indicates that, highest collaboration with England, Ireland followed by Japan, Malaysia, Qatar, USA etc.

Distribution of publications by Source Title Wise

Source Titles	Records
Journal of Materials Science Materials in Electronics	18
Ceramics International	11
International Journal of Computer Mathematics	7
Bulletin of Electrochemistry	6
Indian Journal of Social Work	6
Journal of the Indian Chemical Society	6
2015 International Conference on Innovations in Information Embedded and Communication Systems	5
Differential Equations and Numerical Analysis	5
Journal of Physics a Mathematical and Theoretical	5
Springer Proceedings in Mathematics Statistics	5

Table 5

The above *table 5* shows that, BHC faculty members have published their research papers with 134 WoS listed Journals. The above table shows top 10 journal in which faculty members published 18 papers. They were published with Journal of Materials Science Materials in Electronics followed by Ceramic International with 11 publications.

CONCLUSION

The study analyzed and observed that, the Bishop Heber College, Thiruchirappalli has published 209 research papers during the study period. The study found that, after 1998 the research output increased with four publications and 2017 is the most productive year with 30 publications followed by 2014 with 29 publications. The study found that, last five years (2013-2017) research contribution and growth rate was high. Prof. Vijayalkshimi K is the most productive author with 45 publications found that most prolific contributor of scientific articles. The highest number of research papers (168) published in the form of scholarly articles. Moreover, last seven years the research productivity has dramatically increased. Out of 209 publications, 149 research papers published in the year 2011 to 2017 with 743 citations and highest collaboration with England, Ireland followed by Japan.

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