

RESEARCH PRODUCTIVITY OF INSTITUTIONS AFFILIATED TO GGSIPU: A SYSTEMATIC LITERATURE REVIEW

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Abstract: Research productivity is the creative concepts and thoughts which is studied theoretically & applied practically, and subsequently result in research publication for publishing in prestigious journals. Publication of research papers is the most evident sign of a dynamic researcher. It is important for the researcher's career and the academic advancement of any Institution. Not only it increases the visibility of the institution under which the faculty is working but also the researcher gains prestige and good career rewards. In this paper, Systematic literature Review was conducted from the existing literature on the topic research productivity of 19 Institutions affiliated to GGSIPU using Web of Science and Scopus. Thus, this study is an in-depth and systematics analysis of the existing research papers.

Keywords : research productivity, Institutional Research, higher education, faculty research, literature review, GGSIPU affiliated colleges/Institutes, "Web of Science" (WoS) and "Scopus".

1.0 Introduction

Why do some faculty produce more academic research than others? Higher education institutions are intricate, with many features and distinctive infrastructures. Therefore, it is crucial for the institution's performance to effectively integrate many aspects and balancing the resources for the institution's overall goal. Through scientific research, the various academic institutions and the universities have continuously acted as feeder institutions for national development. Most important research resource is the teaching staff of higher education institutions. By combining their research with that of others and publishing it in scholarly journals that are read all over the world, faculty not only add to the body of knowledge in their respective fields, but also enhance their growth and their affiliated institutions' reputations. As a result, higher education institutions are giving research productivity a greater significance when determining promotions, merit awards, funding, and performance recognition. We examine the research productivity of faculty in GGSIPU affiliated institutions using renowned Web of Science and Scopus Databases.

2.0 Faculty Research Productivity

Research productivity is a constant process for the majority of academic scientists. "It sharply increases to a peak early in life and then gradually declines" (Stephan & Levin, 1992). "Research productivity has been measured as the quantity and/or quality of the artifacts produced by faculty scholarship" (Meho & Spurgin, 2005; Dundar & Lewis, 1998). The Faculty members play crucial role in the spread of information in society, academic performance of their students, and their own professional success. Their knowledge and expertise greatly increase learning and advance the cause of human knowledge, which is

the mission and goal of higher education. “Faculty work encompasses multiple interrelated activities of teaching, research, and service” (Paulsen & Feldman, 1995; Fairweather, 1993, 2002).

“During the past few decades, considerable attention has been devoted to the topic of faculty research productivity” (Bland, Center, Finstad, Risbey, & Staples, 2005; Blackburn & Bentley, 1993).

“Such attention is warranted since productivity is often used as an index of departmental and institutional prestige and is strongly associated with an individual faculty member’s reputation, visibility, and advancement in the academic reward structure” (Creamer, 1998). In fact, for faculty members, the sheer quantity of research publications has a much greater impact on how the career develops. As per Lucertini, Nicolo and Telmons (1995) “schools to seek relevant benchmarks to search, measure, and compare their processes to the best practices that their external competitors have developed”.

3.0 Objectives of the study

- This study is different from the previous researches in the following ways
- The study performs a comprehensive and systematically literature review on measuring the research productivity of 19 affiliated Institutes affiliated to GGSIPU which are offering graduation courses in engineering.
- The study aims to systematically measuring the research productivity of the Institutions affiliated to GGSIPU using Web of Science and Scopus databases.
- No study was conducted so far on the topic. Thus, this study is an in-depth systematics analysis of the existing research papers as well as measuring the research productivity of the Institutions affiliated to GGSIPU using Web of Science and Scopus databases.

4.0 Research Questions

- How many affiliated colleges of GGSIPU are there which are offering Graduation in Engineering?
- Recent trends in the publication of research papers of affiliated Institutions/Colleges of GGSIPU in Scopus or web of science?
- What are the limitations and challenges of doing research on the topic under study?
- What are the research gaps and topics that need to be addressed in the future?

5.0 Scope of Research Study

The present study confines its scope to a single field namely Engineering Colleges affiliated to GGSIPU and indexed in Web of Science Database and thus this study aims to know the research productivity of engineering colleges affiliated to Guru Gobind Singh Indraprastha University and to map the structure of research productivity of 19 Engineering Colleges affiliated to GGSIPU. The following Engineering Colleges having Programme Duration (4 Years) affiliated to GGSIPU is covered under the present study:

S.No.	Name of Institute	Govt./ Pvt.	Year of establishment	Research Papers found in Scopus (upto 20 Apr 2023)	Research Papers found in WOS (upto 20 Apr 2023)
1	Mahavir Swami Institute of Technology, Sonipat (Earlier name: Bhagwan Mahaveer College of Engineering & Management (Jain Minority Institution))	Pvt.	2009	14	-
2	Mahavir Swami Institute of	Pvt.	2009	-	-

	Technology				
3	B. M. Institute of Engineering & Technology, Sonipat	Pvt.	2016	22	-
4	Bhagwan Parshuram Institute of Technology, New Delhi	Pvt.	2005	267	133
5	Bharati Vidyapeeth's College of Engineering, New Delhi	Pvt.	1999	775	-
6	Delhi Institute of Technology and Management	Pvt.	2018	10	-
7	Delhi Technical Campus	Pvt.	2013	107	-
8	Dr. Akhilesh Das Gupta Institute of Technology & Management, New Delhi (Earlier name was Northern India Engineering College)	Pvt.	2003	-	-
9	Greater Noida Institute of Technology	Pvt.	2001	201	60
10	Guru Tegh Bahadur Institute of Technology, New Delhi	Pvt.	1999	116	-
11	HMR Institute of Technology and Management	Pvt.	2002	135	54
12	JIMS (Jagan Institute of Management Studies) Engineering Management Technical Campus, Rohini, New Delhi	Pvt.	1998	23	34
13	Maharaja Agrasen Institute of Technology, New Delhi	Pvt.	1999	1074	504
14	Maharaja Surajmal Institute of Technology, New Delhi	Pvt.	2001	828	372
15	Trinity Institute of Innovations in Professional Studies, UP, Greater Noida	Pvt.	2008	3	
16	University School of Chemical Technology, GGSIPU	Govt.	1998	8582	2075
17	University School of Information & Communication Technology, GGSIPU	Govt.	1999		
18	Shri Balwant Institute of Technology	Pvt.	2006	-	-
19	Delhi Institute of Tool Engineering, New Delhi	Govt.	1978	54	-
				12211	3232

6.0 Methodology

The objective of this paper is to measure the research productivity of 19 Engineering Colleges affiliated to GGSIPU. The study focusses on systematic reviewing the literature. Also, the findings were based on analysis of the existing related literature of the related area. The review question was “measuring the research productivity of 19 Engineering Colleges affiliated to GGSIPU”. The search strategy was inclusive and research articles were extracted from Web of Science and Scopus Database.

6.1 Databases, Keywords and Inclusion criteria

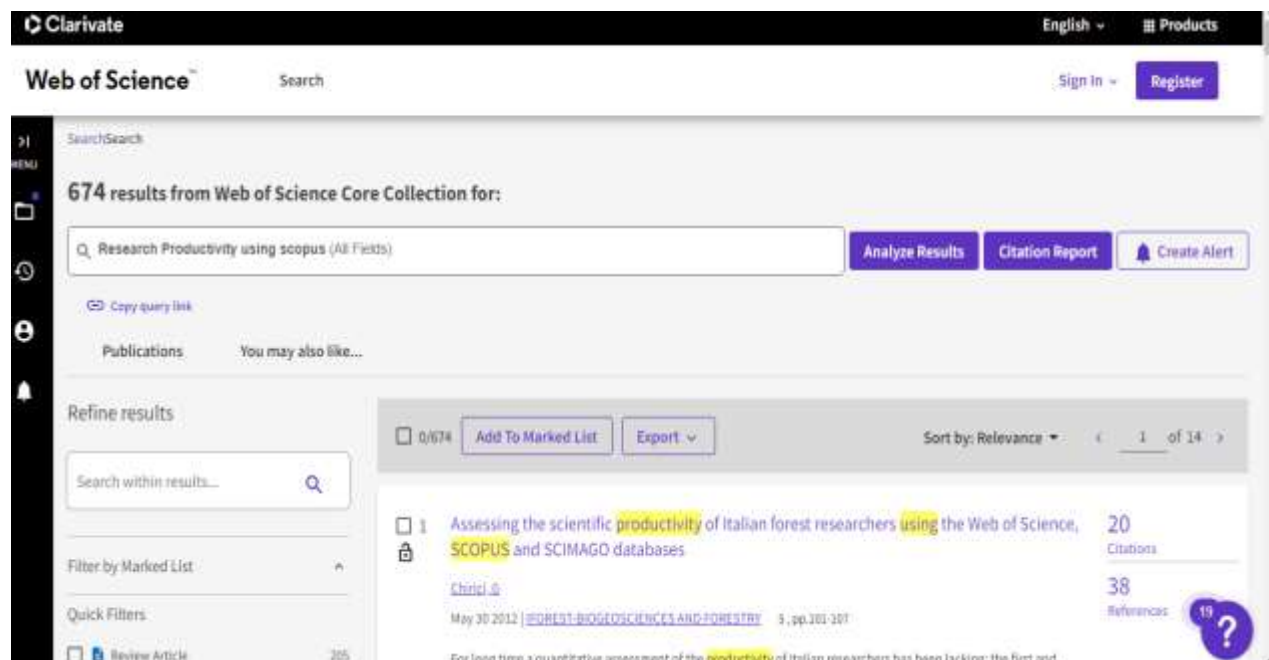
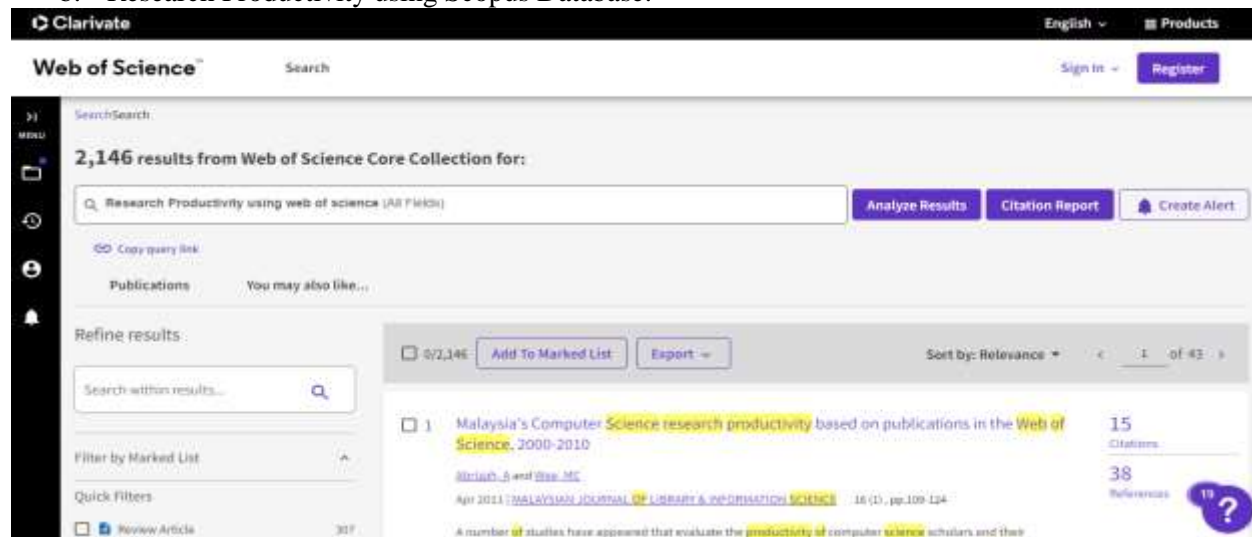
The Scopus and Web of Science database were used for extracting the data from these renowned databases. Following terms were used while searching in Scopus and Web of Science database in extracting relevant titles from the research topic:

6.1.1 Web of Science Database

- a. Research Productivity using Web of Science Database.
- b. Research Productivity using Scopus Database.

6.1.2 Scopus Database

- a. Research Productivity using Web of Science Database.
- b. Research Productivity using Scopus Database.



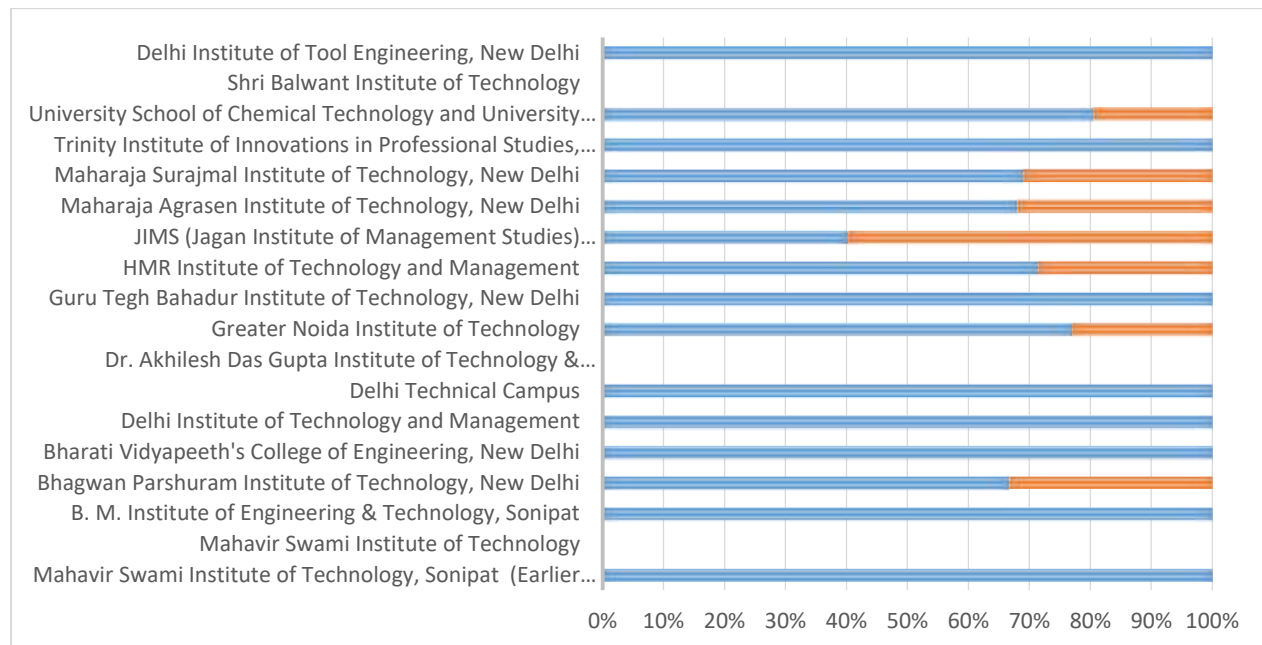
The screenshot shows the Scopus search results page for the query: KEY (research AND productivity AND using AND web AND of AND science). The page displays 149 document results. The interface includes a search bar, navigation tabs for Documents, Secondary documents, and Patents, and a table with columns for Document title, Authors, Year, Source, and Cited by. The table is currently empty.

The screenshot shows the Scopus search results page for the query: KEY (research AND productivity AND using AND scopus). The page displays 161 document results. The interface includes a search bar, navigation tabs for Documents, Secondary documents, and Patents, and a table with columns for Document title, Authors, Year, Source, and Cited by. The table is currently empty.

7.0 Analyzing the Results

A framework was designed based on above mentioned keywords “research productivity using Web of Science and Scopus Database” were used.

Databases	Search Term	Total Documents/Articles	Total Documents / Articles of 10 Years (From 2014-2023)	Relevant research field to	Quality Criteria Passed (as per abstract)
Web of Science	Research Productivity using web of science	2146 Citing Articles 50,283 (Analyze Total) 49,546 Analyze Without self-citations	1652	126 (Library) Citing Articles 1605 (Analyze Total) 1585 Analyze Without self-citations	30
	Research Productivity using Scopus	674 Citing Articles 10,642 Analyze total 10,389 Analyze Without self-citations	605	74 Citing Articles 1,052 Analyze Total 1,038 Analyze Without self-citations	15
Scopus	Research Productivity using web of science	149 (Citations: 1714)	129	28 (Social Science) Citations: 126	12
	Research Productivity using Scopus	161 (Citations: 1981)	154	38 (Social Science) Citations: 275	20
Total		3130 research articles	2540 research articles	266 research articles	77 research articles



The main aim of the study was to measuring research productivity of Institutions affiliated to GGSIPU. The technique was created using the steps of a systematic review process: formulating review questions, locating pertinent literature, evaluating the quality of research, putting the evidence in a concise form, and interpreting the results. 3130 research articles were hatched using the Web of Science and Scopus databases. Based on the quality criteria and other important factors finally 77 research article were selected for study.

In measuring the research productivity of Institutions affiliated to GGSIPU and to come at any conclusion, the most relevant research papers need to be imported through Web of Science and Scopus. However, there is a need for the future research to know and measure the research productivity of Institutions affiliated to GGSIPU.

8.0 Limitations and Challenges

The challenged faced for conducting the above research was that the coverage of web of science does not cover research papers published in conference proceeding. Various universities were contacted to extract to hatch the data of published research papers in conference proceeding under web of science database but publisher (Clarivate) of Web of science database is giving the restricted access to the universities.

9.0 Research Gaps

The focus of study is not answering the research papers published in conference proceeding of Web of Science database because the subscribed coverage of the database is limited. Hence, there is a scope to cover the research papers published in conference proceeding of Web of Science database.

10.0 Conclusion

There are 19 Institutes/Colleges affiliated to GGSIPU which are offering Engineering. The trends shows that 12211 research papers are published in Journals in Scopus database as compared to 3232 research journals in Web of Science. The research paper will help the Institutes/Colleges for evaluating their research to be published among these two databases, which ultimately help in improving various rankings including NIRF ranking done by the Govt. of India.

Initially, 3130 research articles were filtered on the basis of search terms, out of which only 77 research articles has been finally selected based on the Quality Criteria (i.e. as per relevancy of abstract).

The analysis of literature reviews revealed important elements affecting faculty research output. Administrators of higher education institutions must use this conceptual framework to effectively manage the research output of their faculty members. Faculty members should be paid for their effort rather than only for immediate (or short-term) metrics of output. When the Institutions expects research productivity then policies like keeping the teaching load to minimum would promote faculty efficiency.

The study's output will be used as inputs in finding out the research productivity of Institutions affiliated to GGSIPU. The institution will be able to set priorities, pinpoint efforts, and allot resources to help the institution in the accreditation procedures and enhancing research due to this comprehensive analysis of data from existing literature. This research study will be improving the role of education institutions in facilitating research.

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