Confederation of Indian Industry

Glimpses of Research Productivity of Indian Universities and Research Institutions

A Report based on

Indian Citation Index 2016

Indian Citation Index

Glimpses of Research Productivity of Indian Universities and Research Institutions

A Report based on "Indian Citation Index" Database

2016

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Foreword

For India to emerge as an innovation economy, a research culture is an imperative. The foundation of acknowledgement of research starts from papers and then moves on to patents to products and profits. Citations are an important measure of the quality of research papers.

Industry looks at research differently from academia. While it is interested in the application part, institutes mostly concentrate on papers and theory. From productivity and contribution to gross domestic product standpoint, therefore, data on patents and tangible intellectual property created is more important. However, that does not take away from the value of theoretical knowledge created in the process. This is why a count of the number of research papers produced by an institution and the number of citations these papers receive is a significant indicator of the strength of that institution.

The vehicles, through which the lonely work of research scholars comes in front of the world, are journals. They act as important repositories of new knowledge created in a specific field over a period of time. In India, the culture of maintaining high quality academic journals, though old, is not very strong.

Barring a few, most journals in India lack adequate funding support from the institutions and have to depend on sundry donations and advertisements to keep themselves alive. Which is why, even though there are an estimated 6,000 journals in the country, only about 1,500 are worth studying or tracking. Of these, roughly 1,000 are being tracked regularly by the Indian Citation Index.

I am happy that we have been able to create the second edition of this very useful report which looks at the research output of our institutions on the basis of citations in Indian journals. This database itself is unique and its mining has led to some very interesting findings for the second year in a row. CII would like to thank and congratulate the entire team at ICI for preparing a much improved and exhaustive report for the second edition.

Vijay Thadani
Chairman, CII National Committee on Higher Education
Vice Chairman & Managing Director – NIIT &
Co-Founder, NIIT University

त्रिलोचन महापात्र, पीएच.डी.
एफ एन ए, एफ एन ए एस सी, एफ एन ए ए एस
सचिव एवं महानिदेशक

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FOREWORD

Indian Citation Index (ICI) is the long-felt need of scholarly Indian community publishing their research papers in Indian journals. As this has been over-looked by globally available citation indices, measurement, evaluation and ranking of individual authors, institutes and universities are very well perceived and are the needs of the day in the country.

I am happy to write this 'Foreword' for CII–ICI Report 2016 that has analysed research performances of our institutes and universities based on papers published, citations received and relative ranking of similar types of institutes, journals, universities and authors. It is a fact that in applied sciences like agriculture more research papers are published in country's journals, that are not adequately covered by citation services available globally to assess and evaluate performances. Thus, the *Indian Citation Index* (ICI) is a timely tool made available to bridge the existing gap.

It is worth mentioning that the ICI covers 950 journals published from India with 5,50,195 research papers and 1,02,53,850 references from these journals. The subject-wise coverage of the ICI database includes Health Science (1,28,295 articles), Biological Science (62,504 articles), Pharmacology and Pharmaceutical Science (57,359 articles), Agriculture (50,427 articles) and Chemistry (46,451 articles). The ICI has been organized into 49 broad subject categories wherein agriculture core occupies the fourth position with 11% share after the Health Science, Biological Science and Pharmacology & Pharmaceutical Science. I am glad to see that quality-wise, among the major disciplines, agriculture occupies the second position after the Pharmacology and Pharmaceutical Sciences based on citations per paper, *i.e.*, 0.676.

I congratulate the entire team of ICI for presenting this meticulous report analyzing the academic performance of Indian Institutes and Universities.

(T. MOHAPATRA)

Dated the 21st November, 2016
New Delhi

Foreword

Engaging in research and appropriate dissemination of research results are important activities for academic institutions, research organizations and industry engaged in developing innovations. That being so, it becomes pertinent also to study the impact of this research in some measurable way.

Quality indices of various types have been proposed for this purpose, and reputed international indexing organizations and companies bring out data on these indices on a regular basis.

In the ultimate analysis, international data and benchmarks are the most important. It is equally relevant to view things at a national level. Unfortunately the international data on this count is not very useful for two reasons. First, it does not take into account research that is relevant to the country, since such research may not be high priority for the international community. This is especially the case with research in humanities in subjects like social sciences and allied areas, or research carried out to address issues that are local in character but require a novel scientific technological input. Second, the data indexed by them does not give a comprehensive view of the total research effort (volume of publications), its quality or its impact for the country.

The initiative taken by "the Confederation of Indian Industry (CII) and the Indian Citation Index" is commendable. This report shows very clearly the importance of this data, as it helps generate some very important insights into the Indian research scenario as seen from the Indian publications.

Having said this, it is also true that publication pressures have led to many unethical journals and publication

practices, which bring a bad name to the Indian research effort. I do hope that Indian Citation Index will, through its policies will try to keep such spurious and low-quality journals out of its ambit, so that we get an accurate perspective from its databases. Sensitivity on this aspect of indexing cannot be overemphasized.

Surendra Prasad
Emeritus Professor, IIT Delhi
Chairman, National Board of Accreditation

Summary

This report is based on data retrieved from ICI database which is a home-grown abstracts and citation database of journals published from India. The scope of database is multidisciplinary and covers all subject journals of research and peer-reviewed nature. The depth of ICI database is 12+ years, i.e. 2004 onwards, and this report presents analysis of 10 years' data.

Academics place emphasis on research and publication because it is an indicator of the excellence of its faculty. Usual parameters of evaluating the research output of institutions are citations and papers in reputed journals. International indices do not take into consideration citations in Indian journals and this report aims to fill that gap.

In preparation of this report, bibliometric methods and techniques have been used to evaluate institutes/universities' research performance and rank them accordingly on different parameters.

Journals are the lifeline of research communication across the world. Journals predominantly function like patent office in determining priority of claims of research and innovation for reward and award purposes.

This report presents historical sketch of journals published from India with explanations of an indexing journal, international journal and national journal. It also describes computation method of Impact Factor (IF), defines parameters of a journal and publication quality, i.e. physical, subtle and soul attributes. It also provides explanation of selecting quality journal for indexing in ICI.

FOLLOWING ARE THE KEY POINTS OF THE REPORT IN TERMS OF CONTRIBUTIONS FROM DIFFERENT STAKEHOLDERS.

Contribution from overseas

- Foreign contribution in journals published from India is 1, 14, 324 articles from 176 countries, 2, 28,205 authors and in 898 journals. This contribution is from 64,886 institutes of foreign countries.
- Foreign contribution is analyzed with different parameters and results organized into 13 Tables, viz: Ranking of foreign countries' contribution in journals published from India based on Articles, Citations, and Citations per paper.
- Ranking of foreign countries publications in Indian journals based on Articles, Citations and Citations per paper received.
- Lists top 50 journals published from India based on number of foreign countries publishing their Articles. Among these top 50 journals, 13 journals have published more than 1000 articles from foreign countries. Also, among these top 50 journals, 12 journals have more than 1.5 citations per paper.
- Subject-wise ranking of foreign countries' contribution based on number of countries contributed, number of articles, citations and citations per paper. '*Health Science', 'Chemistry'* and *'Biological Science'* are among the top 50 subjects wherein foreign countries have published relatively more. Also, *'Health Science'* as a subject has contribution from 160 foreign countries, followed by *'Biological Science'* with 146 foreign countries.
- Ranking of foreign countries based on number of institutes which contributed in journals published from India. As foreign country institute/university, 'Islamic Azad University' of Iran is the top contributor from foreign countries.

- The China with 35659 authors' contributions in Indian journals is on top in terms of numbers of foreign authors.

Contribution of Indian States

- State-wise research productivity of India with respect to 'Articles' produced and 'Citations' received. Data shows that Tamil Nadu is at number 1 position in terms of 'Articles' produced, second position in terms of Citations received and 22ndposition in Citations / Papers. Similarly, all other states have different rank/ position on different parameters but Delhi as a state is alone to occupy almost constant position/rank, i.e.,5th, 5th, and 4thon all above stated three parameters.
- State-wise research contribution by number of institutes and ranking is based on Articles, Citations, Citations / Paper and Article/Institute.
- State-wise research output in number of journals published from India; analysis shows that Uttar Pradesh is at first position in terms of number of journals, followed by Maharashtra, Karnataka, Tamil Nadu, Delhi, etc.
- State-wise number of 'Authors' contribution shows that Maharashtra is at number 1, followed by Tamil Nadu, Karnataka, Uttar Pradesh and Delhi. The lowest 36th position is of Lakshadweep (UT), preceded by Daman and Diu at 35th, Dadra and Nagar Haveli at 34th, Mizoram 33rd, Andaman and Nicobar 32nd, Nagaland at 31st, Arunachal Pradesh at 30th, Sikkim at 29th, Tripura at 28th, and so on. It reveals that the number of 'Authors' are relatively low in North-East region and UTs which may be due to their size, population and number of institutes.
- Subject-wise contribution shows that in 'Health Science' all states have contributed, followed by Biological Science, Pharmacology and Pharmaceutical Science, Environmental Science, Engineering with 35 subjects and so on. At the lowest is 'Apiculture' with 10 states' contribution and it is preceded by 'Nanoscience and Nanotechnology' with contribution from 15 states.
- Delhi as a state is at number 1 position in terms of publishing journals, followed by Maharashtra, Uttar Pradesh, Tamil Nadu, and West Bengal and so on. Bottom four states are Jharkhand, Meghalaya, Sikkim and Puducherry, and all four publish one journal each. There are 11 states which are not publishing any journal. These are – Chhattisgarh, Manipur, Goa, Tripura, Arunachal Pradesh, Nagaland, Mizoram, Andaman and Nicobar Islands (UT), Dadra and Nagar Haveli (UT), Daman and Diu (UT) and Lakshadweep (UT).
- Ranking based on number of journals published from different cities of India: Among top five, New Delhi stands at number 1 position with 386 journals followed by Mumbai with 115 journals; Kolkata with 60 journals; Chennai with 31 journals and Bengaluru with 25 journals.
- State-wise list of top 50 journals of India; subject-wise top 10 journals in terms of research papers, citations, and citations / paper.

Contributions from IITs

- Lists chronologically 22 IITs establishments with relative ranking of IITs based on number of papers, citations, and citations / paper. It also ranks subject wise contribution based on number of IITs contribution, citations, and citations / paper.
- Lists top 100 authors of IITs, who have published papers in Indian journals. Accordingly, *Singh, Gurdeep* with 42 articles is the top contributor from IIT (ISM) Dhanbad, followed by *Viswanthan, B.* with 30 articles from IIT Madras. However, based on citations received, *Sushil* of IIT Delhi is on top position with 68 citations credited to his 12 papers, and with respect to citations per paper, three authors, namely – *Dwivedi, BN* of IIT Varanasi, and *Chandra K*, & *Sharma Apurbba Kumar* of IIT Roorkee are on top with 9.400 citations/paper. In top 100 authors, 27 authors are from IIT Delhi with 27.91% share to total contribution of 100 authors, followed by IIT Roorkee with 19 authors and 18.02% share.
- In top 100 journals of IITs papers, 1st rank journal is *'Indian Journal of Fibre & Textile Research'* is on top with 114 articles, and *'Global Journal of Flexible Systems Management'* on top with respect to citations received and citations/paper. *'Current Science'* is one of the journals among top 100 journals, which has papers from 15 IITs and it is at 1st rank on all the three parameters, i.e. articles, citations received and citations/paper.
- IITs are making substantial contribution in subject areas of *'Engineering Science and Technology' 'Chemistry'*, '*General Science and Technology'*, '*Earth and Geological Science'*, *Physics, 'Material Science, Biological Science, Environmental Science, Social Science, Management, Mathematics* and *Statistics* and in rest of the subjects, IITs have fringe contribution. It gives a list of IITs which are relatively new and published no paper in journals of India.

Contributions from NITs

- NITs research performance based on articles, citations, and citations per paper has been measured & evaluated and shown in tables.
- Rank top 100 authors of NITs based on number of papers contributed, citations received and citations/paper. Accordingly, *Ganesan N*, of NIT Calicut is on top with 12 papers*; Adhikari Airody Vasudeva* of NIT Karnataka is at 1st rank based on 40 citations and 6.667 citations /paper to his 6 articles. Among top 100 authors, 13 authors are from NIT Rourkela with 13.34% share to total

  papers of 100 authors, followed by 11 articles from NIT Kurukshetra with 11.6% share, 10 articles from NIT Tiruchirappali with 9.97% share, and rest of the NITs have contributed less than 10 articles

- Lists top 100 journals wherein NITs have published their research articles. Accordingly, *'International Journal of Engineering Science and Technology'* is at 1st rank with 42 articles and '*Asian Journal of Experimental Sciences'* is also at 1st rank based on 29 Citations received & 3.22 citations/paper to 9 articles.
- Top 100 Indian journals of NITs research papers based on number of NITs contribution, articles published, and citations received. Accordingly, *'International Journal of Engineering Science and Technology'* is at rank 1st based on number of 158 articles of NITs published, and based citations received *'Indian Journal of Physics'* is at 1st rank.
- Subjects wise contribution of NITs, *'Engineering Science and Technology'* as a subject is on top with 1736 articles to total of all subjects contribution of NITs and received 318 citations in this subject category, followed by *'Chemistry'* with 483 articles and 195 citations, *'Material Science'* with 320 articles and 96 citations, *'Computer Science and Technology'* with 192 articles and 28 citations, *'Environmental Science'* with 183 articles and 61 citations, *'Earth and Geological Science'* with 167 articles' and 37 citations, and so on. As a subject *'Engineering Science and Technology'* is on top with 45.60% share in total of NITs articles contribution, 31.896% citations share received, followed by *'Chemistry'* and *'Material Science'* with 12.687% & 8.40% articles share and 19.559% & 9.629% citations share respectively.
- Lists 4 relatively new NITs with no research papers, *namely NIT Andhra Pradesh, NIT Meghalaya, NIT Mizoram and NIT Uttarakhand*.

Contributions from IIMs

- Lists IIMs productivity of research articles published, citations received, and citations per paper. *IIM Ahmedabad* is at 1st posion with 202 articles, followed by *IIM Kolkata* and *IIM Lucknow* with 121 and 104 articles respectively.
- Portrays top 100 authors' work in order of their ranks with respect to papers contribution, citations received. Among top 100 authors of all IIMs, first 4 are *from IIM Ahmedabad*, namely *Dholakia Ravindra H, Singh Sukhpal*, *Sharma Vijay Paul*, and *Singh Manjari.*
- IIM wise number of authors among top 100 authors, 26 authors is from *IIM Ahmedabad* with 34.29% share of their contribution in 100 authors work, followed by *IIM Kolkata* with 20 authors and their share is 20.74% in 100 authors work.
- In top 100 Indian journals used by IIMs for publishing their research papers, *'Economic and Political Weekly'* is at the 1st rank with 44 articles, followed by *'VIKALPA'* with 41 articles.
- Journal wise use by number of IIMs for their publications*, 'VIKALPA'* is at 1st rank and it is used by 10 IMMs, followed by *'Decision'* used by 9 IIMs.

- IIMs subjects wise focus areas are – *Management, Social Science*, and so on.
- There are 7 IIMs – *IIM Nagpur, IIM Visakhapatnam, IIM Bodh Gaya, IIM Amritsar, IIM Sambalpur, IIM Sirmaur, and IIM Jammu* which have not yet published their research papers in ICI indexed journals. These IIMs are relatively new and yet to start scholarly publication activities.

Contribution from ICAR System

- ICAR Research System among India's scientific bodies relatively large in numbers and it comprises with research institutes, National Bureaus, Directorates and Project Directorates, National Research Centres, etc. Besides, ICAR has 04 Deemed Universities, over 600 KVKs, Research Stations, etc.
- ICAR 04 Deemed Universities namely – *IARI, IVRI, NDRI, and CIFE*, are very prominent research establishments in India, particularly in agricultural sector. All the four have 1st, 2nd, 3rd, and 4th ranks based on research articles published, citations received, and citations/paper.
- ICAR has 61 research institutes and among all, '*ICAR Research Complex for NEH Region'*, stands at 1st rank with 992 articles & 755 citations, followed by *IIHR*, Bangalore with 659 articles. Out of 61 research institutes, 03 institutes – namely *NOFI* Gangtok, *IIAB* Ranchi, and *IISR*, Mau did not contribute any research paper so far.
- ICAR has 06 National research Bureaux, among all *'NBGPR'* is at 1st rank based on articles published & citations received and based on citations/paper, *NBSSLUP* is at 1st rank.
- Among 13 Directorates/Project Directorates, 'Directorate of Rapeseed Mustered Research' stands at 1st rank with 190 articles published and 171 citations received.
- ICAR has 15 National Research Centres but research papers are from 14 only. *'National Research Centre on Integrated Farming'* Motihari, Bihar has published no paper. In this category *NCIPM* is at 1st rank based on all the three parameters, i.e. articles published, citations received, and citations per paper.
- Lists 100 top Indian journals used by ICAR research system for publications and among all 100, *'Indian Journal of Agricultural Science'* is at 1st rank on number of articles published. *'Advances in Plant Sciences'* are at 1st rank on citations received and based citations/paper, *'Annals of Plant Protection Sciences'* are at 1st rank.

Contribution from ICMR

- As name indicates, ICMR founded in 1911 as an apex body in medical science research domain of India. Currently, ICMR has its 26 Research Institutes and 06 Regional Medical Research Centres for doing research in medical areas taking care of diseases of regional diversities. *RMRC* (Regional

Medical Research Centre) is at 1st rank based on 182 published research papers, followed by *NIRT* Chennai with 171 articles. In terms of citations received, *RMRC* (Regional Medical Research Centre) is again is at 1st rank with 244 citations, followed by *NIMR*, Delhi with 242 citations. Based on citations per paper *'Centre for research in Medical Entomology'* with 2.345 citations /paper is at 1st rank, followed by *'Desert Medicine Research Centre'* with 1.773 citations /paper.

Contribution from CSIR System

- CSIR is one of the prominent apex research bodies in India and it was established in 1942. Currently, CSIR has 38 National Laboratries/Institutes, 39 outreach centres, 3 innovation complexes, 5 units.
- In terms of research papers contributed, *NBRI Lucknow* is at 1st rank with 564 articles and 501 citations received. Based on citations/paper, *NISTADS* is at 1st rank, followed by *IGIB* Delhi.

Contribution from DST

DST was established in 1971 with the objectives of promoting new areas of science and technology and it is a nodal and apex agency in the country. DST has 20+ autonomous institutes working in different domains of science and technology. On examining DST institutes for their research productivity, it is found that *'BSIP'* Lucknow occupies 1st rank with respect articles produced, and citations received, i.e. 382 articles and 490 citations. Based on citations/paper, *'National Innovation Foundation'* is at 1st rank with 1.400 citations /paper.

Contribution from DRDO System

- DRDO is a strong network of 50+ Institutes/laboratories in India, and largely they do research in areas of defence requirements/areas. Based on articles published, DRDE is at 1st rank with 181 articles; based on citations received, *DFRL* is at 1st rank with 174 citations; and based on citations per paper, *INMAS* is at 1st rank with 1.061 citations / paper.

Contribution from University System

- In higher education system of India, university sector is the leading and very prominent sector. A university mainly deals with teaching, learning, innovations, and research. Currently, 700 plus universities or university level establishments exist in India. The research performance evaluation

and measurement require homogeneity among institutes/universities ecosystem and academic infrastructure to a great extent. So, for the sake of creating level playing field, university sector of India has been categoried in four, i.e. Central Universities, State Universities, Deemed Universities and Private Universities in this report. Accordingly, research performance of Central Universities, State Universities, Deemed Universities and Private Universities based on articles published, citations received and citations per paper has been worked out seperately.

- **Central Universities:** The extracted data is organized in tables containing multidimensional information with respect to respective universities. A comparative performance rank on number of articles published, citations received, citations/paper is listed in tables. Top journals and authors research output is also given to understand their significance.
- Central universities are 47 in number but for this report research papers are from 44 universities because 03 universities have not made any contribution. Based on articles published 'university of Delhi is at 1st rank with 1523 articles, followed by BHU with 1363 articles, whereas, based on citations received ' BHU' stands at 1st rank with 869 citations, followed by HGU with 852 citations, based citations/paper HGU stands at 1st rank with 1.188 citations/paper, followed by IGNOU.
- Among 100 authors of central universities, *Singh TK* of Manipur University stands at 1st rank with 66 papers, based on citations received *Bhasin MK* of University of Delhi is at 1st rank with 76 citations to his 30 papers, and based on citations/paper *Watal Geeta* is at 1st rank with 3.47 citations per paper.
- Top 100 authors of central universities reveals that 'Nagaland University' is at 1st rank with its 13 authors and 12.015% share in total of 100 authors work, followed by HNBGU with 12 authors and its share is 10.827% in 100 authors work.
- AMU is at 1st rank in terms of publishing its 1287 research papers in 329 Indian journals, followed by BHU with 314 journals of India.
- In subject wise contribution of central universities, *'Social Science'* as a subject is at 1st rank wherein 41 universities have their research papers; *Biological Science*, is at 1st rank based on articles published,citations received and citations per paper.
- **State Universities**: Among top 50 State Universities, PAU with its 4106 articles and 2567 citations received is at 1st rank, followed by Annamalai with 3519 articles 2378 citations. However, based on citations/paper, 'Kuvempu University' is at 1st rank with 1.027 cit /pap.
- Among top 100 authors of state universities, *Manavalan R* is the 1st rank top author from Annamalai University with 155 articles, and *Acharya Krishnendu* is 1st rank author from University of Kolkata with 248 citations & 4.066 citations per paper.

- Among top 100 authors, PAU has 17 authors and stands at 1st rank in terms of university wise number of authors with 16.700% share of them in 100 authors total work, followed by UAS Dharwad with 12 authors & 13.300% share.
- Top 50 journals wherein based on number of universities published their papers, *'Current Science'* is at 1st rank with publications from 132 universities.
- Based on subject wise contribution by number of universities, *'Biological Science'* is at 1st rank, followed by *'Health Science'* with 223 & 213 universities contribution respectively.
- **Deemed Universities:** Among deemed universities segment, IARI, IVRI, NDRI, IIS, and JHU are in top contributors' category.
- In top 100 authors of deemed universities, *Singh AK* of IARI is at 1st rank with 107 articles. *Munshi AD* of IARI is at 1st rank with 173 citations, and 5.767 citations / paper.
- University wise number of contributors in top 100 authors, IVRI is at 1st rank with 35 authors and share of them is 34.623% in 100 authors work, followed by IARI with 30 authors and 28.578% share of them in 100 authors total work.
- Top 50 Indian journals of Deemed Universities publications, *'Current Science'* is at top with 1st rank on all four parameters, i.e. number of universities published their papers, number of articles, citations received and citation/paper.
- **Private Universities:** Among private universities, SRM is at top with 1st rank based on number of articles published, Jaipur National University is at 1st rank based on number of citations received and Shobhit University is 1st rank based on citation/paper.
- Among top 100 authors of private universities, *Bhandari Anil*, from Jodhpur National University is at 1st rank with 32 papers.
- Among top 100 authors, 16 are from 'Jaipur National University' with 16.859% share in 100 authors work, followed by SRM.
- In top 50 journals based on number of private universities published papers, *'International Journal of Advanced Research'* is at 1st rank with 56 private universities publications.
- Based on subject wise research contribution, *'Pharmacology and Pharmaceutical Science'* as a subject is at 1st rank with contribution from 91 private universities.

Chapter 1
Background Information

Introduction

The knowledge-base of any society is its intellectual asset and it plays a strategic role in its overall progress and development. For this, availability of vibrant institutional frame and scientific temperament are essential ingredients. India a very old and large country has its glorious past with inherent contradictions to generate and utilize knowledge. In ancient times, there was the *Gurukula* system of education in which only a select band of pupil, rather small segment of society, used to study in teacher's (Guru) house. In this system, students used to stay as long as they wished to or until the *guru* felt that the student had learnt everything. In that era, teaching and learning system was confined to personal domain and therefore, knowledge was not public property and neither was it treated as public good.

The evolution path of modern higher education system in India started with the establishment of Madras, Calcutta, and Bombay universities in 1857. After Independence, universal and compulsory education for all children in the age group of 6-14 was ensured by the government of India through Article 45 of the Constitution.

Initially, teaching and learning was not the role of universities, they used to conduct examinations but now all is an integral part of university system. Globally, now universities and institutions are being assessed and evaluated based on their infrastructure, ecosystem and research productivity. Accordingly, the students/researchers are making their choice of study/work. The research output in terms of research papers, books, reports, patents, standards, etc. are measurable objects. For about 350 years, journals are the main and major source of research communication and over the period a concept of referred and high impact factor journals has evolved to monitor and maintain the quality standards of publications or research documents or research papers. In higher education and research establishments' publication counts in refereed journals has become a globally recognized and accepted criterion.Therefore, the universities and research institutions are in a race of publication of research articles, and that is too in so called refereed international journals; higher the counts of publications and citations received to them, decides their relative superiority among the comity of academic world. So, now at stake for universities or academic establishments is placement in the national and global university rankings, the allocation of budgets from governments, national prestige, and the ability to attract best students, faculty and a higher ladder in the pecking order of academic world.

In case of India, while measurement and evaluation is made for ranking purpose, that need to consider the fact, that in majority universities/institutes are teaching institutions and have a limited research mission or profile. Similar kind of situation seems true in the case of global higher education system that is why only about a thousand or so out of the world's 18,000 universities[1]or university level institutes findplace in so-called international rankings.

Factually, the measurement of academic and research productivity is not straight forward because the key function of teaching quality is seldom measured adequately. However, research productivity in terms of research papers is easier to measure than other kinds of academic work. National and global rankings count publications/research papers published in journals that are indexed in nationally, globally visible and available indices – such as the Web of Science, Scopus, Indian Citation Index and equivalents of respective disciplines. These indices list only a small number of journals of the world and tend to favour English language publications. Also, some of the regulatory and decision making authorities are not very clear in understanding and defining national, international and indexing journals. However, evaluation and measurement of research productivity needs to take care of the existing fallacies of diverse nature. It is true that one size cannot fit all when it comes to assessing research productivity in particular and academic work in general.

Scope

The scope of this study is to provide a scholarly glimpse of Indian institutions of higher education based on 'Indian Citation Index (ICI)' database. Usually, the research output in the form of research articles emanates from academics and research establishments and is communicated mainly through journals. India's 52 per cent research output is in journals published from India and 48 per cent is in foreign journals. Interestingly, in majority academic or scholarly people of India and may be of elsewhere call such foreign journals as 'international' though, there is no such classification. Indian Citation Index (ICI) has been developed for facilitating the inclusion of 52 per cent share of India's research output which was unaccounted for so far for producing comprehensive, complete and realistic research productivity scenario of the country.

Time Span

For the purpose of this report data has been taken from 2006 to 2015, i.e. 10-year period. The time span of 10 years has been considered enough to analyze various trends on different parameters and 10 years data is also sufficient to undertake and develop such analytical studies and reports.

Methodology

A very simple methodology of Data extraction & Retrieval has been used to search and retrieve relevant data from 'Indian Citation Index (ICI) database.

Data Collection and Organization

The retrieved data is saved in Excel format and the same is analyzed and organized into tables and charts with brief interpretation and description thereof.

Limitation

This report is based on 'Indian Citation Index (ICI)' database which currently indexes 950+ journals published from India covering all subject disciplines. ICI does not index journals published from foreign countries even if they publish articles of authors of Indian origin. The data depth of ICI database is 2004 onwards. The data errors if any found in this report may be due to errors in source data, typographical, computational, etc.

Chapter 2

Literature

Rankings

Ranking is a natural thought process when plenty of things are available to do the same or similar things. In globalised world all have to compete in their area of activities to shine and sustain. Competition provides an opportunity to adjudge level of relative standing among comity of stake holders and thus this relative standing is known as rank of that particular competing stake holder and the procedure and system followed is known as ranking system. Rankings generally spark competition among the stake holders. Rankings may have strengths and weaknesses; some may argue that competition indirectly improves overall quality in the higher education system; others may argue that the same competitive forces skew institutional policies in ways that might cause institute or university personnel to work against their own missions. Ranking of institutes/universities is a relative position based on defined parameters. In this study we are investigating relative position of institutes/universities based on multivariate approach, like institutes/universities-wise article count, citation count, citation density count, city-wise articles and citation count, subject-wise quantitative & qualitative strength of institutes/universities, state-wise quantitative and qualitative research productivity, collaborative research output, etc. Higher education institutions/universities in India largely vary in their focus,infrastructure, funds, local orientation, faculty, and other required resources. Ranking approaches worldwide follow certain logical set of elements or parameters. All such defined parameters may not fully suit every institute/university of developing world, being heterogeneous ecosystem of their research paradigm. Therefore, different nations need to develop their own national research framework of logical set of parameters to measure and evaluate institutes/universities. Since, the same size can't fit to all; the available higher education rankings have been controversial and heavily debated worldwide. Hence, in view of debates and discussions on non-suitability of followed approaches of rankings, it would be appropriate to address all local variations, ecosystem and diversities exist in higher education system.

Global Scenario of Ranking System

World-wide there are various ranking systems which have their own weaknesses and strengths. Prominent among these are four or five university ranking systems that take a global approach. They are: QS "WorldUniversity Ranking"; Times Higher Education World University Ranking; Academic Ranking of WorldUniversities (ARWU) – often referred to as the "Shanghai Jiao Tong ranking" because it is produced by a unit at Shanghai Jiao Tong University; the CWTS Leiden Ranking and the Webometrics Ranking.There

is one that ranks universities around the world in terms of their environmental sustainability: theUI GreenMetric World University Ranking created and compiled by the University of Indonesia.A major flaw in rankings seems to be in their methodology. For instance, institutions may not actually change in a significant way, but ratings can fluctuate year-to-year as rankers change the weights, assigned value to different indicators. Likewise, many ranking systems produce a single number that summarizes the overall ranking of an academic institution. This practice makes it difficult for students to distinguish among institutions based on the characteristics they find most important, as per their area of consideration.Additionally, much of the objective data used in the rankings is self-reported by the institutions/universities which may be tailored by them. Hence, continuing such a practice without external validation of data could lead to difficulties for rankings in future, especially if institutions/universities continueto perceive that rankings influence consumer behavior. It is also true that rankings influence the behavior of consumers (scholars, researchers, students, faculty, decision makers, funding agencies, etc).

They are also useful for the government in reforming higher education systemand promoting a culture of quality and transparency. In addition, rankings may be useful to all stakeholders in terms of benchmarking and strategic planning, which may be useful to students and faculty when there is a lack of publicly established criteria for quality. Rankings have to differ from country to country due to regional disparity, different needs and contextual ecosystem and non-availability of unbiased acceptable uniform data sets. All universities, particularly privateones, are under pressure to show higher rank to lure students and sustain in this competitive world.

Journals: Significance for Scholarly Communication

Research journals have been in existence for over 350 years and are scholars' lifeline for scholarly communication. Schaffner (1994) identified five distinct, though somewhat overlapping roles that journals play in scholarly communities. First, they build a collective knowledge base. Journals form the most comprehensive, up-to-date, authoritative archive of information in a given subject field. This authoritative archive of journals can also serve as a tool to check duplication, etc. Second, journals act as carrier of knowledge to scholars working in a subject area. The advent and advancement of ICT has revolutionized the scholarly mode of communication. However, journals still seem to be a significant mode of scholarly communication. Third, journals validate the quality of research in maintaining community standards through peer review mechanism. Fourth, journals distribute rewards and publications in peer-reviewed journals are considered to be of more value/quality. The roots of this go all the way back to the publication in English the "Philosophical Transactions of the Royal Society, London" in 1665. In the world history of journals another was "Journal des Scavans" published on 5 January 1665. According to Guédon (2001),

the journal served almost like a patent office for ideas. By publishing in the journal, scientists or researchers or academicians can establish ownership and fulfill the role of documenting the paternity of intellectual property. Fifthly, journals finely network a scholarly community together in a number of ways. A hallmark of a discipline's coming of age is the establishment of a new journal: in essence, staking out the intellectual territory of the new field. Beyond that, editorials, opinion articles, and letters to the editor often serve as a forum to debate the issues in the discipline. Sometimes they are substantive and sometimes they extend to related areas such as the social implications of findings, funding, or training issues within the field. Journals also commonly serve as a forum for news such as new appointments to major positions or the passing of a well-known member of the scholarly community. While this role may be diminishing to some extent with the variety of communication options available, journals continue to play an important role in forming and maintaining scholarly communities.

Journals Published from India

The first journal titled as 'Asiatick Researches' was published in 1788 in India. Since then journal publicationhas come a long way and as of now over 6,000 journals in various forms and styles are being published from India. The figure of 6,000+ is quite impressive but all these are not research journals. In the category of journals many different types of publications such as weekly newspapers, newsletters, house journals, business news, magazines, popular periodicals, non-peer reviewed journals, etc. are also counted. However, out of 6,000+ journals, only about 1,800 are good, research-oriented and peer-reviewed but out of these, 500 -600 are either irregular or run late or non-reviewed or non-refereed. Thus, there are about 1500 journals which are considered as indexable. In 'IndianCitation Index (ICI)', currently, 960 + journals covering all subjects are indexed, with data depth of 2004 onwards.

Defining an 'Indexed Journal'

There is lot of ambiguity about indexed and non-indexed journal, particularly at decision making level; in fact lack of knowledge leads this ambiguity. An 'Indexed Journal' is a journal of which published articles are indexed in some Indexing/Abstracting periodical/database. The underline philosophy of getting a journal indexed in some Indexing/Abstracting periodical/database/source is to increase the visibility, accessibility and quality standard of that journal. Therefore, indexed journals are considered of higher quality as compared to non-indexed journals. There are various indexing / abstracting periodicals / databases / sources which may differ in their coverage, scope and objectives, etc. but intent of all remains to serve bibliographic information of published research articles of their scope to larger community of users. A few examples of good indexing/ abstracting periodicals/databases/sources are - Chemical Abstracts, Biological Abstracts, EMBASE, Index Medicus, Medline, Scopus, Web of Science (WoS), Indian Citation Index (ICI), Indian Science Abstracts, MAPA, INSPEC, etc. Over the time, it has also been observed

that in this e-era people are more confused and unclear in using right terminology. It is disheartening that even professionals and academicians are unable in distinguishing & differentiating Indexing/Abstracting periodicals/databases/sources and directory – as a list of periodicals/database. For example, if a journal is listed in 'Directory of Open Access Journals (DOAJ)' or 'Ulrich's Periodicals Directory' Index Copernicus, etc. being called/written as 'Index Source'. The sources which simply provide listing of journals or about of journals or databases are not indexation source (s).

Defining an 'International Journal'

Though it is there from beginning of journal's publication but it has gained a hyped momentum for about last three decades, that the use of term 'International Journal' in publications is in vogue among academic and scholarly community particularly of developing and less developed countries. Primarily, for any journal to qualify as an International Journal, it must meet the below listed criteria. The mere use of "international' word in Journal's title/name and the location (foreign) of the Journal's publication does not make a journal 'International' in true sense. An international journal needs to have following attributes:

• The editorial board members/editors/reviewers need to be well known experts in the subject area of the journal.

• The editorial board members/editors/reviewers need to be "Inter-institutional", and preferably "Inter-Countries".

• The journal as a policy and scope should receive and publish papers from own and foreign country author (s). In fact journal of well reviewed quality papers received from different countries and published in a journal, make that journal 'International' in nature.

• The journal should have its wide circulation/subscriptions from own and foreign countries.

• The journal should carry ISSN, which is a unique and international number.

• The journal needs to follow rigorous peer review mechanism comparable to world standards and practices.

• The journal should come regularly as per its defined frequency.

Defining a 'National Journal'

Journals which have national orientation framework and are largely confined to national boundary are known as national/ local journals. Following points further clarify the features of a journal to be called national/local.

• The editorial board members/ editors/reviewers are well known experts in the subject area of the journal.

• The editorial board members/editors/reviewers should be "Inter-institutional" from the country of journal's origin.

• The journal as a policy and scope should receive and publish papers from its own country author(s) and not of other (foreign) countries.

• The journal should have its circulation/subscriptions from own countries only.

• The journal should carry ISSN, which is a unique and international number.

• The journal should be peer reviewed.

• The journal should come regularly as per its defined frequency.

Impact Factor (IF)

Impact Factor (IF) of journal is considered as the 'quality mark', higher the IF leads to correspondingly higher the quality of a journal. Impact Factor (IF) is used as a proxy for the relative importance of a journal within its field. IF has been criticized for manipulation and incorrect application. There are multiple factors that could bias the calculation of the IF. These include coverage and language preference of the database, procedures used to collect citations, algorithm used to calculate the IF, citation distribution of journals, online availability of publications, negative citations, preference of journal publishers for articles of a certain type, publication lag, citing behavior across subjects, and possibility of exertion of influence from journal editors. Interestingly, these factors might also play a role in journal indexation.IF is not available for all indexed journals. Similarly, not all journals are indexed in Thomson Reuters WoS, Journal Citation Reports (JCR) and consequently have no IF. Following formula is used to calculate the IF.

The journal Impact Factor is the average number of times articles from the journal published in the past two years have been cited in the Journal Citation Year, say that is 2015, then:

1. Cites received in 2015 to articles published in that journal in year: 2013 = 59

2014 = 62

A. Sum = 121 (Total Cites received)

2. Number of Articles published in year: 2013 = 51

2014 = 38

B. Sum = 89(Total Articles published)

Calculation: IF = A/B = 121/89 = 1.360

How to Select 'QualityJournal' for Publication?

Since some journals are indexed in highly rated indexation services but have low or no IF, while some have high IF but are not indexed in these highly rated indexation services, what are the selection criteria for labeling a journal 'high quality journal'? Indexation or IF? In such a situation arriving at unquestionable point with full objectivity, transparency puts decisions in a bewildering state. Since, the peer-review process is also done by human beings considered experts of that subject area, can be prone to biases, etc. Hence, to minimize biases and place objectivity and transparency in the process of selecting the 'quality journal', IF and peer-review both factors need to be taken into account together. Thus, the academicians or researchers need to take both considerations in account for selecting journal(s) to publish their research output.

Defining Quality of a Publication/Article

The term quality is generally subjective and contextual; however, in case of research publication, its readers are the best judge. Though the quality of research and innovation is enlightening; it changes the direction of a field dramatically; and advances the field not incrementally, but in a major visible or perceivable manner. A research publication should possess the following three dimensions for attracting quality and citations:

1. Physical: Its attributes-- physical format, binding, designing, paper quality, shape, form, etc.

2. Subtle: Attributes are microscopic personality of a document, like printing, language, fonts, format, margins, ink quality, etc.

3. Soul: Attributes are research findings, facts, innovation, invention, etc. achieved through rigorous *in vivo* and *in vitro* processes.

It has been observed that most of the editors/reviewers of journals published from India are very casual in approach; they are neither subject experts nor professional editors. It affects the quality of a journal to great extent. Sometimes they publish duplicate papers too.

National Institutional Ranking Framework (NIRF)

The National Institutional Ranking Framework (NIRF) was launched on 29thSeptember 2015. This framework outlines a broad methodology to rank institutions across the country. The methodology for ranking universities and institutions has identified five broad parameters, viz: 1. "Teaching, Learning and Resources," 2. "Research and Professional Practices," 3. "Graduation Outcomes," 4. "Outreach and Inclusivity," and 5. "Perception". Considering the fact that universities in India are essentially setup for postgraduate education and research, it was decided to assign higher percentage (40 per cent) weightage to "Research Productivity, Impact and IPR", 30 per cent weightage to **"**Teaching, Learning and Resources", 5 per cent weightage to "Graduation Outcomes", 5 per cent weightage to "Outreach and Inclusivity" and 10 per cent weightage to "Perception". Weightages assigned for ranking of colleges were suitably modified. These five parameters further grouped into sub-categories. As mentioned above each broad category has an overall weight assigned to it, the sub-categories also have an appropriate weight distribution.

Chapter3

Foreign Contribution in Journals Published From India

Journals are the life line of researchers to publish their research findings and convey that to global peers. It is estimated that world over there are 1,50,000 live journals covering all disciplines and languages. Of this, India's share seems to be of ~8,000 journals. Of these, ~6, 000 journals are of non-research nature and only about 2000 journals are of research and peer reviewed nature. About 500 journals are irregular or delayed those cannot be considered as of high quality. That leaves with about 1,500 journals which can be considered as worth for indexing. ICI database at present covers 960+ journals. ICI eventually aims to index all 1500 journals of all disciplines published from India.

Authors (researchers) are free to publish their research in any journal of his/her discipline irrespective of journal's place/location or country of publication or publisher. Publishing in journals of own country or foreign in association either with authors or institutes of other countries is known as foreign academic collaboration. However, this report examines foreign countries and foreign authors' contributions publishing in journals of India.

Here, in this study while analyzing 'Indian Citation Index (ICI)' database to find the share of foreign contribution in journals published from India, **we find 1,14,324 articles from 176 foreign countries contributed by 2,28,205 authors; published in 898 Indian journalsof total 940 journals indexed so far in ICI have published research work of foreign authors and contribution is made in all 49 broad subject categories of ICI. A total of 64,886 foreign institutes/universities have published their research in journals from India.**

Table 3.1 shows top 50 foreign countries in order of number of articles produced by them. The 23 countries have more than 1000 articles among top 50 countries - China (14986), USA (11918), Iran (11755), Turkey (6054), Nigeria (4899), UK (4248), Malaysia (3727), Saudi Arabia (3652), Egypt (3447), South Korea (2714), Pakistan (2321), South Africa (2194), Japan (2195), Canada (1998), Australia (1894), Germany (1887), Bangladesh (1759), Brazil (1744), Italy (1563), Thailand 1516), Indonesia (1411), France (1382), Russia (1113). Rest 27 countries among top 50 have less than 1000 articles contribution.

Table 3.2 shows Top 50 foreign countries based on Citations per Paper (CIT/PAP). As per this Table Rank order of countries have more than 0.5 CIT/PAP are as – Peru (1.9), Kyrzstan (1.7), England (1.1), Luxemburg (1.0), Suriname (1.0), Mayanmar (0.9), Guyana (0.8), Costa Rica (0.7), Seychelles (0.7), Malta (0.6), Afghanistan (0.520), Bhutan (0.511), Dominicana (0.500). The rest of top 50 foreign countries have less than 0.5 citations per paper. Intrestingly, non-significant smaller countries are showing better rank.

Table 3.3 shows Ranks of foreign countries number of papers productivity vs. number of citation/paper. The China's productivity of papers is at Rank 1,but at Citation/Paper it is at 113th rank, similarly US is 2nd & 30th, Iran 3rd & 80th, Turkey 4th & 63rd, Nigeria 5th & 94th, UK 6th & 21st, Malaysia 7th & 66th, Saudi Arabia 8th & 69th, Egypt 9th & 82nd, South Korea 10th & 68th, Pakistan 11th & 79th South Africa 12th & 84th, Japan 13th & 89th, Canada 14th & 36th, Australia 15th & 43rd, Germany 16th & 55th, Bangladesh 17th & 46th, Brazil 18th & 74th, Italy 19th & 106th, Thailand 20th & 97th, Indonesia 21st & 90th, France 22nd & 78th, Russia 23rd & 119th. The rest of the countries number of papers productivity Vs. relative Rank as per Citation/paper is shown in Table. Interestingly there is no apprent correlation in Ranking based on both.

Table 3.4 presents the list of top 50 journals of India which published articles / papers from foreign countries. As per this Table there are 13 journals of India out of top 50 which have published more than 1000 articles - *'Asian Journal of Chemistry'* is at 1st position with 10,262 articles/papers from 93 foreign countries, similarly, the *'Journal of Chemical and Pharmaceutical Research'* is at 2nd position with 4301 articles from 85 countries, *'Far East Journal of Mathematical Sciences'* is at 3rd position with 1952 articles from 79 countries, *'Indian Journal of Science and Technology'* is at 4th position with 1858 articles from 73 countries, *'Research Journal of Pharmaceutical, Biological, and Chemical Sciences'* is at 5th position with 1708 articles from 78 countries, *'Saudi Journal of Kidney Diseases and Transplantation'* is at 6th position with 1592 articles from 67 countries, *'International Journal of Pharmacy and Pharmaceutical Sciences'* occupies 7th position with 1512 articles from 81 countries, '*Journal of Essential Oil Bearing Plants'* is at 8th position with 1265 articles from 91 countries, 'Journal of Food Science and Technology' is at 9th position with 1229 articles from 80 countries, *'PRAMANA – Journal of Physics'* is at 10th position from 70 countries, *'Current Science'* is at 11th position with 1154 articles from 69 countries, *'Biosciences, Biotechnology Research Asia'* is at 12th position with 1137 articles from 51 countries, and *'Economic and Political Weekly'* is at 13th position with 1053 articles from 49 countries among journals of India publishing foreign contribution.

Table 3.5 presents top 50 Indian journals based on Citations per Paper. Out of these 50 journals, 12 journals have 1.5 or more citations per paper. Namely these 12 journals as per relative order of standing are: *'Dysphrenia*' with 5.00 citation/paper', *'Panjab University Research Journal (Science)*' with 4.50 citation/paper', *'Indian Journal of Petroleum Geology'* with 4.44 citations/paper', *'Potato Journal*' with 2.94 citations/paper', *'Crop Improvement*' with 2.66 citations/paper', *'Phytotaxonomy*' with 2.16 citations/paper *', 'Agricultural Economics Research Review'* with 1.71 citations/paper', *'Journal of Plant Biology*' with 1.66 citation/paper', *'Indian Journal of Ecology'* with 1.64 citation/paper, *'Arya Bhatta Journal of Mathematics and Informatics'* with 1.58 citations/paper', *'Tropical Ecology'* with 1.51 citations/paper, and *'Indian Journal of Animal Reproduction'* with 1.51 citations/papers'.

Table 3.6 presents the list of top 50 journals based on number of foreign countries contributions in Indian journals. The numbers of countries which have contributed in these top 50 journals are starting, 93 to 52 countries. The journal wise numbers of countries' contribution are as – *'Asian Journal of Chemistry'*,93 countries, '*Journal of Essential Oil Bearing Plants'*, 91, *'Journal of Chemical and Pharmaceutical Research'*, 85 countries, *'International Journal of Pharmacy and Pharmaceutical'*, 81 countries, *'Journal of Food Science and Technology'*, 80 countries, *'Far East Journal of Mathematical Sciences*', 79 countries, *'Research Journal of Pharmaceutical, Biological, and Chemical Sciences'*, 78 countries, '*Bulletin of Materials Science'*, 73 countries, *'Indian Journal of Science and Technology'*, 73 countries, '*PRAMANA-Journal of Physics'*, 70 countries, *'Current Science'*, 69 countries, *'Journal of Clinical and Diagnostic Research*', 69 countries, *'Journal of Neurosciences in Rural Practice'*, 69 countries, *'Journal of Bioscience'*, 67 countries, *'Saudi Journal of Kidney Diseases and Transplantation*', 67 countries*, 'Indian Journal of Medical Researc'h*, 66 countries, *'Journal of Environmental Biology*', 65 countries, *'Indian Journal of Physics'*, 64 countries, *'Indian Journal of Pediatrics'*, 62 countries, *'Journal of Genetics'*, 62 countries, *'Journal of Threatened Taxa'*, 62 countries contributions. The rest of the details of 50 top journals, number of countries is given in this Table that may be referred.

Table 3.7 presents subject-wise contribution of foreign countries which have published in journals of India. In 49 subject categories of ICI, first 10 positions are occupied by *'Health Science'*, *'Chemistry'*, *Biological Science'*, '*Pharmacology and Pharmaceutical Science'*, *'Social Science'*, *'Mathematics'*, *'Engineering Science and Technology'*, *'Statistics'*, *'Environmental Science'*, *'General Science and Technology'*.

Table 3.8 presents subject wise top 50 foreign countries contributions based on citation per paper wherein top ten positions are occupied by *'History and Philosophy of Science and Knowledge'* followed by *'Meteorology'*, *'Psychology'*, *'Earth and Geological Science'*, *'General Science and Technology'*, *'Food and Beverage Science', 'Physics', 'Remote Sensing', 'Environmental Science', and 'Health Science'.*

Table 3.9 presents subject wise contribution of top 50 foreign countries. By number of countries first ten positions are occupied by – '*Health Science'*, 160 countries; *'Biological Science'*, 146 countries; 'Social Science', 141 countries; 'Environmental Science', 132 countries; *'Pharmacology and Pharmaceutical Science'*, 132 countries; *'Chemistry'*, 129 countries; *'Engineering Science and Technology'*, 122 countries; *'Botany'*, 115 countries; '*Mathematics*', 115 countries; *Statistics,* 115 countries.

Table 3.10: As per this table among top 50 foreign research institutes/universities, first ten are – Islamic Azad University of Iran; National Research Centre of Egypt; Cairo University of Egypt; University of Ibadan Nigeria; Ministry of Education China; Tehran University of Medical Sciences Iran; University of Nigeria; University of Tehran Iran; University of California, USA; University Putra Malaysia.

Table 3.11 presents contributions of top 50 foreign research institutes based on citations per paper. In this category first ten positions are occupied by single paper contributors, namely - College of Pharmacy and Pharmaceutical Sciences, Florida A & M University, USA; Institute of Physical Education, Huanggang Normal University, China; Population Health Research Institute, Hamilton General Hospital, Canada; Population Health Research Institute, McMaster University & Hamilton, Canada; School of Economics Wuhan University of Technology, China; Henan Shuimu Solar Energy Technology Co., Ltd, China; Wuhan Institute of Physical Education, China; Institute of Wushu, Shenyang Sports University, China; Sabbatical, QEI, Australia; Dongguan Institute of Environmental Sciences, China. Interestingly among these 10, six are from China, four single & two five contributions.

Table 3.12 presents data of foreign countries' contribution based on number of foreign institutes/universities. The first ten positions are occupied by China, 10,228 institutes; United States of America, 6,946 institutes; Iran, 5,218 institutes; Turkey, 3,124 institutes; United Kingdom, 2,564 institutes; Brazil, 2,221 institutes; Germany, 1,731 institutes; Malaysia, 1,575 institutes; Saudi Arabia, 1,487 institutes; France, 1,485 institutes and rests relative positions can be seen from the table.

Table3.13 shows foreign contribution by number of authors. In this category top ten countries are China, 35,659 authors; Iran, 25,063 authors; US, 19,853 authors; Turkey, 14,802 authors; Nigeria, 9,605 authors; Egypt, 7,691 authors; Malaysia, 7,566 authors; Brazil, 6,222 authors; UK, 6,104 authors; Saudi Arabia, 5,994 authors.

Table 3.1: Top 50 Foreign Countries: Rankbased onResearch Papers in Journals from India				
Rank	**Countries**	**Articles**	**Citations**	**Citations per paper**
1	China	**14986**	3387	0.226
2	United States of America	**11918**	5655	0.474
3	Iran	**11755**	3673	0.312
4	Turkey	**6054**	2155	0.356
5	Nigeria	**4899**	1398	0.285
6	United Kingdom	**4248**	2125	0.500
7	Malaysia	**3727**	1307	0.351
8	Saudi Arabia	**3652**	1263	0.346
9	Egypt	**3447**	1049	0.304
10	South Korea	**2714**	944	0.348
11	Pakistan	**2321**	729	0.314
12	South Africa	**2194**	665	0.303
13	Japan	**2175**	637	0.293
14	Canada	**1998**	886	0.443
15	Australia	**1894**	840	0.444
16	Germany	**1887**	728	0.386
17	Bangladesh	**1759**	713	0.405
18	Brazil	**1744**	556	0.319
19	Italy	**1563**	392	0.251
20	Thailand	**1516**	427	0.282
21	Indonesia	**1411**	406	0.288
22	France	**1382**	437	0.316
23	Russia	**1113**	237	0.213
24	Iraq	**1098**	432	0.393
25	Nepal	**971**	481	0.495
26	Algeria	**876**	177	0.202
27	Spain	**846**	194	0.229
28	Mexico	**750**	214	0.285
29	Taiwan	**689**	218	0.316
30	Ethiopia	**643**	227	0.353
31	Morocco	**641**	239	0.373
32	Sri Lanka	**617**	340	0.551
33	Netherlands	**602**	293	0.487
34	United Arab Emirates	**595**	233	0.392
35	Tunisia	**585**	107	0.183
35	Greece	**585**	154	0.263
37	Jordan	**573**	145	0.253
38	Poland	**569**	131	0.230
39	Oman	**562**	232	0.413
40	Singapore	**532**	152	0.286
41	Switzerland	**500**	266	0.532
42	Syria	**454**	159	0.350
43	Belgium	**426**	203	0.477
44	Sweden	**421**	183	0.435
45	Czech Republic	**368**	79	0.215
46	Romania	**337**	59	0.175
47	Serbia	**336**	83	0.247
48	Philippines	**325**	120	0.369
49	Libya	**316**	168	0.532
49	Israel	**316**	119	0.377

Table 3. 2: Top 50 Foreign Countries: Rank based on Citations / Paperin Journals from India				
Rank	**Countries**	**Articles**	**Citations**	**Citations per paper**
1	Peru	41	78	**1.902**
2	Kyrgyzstan	7	12	**1.714**
3	England	13	15	**1.154**
4	Luxembourg	3	3	**1.000**
4	Suriname	1	1	**1.000**
6	Myanmar	41	37	**0.902**
7	Guyana	9	8	**0.889**
8	Costa Rica	18	14	**0.778**
9	Seychelles	4	3	**0.750**
10	Malta	21	14	**0.667**
11	Lesotho	17	11	**0.647**
12	Papua New Guinea	21	13	**0.619**
13	Venezuela	55	31	**0.564**
14	Sri Lanka	617	340	**0.551**
15	Uzbekistan	37	20	**0.541**
16	Scotland	45	24	**0.533**
17	Switzerland	500	266	**0.532**
18	Libya	316	168	**0.532**
19	Afghanistan	25	13	**0.520**
20	Bhutan	47	24	**0.511**
21	United Kingdom	4248	2125	**0.500**
22	Monaco	2	1	**0.500**
22	Dominicana	2	1	**0.500**
24	Nepal	971	481	**0.495**
25	Denmark	233	115	**0.494**
26	Eritrea	82	40	**0.488**
27	Netherlands	602	293	**0.487**
28	Belgium	426	203	**0.477**
29	Bulgaria	212	101	**0.476**
30	United States of America	11918	5655	**0.474**
31	Iceland	19	9	**0.474**
32	Montenegro	13	6	**0.462**
33	Kenya	293	135	**0.461**
34	West Indies	126	56	**0.444**
35	Australia	1894	840	**0.444**
36	Canada	1998	886	**0.443**
37	Norway	217	96	**0.442**
38	Sweden	421	183	**0.435**
39	Guatemala	14	6	**0.429**
39	Mauritania	7	3	**0.429**
39	Cayman Islands	7	3	**0.429**
42	Slovenia	55	23	**0.418**
43	Cambodia	12	5	**0.417**
44	Oman	562	232	**0.413**
45	Togo	27	11	**0.407**
46	Bangladesh	1759	713	**0.405**
47	Benin	60	24	**0.400**
47	Maldives	10	4	**0.400**
47	Nicaragua	5	2	**0.400**
50	Cameroon	218	87	**0.399**

Table 3. 3: Top 50 Foreign Countries' Rank of Papers Vs.Citation/Paperin Journals from India					
Rank	**Countires**	**Articles**	**Rank**	**Countries**	**Citations per paper**
1	China	14986	**113**	China	0.226
2	United States of America	11918	**30**	United States of America	0.474
3	Iran	11755	**80**	Iran	0.312
4	Turkey	6054	**63**	Turkey	0.356
5	Nigeria	4899	**94**	Nigeria	0.285
6	United Kingdom	4248	**21**	United Kingdom	0.500
7	Malaysia	3727	**66**	Malaysia	0.351
8	Saudi Arabia	3652	**69**	Saudi Arabia	0.346
9	Egypt	3447	**82**	Egypt	0.304
10	South Korea	2714	**68**	South Korea	0.348
11	Pakistan	2321	**79**	Pakistan	0.314
12	South Africa	2194	**84**	South Africa	0.303
13	Japan	2175	**89**	Japan	0.293
14	Canada	1998	**36**	Canada	0.443
15	Australia	1894	**43**	Australia	0.444
16	Germany	1887	**55**	Germany	0.386
17	Bangladesh	1759	**46**	Bangladesh	0.405
18	Brazil	1744	**74**	Brazil	0.319
19	Italy	1563	**106**	Italy	0.251
20	Thailand	1516	**97**	Thailand	0.282
21	Indonesia	1411	**90**	Indonesia	0.288
22	France	1382	**78**	France	0.316
23	Russia	1113	**119**	Russia	0.213
24	Iraq	1098	**51**	Iraq	0.393
25	Nepal	971	**24**	Nepal	0.495
26	Algeria	876	**123**	Algeria	0.202
27	Spain	846	**112**	Spain	0.229
28	Mexico	750	**95**	Mexico	0.285
29	Taiwan	689	**77**	Taiwan	0.316
30	Ethiopia	643	**65**	Ethiopia	0.353
31	Morocco	641	**60**	Morocco	0.373
32	Sri Lanka	617	**14**	Sri Lanka	0.551
33	Netherlands	602	**27**	Netherlands	0.487
34	United Arab Emirates	595	**52**	United Arab Emirates	0.392
35	Greece	585	**100**	Greece	0.263
35	Tunisia	585	**130**	Tunisia	0.183
37	Jordan	573	**103**	Jordan	0.253
38	Poland	569	**111**	Poland	0.230
39	Oman	562	**44**	Oman	0.413
40	Singapore	532	**93**	Singapore	0.286
41	Switzerland	500	**17**	Switzerland	0.532
42	Syria	454	**67**	Syria	0.350
43	Belgium	426	**28**	Belgium	0.477
44	Sweden	421	**38**	Sweden	0.435
45	Czech Republic	368	**117**	Czech Republic	0.215
46	Romania	337	**132**	Romania	0.175
47	Serbia	336	**108**	Serbia	0.247
48	Philippines	325	**61**	Philippines	0.369
49	Libya	316	**17**	Libya	0.532
49	Israel	316	**58**	Israel	0.377

Table 3. 4. Ranking of Top 50 Indian Journals wherein Foreign Countries have Published Articles					
Rank	**Indian Journals**	**# Foreign Countries**	**Article**	**Citations**	**Citations per paper**
1	ASIAN JOURNAL OF CHEMISTRY	93	**10262**	2621	0.255
2	JOURNAL OF CHEMICAL AND PHARMACEUTICAL RESEARCH	85	**4301**	1513	0.352
3	FAR EAST JOURNAL OF MATHEMATICAL SCIENCES (FJMS)	79	**1952**	391	0.200
4	INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY	73	**1858**	835	0.449
5	RESEARCH JOURNAL OF PHARMACEUTICAL, BIOLOGICAL, AND	78	**1708**	305	0.179
6	SAUDI JOURNAL OF KIDNEY DISEASES AND TRANSPLANTATION	67	**1592**	624	0.392
7	INTERNATIONAL JOURNAL OF PHARMACY AND	81	**1512**	902	0.597
8	JOURNAL OF ESSENTIAL OIL BEARING PLANTS	91	**1265**	422	0.334
9	JOURNAL OF FOOD SCIENCE AND TECHNOLOGY	80	**1229**	537	0.437
10	PRAMANA- JOURNAL OF PHYSICS	70	**1174**	164	0.140
11	CURRENT SCIENCE	69	**1154**	872	0.756
12	BIOSCIENCES, BIOTECHNOLOGY RESEARCH ASIA	51	**1137**	113	0.099
13	ECONOMIC AND POLITICAL WEEKLY	49	**1053**	524	0.498
14	JOURNAL OF ORTHOPAEDIC TRAUMA	38	**999**	852	0.853
15	ORIENTAL JOURNAL OF CHEMISTRY	58	**977**	529	0.541
16	JOURNAL OF CONTEMPORARY DENTAL PRACTICE (THE)	51	**947**	444	0.469
17	JOURNAL OF SOCIAL SCIENCES	39	**921**	210	0.228
18	JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH	69	**900**	141	0.157
19	NEUROLOGY INDIA	56	**874**	287	0.328
19	BULLETIN OF MATERIALS SCIENCE	73	**874**	102	0.117
21	INDIAN JOURNAL OF MEDICAL RESEARCH (THE)	66	**870**	1028	1.182
22	JOURNAL OF ENVIRONMENTAL BIOLOGY	65	**808**	849	1.051
23	INTERNATIONAL JOURNAL OF CHEMTECH RESEARCH	52	**764**	134	0.175
24	INDIAN JOURNAL OF PHYSICS	64	**749**	938	1.252
25	JOURNAL OF HUMAN ECOLOGY	45	**740**	183	0.247
26	INDIAN JOURNAL OF OPHTHALMOLOGY	58	**731**	374	0.512
27	INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES:	61	**672**	144	0.214
28	JOURNAL OF CANCER RESEARCH AND THERAPEUTICS	54	**646**	97	0.150
29	INDIAN JOURNAL OF PEDIATRICS (THE)	62	**643**	329	0.512
30	ALLELOPATHY JOURNAL	57	**633**	775	1.224
31	JOURNAL OF BIOSCIENCES	67	**628**	194	0.309
32	RESEARCH ON CROPS	39	**622**	71	0.114
33	TRENDS IN GENETICS	31	**600**	371	0.618
34	SAUDI JOURNAL OF GASTROENTEROLOGY (THE)	44	**586**	270	0.461
35	INDIAN JOURNAL OF DERMATOLOGY, VENEREOLOGY &	51	**583**	205	0.352
36	ANTHROPOLOGIST (THE)	45	**571**	187	0.327
37	JOURNAL OF GENETICS	62	**570**	146	0.256
38	JOURNAL OF INFORMATION AND OPTIMIZATION SCIENCES	27	**561**	47	0.084
39	JOURNAL OF CHEMICAL SCIENCE	54	**546**	67	0.123
40	INDIAN PEDIATRICS	50	**533**	361	0.677
41	INDIAN JOURNAL OF DERMATOLOGY	48	**523**	227	0.434
42	ANNALS OF THORACIC MEDICINE	42	**521**	372	0.714
43	INDIAN JOURNAL OF ENDOCRINOLOGY AND METABOLISM	56	**504**	366	0.726
44	EDUCATION FOR HEALTH	59	**500**	135	0.270
45	ECOLOGY ENVIRONMENT & CONSERVATION	33	**495**	32	0.065
46	INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE AND	61	**490**	33	0.067
47	INDIAN JOURNAL OF SURGERY	49	**483**	45	0.093
48	INTERNATIONAL JOURNAL OF COMPUTER NETWORKS &	51	**478**	160	0.335
49	JOURNAL OF EMERGENCIES, TRAUMA AND SHOCK	51	**476**	99	0.208
50	BIOMEDICAL RESEARCH	42	**473**	76	0.161

Table 3. 5: Top 50 Indian Journals based on Citation/Paper from Foreign Countries					
Rank	**Journals Name**	**# Foreign Countries**	**Article**	**Citation**	**citations / paper**
1	DYSPHRENIA	1	1	5	**5.000**
2	PANJAB UNIVERSITY RESEARCH JOURNAL (SCIENCE)	2	2	9	**4.500**
3	INDIAN JOURNAL OF PETROLEUM GEOLOGY	5	9	40	**4.444**
4	POTATO JOURNAL	18	34	100	**2.941**
5	CROP IMPROVEMENT	3	3	8	**2.667**
6	PHYTOTAXONOMY	5	6	13	**2.167**
7	AGRICULTURAL ECONOMICS RESEARCH REVIEW	17	38	65	**1.711**
8	JOURNAL OF PLANT BIOLOGY	2	3	5	**1.667**
9	INDIAN JOURNAL OF ECOLOGY	8	14	23	**1.643**
10	ARYA BHATTA JOURNAL OF MATHEMATICS AND	5	12	19	**1.583**
11	TROPICAL ECOLOGY	52	172	261	**1.517**
12	INDIAN JOURNAL OF ANIMAL REPRODUCTION (THE)	2	2	3	**1.500**
13	INDIAN JOURNAL OF FERTILISERS	9	17	25	**1.471**
14	ETHNOBOTANY	9	28	40	**1.429**
15	INDIAN JOURNAL OF COMMUNITY MEDICINE	28	82	116	**1.415**
16	JOURNAL OF THE INDIAN SOCIETY OF SOIL SCIENCE	16	29	40	**1.379**
17	JOURNAL OF ASSOCIATION OF PHYSICIANS OF INDIA	24	94	121	**1.287**
18	INDIAN JOURNAL OF PHYSICS	64	749	938	**1.252**
19	JOURNAL OF FOOD LEGUMES	8	12	15	**1.250**
20	ALLELOPATHY JOURNAL	57	633	775	**1.224**
21	ANNALS OF PLANT PROTECTION SCIENCES	12	28	34	**1.214**
22	JOURNAL OF IMMUNOLOGY AND IMMUNOPATHOLOGY	4	5	6	**1.200**
23	INTERNATIONAL JOURNAL OF GREEN PHARMACY	25	73	87	**1.192**
23	INDIAN JOURNAL OF PHARMACEUTICAL SCIENCES	50	261	311	**1.192**
25	CONSERVATION & SOCIETY	48	383	454	**1.185**
26	INDIAN JOURNAL OF PUBLIC HEALTH	17	38	45	**1.184**
27	INDIAN JOURNAL OF MEDICAL RESEARCH (THE)	66	870	1028	**1.182**
28	JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA):	5	6	7	**1.167**
29	INDIAN JOURNAL OF AGRICULTURAL ECONOMICS	16	30	34	**1.133**
30	INDIAN JOURNAL OF AGRONOMY	11	17	19	**1.118**
31	JOURNAL OF INDIAN SOCIETY OF PEDODONTICS AND	18	89	99	**1.112**
32	BIONATURE	6	11	12	**1.091**
33	INDIAN JOURNAL OF PSYCHIATRY	24	190	203	**1.068**
34	JOURNAL OF ENVIRONMENTAL BIOLOGY	65	808	849	**1.051**
35	JOURNAL OF COMMUNICABLE DISEASES	14	21	22	**1.048**
36	INDIAN FERN JOURNAL (THE)	13	49	51	**1.041**
37	INTERNATIONAL JOURNAL OF PHARMACY AND	10	25	25	**1.000**
37	JOURNAL OF INDIAN ACADEMY OF FORENSIC MEDICINE	6	11	11	**1.000**
37	JOURNAL OF OILSEEDS RESEARCH	5	6	6	**1.000**
40	INTERNATIONAL JOURNAL OF YOGA	20	50	49	**0.980**
41	ANNALS OF FORESTRY	11	15	14	**0.933**
42	INDIAN JOURNAL OF MARINE SCIENCES	32	73	68	**0.932**
43	JOURNAL OF CONSERVATIVE DENTISTRY	28	174	160	**0.920**
44	IETE TECHNICAL REVIEW	42	329	292	**0.888**
45	INTERNATIONAL JOURNAL OF PHYTOMEDICINE	13	23	20	**0.870**
46	INDIAN JOURNAL OF TRADITIONAL KNOWLEDGE	42	205	176	**0.859**
47	MENS SANA MONOGRAPH	14	70	60	**0.857**
48	E-JOURNAL OF CHEMISTRY	46	410	351	**0.856**
49	JOURNAL OF ORTHOPAEDIC TRAUMA	38	999	852	**0.853**
50	JOURNAL OF GEOLOGICAL SOCIETY OF INDIA	51	367	310	**0.845**

Table 3. 6: Top 50Indian Journals: Rank based on Number of Foreign Countries Contributed					
Rank	**Indian Journals**	**# Foreign Countries**	**Articles**	**Citations**	**Citations / paper**
1	ASIAN JOURNAL OF CHEMISTRY	**93**	10262	2621	0.255
2	JOURNAL OF ESSENTIAL OIL BEARING PLANTS	**91**	1265	422	0.334
3	JOURNAL OF CHEMICAL AND PHARMACEUTICAL	**85**	4301	1513	0.352
4	INTERNATIONAL JOURNAL OF PHARMACY AND	**81**	1512	902	0.597
5	JOURNAL OF FOOD SCIENCE AND TECHNOLOGY	**80**	1229	537	0.437
6	FAR EAST JOURNAL OF MATHEMATICAL SCIENCES	**79**	1952	391	0.200
7	RESEARCH JOURNAL OF PHARMACEUTICAL,	**78**	1708	305	0.179
8	BULLETIN OF MATERIALS SCIENCE	**73**	874	102	0.117
8	INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY	**73**	1858	835	0.449
10	PRAMANA- JOURNAL OF PHYSICS	**70**	1174	164	0.140
11	CURRENT SCIENCE	**69**	1154	872	0.756
11	JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH	**69**	900	141	0.157
11	JOURNAL OF NEUROSCIENCES IN RURAL PRACTICE	**69**	441	123	0.279
14	JOURNAL OF BIOSCIENCES	**67**	628	194	0.309
14	SAUDI JOURNAL OF KIDNEY DISEASES AND	**67**	1592	624	0.392
16	INDIAN JOURNAL OF MEDICAL RESEARCH (THE)	**66**	870	1028	1.182
17	JOURNAL OF ENVIRONMENTAL BIOLOGY	**65**	808	849	1.051
18	INDIAN JOURNAL OF PHYSICS	**64**	749	938	1.252
19	INDIAN JOURNAL OF PEDIATRICS (THE)	**62**	643	329	0.512
19	JOURNAL OF GENETICS	**62**	570	146	0.256
19	JOURNAL OF THREATENED TAXA	**62**	335	120	0.358
22	ASIAN JOURNAL OF PHARMACEUTICAL AND CLINICAL	**61**	380	197	0.518
22	INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE	**61**	490	33	0.067
22	INTERNATIONAL JOURNAL OF PHARMACEUTICAL	**61**	672	144	0.214
25	EDUCATION FOR HEALTH	**59**	500	135	0.270
26	INDIAN JOURNAL OF OPHTHALMOLOGY	**58**	731	374	0.512
26	ORIENTAL JOURNAL OF CHEMISTRY	**58**	977	529	0.541
28	ALLELOPATHY JOURNAL	**57**	633	775	1.224
28	INDIAN JOURNAL OF EXPERIMENTAL BIOLOGY	**57**	334	253	0.757
28	INTERNATIONAL JOURNAL OF NETWORK SECURITY &	**57**	209	93	0.445
28	PHARMACOGNOSY RESEARCH	**57**	294	181	0.616
32	INDIAN JOURNAL OF ANIMAL SCIENCES (THE)	**56**	327	97	0.297
32	INDIAN JOURNAL OF ENDOCRINOLOGY AND	**56**	504	366	0.726
32	JOURNAL OF VECTOR BORNE DISEASES	**56**	286	153	0.535
32	NEUROLOGY INDIA	**56**	874	287	0.328
32	RESEARCH JOURNAL OF CHEMISTRY AND	**56**	362	114	0.315
37	INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN	**55**	361	11	0.030
37	INTERNATIONAL JOURNAL OF ENVIRONMENTAL	**55**	263	45	0.171
37	VETERINARY WORLD	**55**	344	132	0.384
40	ASIAN JOURNAL OF MICROBIOLOGY BIOTECHNOLOGY	**54**	348	29	0.083
40	INDIAN JOURNAL OF PHARMACOLOGY	**54**	328	214	0.652
40	INDIAN JOURNAL OF PURE & APPLIED PHYSICS	**54**	308	201	0.653
40	JOURNAL OF APPLIED HORTICULTURE	**54**	247	34	0.138
40	JOURNAL OF CANCER RESEARCH AND THERAPEUTICS	**54**	646	97	0.150
40	JOURNAL OF CHEMICAL SCIENCE	**54**	546	67	0.123
40	JOURNAL OF EARTH SYSTEM SCIENCE	**54**	359	201	0.560
47	INTERNATIONAL JOURNAL OF COMPUTER SCIENCE &	**53**	383	84	0.219
47	JOURNAL OF PHARMACY RESEARCH	**53**	432	103	0.238
49	DIFFERENTIAL EQUATIONS AND DYNAMICAL SYSTEMS	**52**	245	30	0.122
49	INDIAN JOURNAL OF MEDICAL MICROBIOLOGY	**52**	290	208	0.717

Table 3. 7: Subject wise Rank of Foreign Papers'Contribution in Journals from India					
Rank	**Subjects**	**# Foreign Countries**	**Articles**	**Citations**	**citations / paper**
1	Health Science	160	**32029**	12357	0.386
2	Chemistry	129	**18752**	5239	0.279
3	Biological Science	146	**14671**	5650	0.385
4	Pharmacology and Pharmaceutical Science	132	**13754**	5175	0.376
5	Social Science	141	**6963**	2334	0.335
6	Mathematics	115	**5459**	820	0.150
7	Engineering Science and Technology	122	**5218**	995	0.191
8	Statistics	115	**4939**	763	0.154
9	Environmental Science	132	**4856**	1918	0.395
10	General Science& Technology	110	**4504**	2106	0.468
11	Physics	102	**3634**	1620	0.446
12	Agriculture	108	**2805**	811	0.289
13	Computer Science and Technology	104	**2736**	463	0.169
14	Botany	115	**2513**	936	0.372
15	Biotechnology	98	**2408**	359	0.149
16	Economics	90	**2112**	523	0.248
17	Veterinary Science	96	**1944**	503	0.259
18	Material Science	91	**1757**	285	0.162
19	Management	96	**1676**	218	0.130
20	Food and Beverage Science	93	**1605**	724	0.451
21	Zoology	87	**1589**	420	0.264
22	Earth and Geological Science	89	**1369**	669	0.489
23	Education	91	**1162**	156	0.134
24	Business and Marketing	89	**1109**	231	0.208
25	Others	77	**898**	324	0.361
26	Anthropology	62	**841**	215	0.256
27	Astronomy, Astrophysics, Space and Geodesy	69	**739**	149	0.202
28	Library and Information Science	67	**657**	157	0.239
29	Psychology	59	**637**	320	0.502
30	Arts and Humanities	64	**603**	40	0.066
31	Pollution	51	**585**	96	0.164
32	Dairying, Dairy, Animals and Animals Produce	63	**504**	125	0.248
33	Textile	46	**328**	109	0.332
34	Meteorology	45	**287**	165	0.575
35	History and Philosophy of Science and Knowledge	50	**280**	205	0.732
36	Oceanography and Marine Science	45	**263**	88	0.335
37	Law	48	**247**	62	0.251
38	Toxicology	46	**237**	32	0.135
39	Energy and Fuel Science	43	**234**	27	0.115
40	Remote Sensing	38	**230**	91	0.396
41	Forestry	48	**193**	31	0.161
42	Rural development	42	**155**	26	0.168
43	Fishery	37	**141**	17	0.121
44	Population Studies	38	**112**	35	0.313
45	Water	33	**105**	1	0.010
46	Domestic Science	20	**84**	15	0.179
47	Telecommunication	10	**16**	0	0.000
48	Apiculture	3	**6**	2	0.333
49	Nanoscience and Nanotechnology	3	**3**	0	0.000

Table 3. 8: Subject-wise Contribution: Rank based on Citation/Paper in Journals from India					
Rank	**Subjects**	**Countries**	**Articles**	**Citations**	**citations / paper**
1	History and Philosophy of Science and Knowledge	50	280	205	**0.732**
2	Meteorology	45	287	165	**0.575**
3	Psychology	59	637	320	**0.502**
4	Earth and Geological Science	89	1369	669	**0.489**
5	General Science & Technology	110	4504	2106	**0.468**
6	Food and Beverage Science	93	1605	724	**0.451**
7	Physics	102	3634	1620	**0.446**
8	Remote Sensing	38	230	91	**0.396**
9	Environmental Science	132	4856	1918	**0.395**
10	Health Science	160	32029	12357	**0.386**
11	Biological Science	146	14671	5650	**0.385**
12	Pharmacology and Pharmaceutical Science	132	13754	5175	**0.376**
13	Botany	115	2513	936	**0.372**
14	Others	77	898	324	**0.361**
15	Social Science	141	6963	2334	**0.335**
15	Oceanography and Marine Science	45	263	88	**0.335**
17	Apiculture	3	6	2	**0.333**
18	Textile	46	328	109	**0.332**
19	Population Studies	38	112	35	**0.313**
20	Agriculture	108	2805	811	**0.289**
21	Chemistry	129	18752	5239	**0.279**
22	Zoology	87	1589	420	**0.264**
23	Veterinary Science	96	1944	503	**0.259**
24	Anthropology	62	841	215	**0.256**
25	Law	48	247	62	**0.251**
26	Dairying, Dairy, Animals and Animals Produce	63	504	125	**0.248**
26	Economics	90	2112	523	**0.248**
28	Library and Information Science	67	657	157	**0.239**
29	Business and Marketing	89	1109	231	**0.208**
30	Astronomy, Astrophysics, Space and Geodesy	69	739	149	**0.202**
31	Engineering Science and Technology	122	5218	995	**0.191**
32	Domestic Science	20	84	15	**0.179**
33	Computer Science and Technology	104	2736	463	**0.169**
34	Rural development	42	155	26	**0.168**
35	Pollution	51	585	96	**0.164**
36	Material Science	91	1757	285	**0.162**
37	Forestry	48	193	31	**0.161**
38	Statistics	115	4939	763	**0.154**
39	Mathematics	115	5459	820	**0.150**
40	Biotechnology	98	2408	359	**0.149**
41	Toxicology	46	237	32	**0.135**
42	Education	91	1162	156	**0.134**
43	Management	96	1676	218	**0.130**
44	Fishery	37	141	17	**0.121**
45	Energy and Fuel Science	43	234	27	**0.115**
46	Arts and Humanities	64	603	40	**0.066**
47	Water	33	105	1	**0.010**
48	Telecommunication	10	16	0	**0.000**
48	Nanoscience and Nanotechnology	3	3	0	**0.000**

Table 3. 9: Subject wise Number of Foreign Countries which Published in Journals from India					
Rank	**Subjects**	**# Foreign Countries**	**Articles**	**Citations**	**citations / paper**
1	Health Science	**160**	32029	12357	0.386
2	Biological Science	**146**	14671	5650	0.385
3	Social Science	**141**	6963	2334	0.335
4	Environmental Science	**132**	4856	1918	0.395
4	Pharmacology and Pharmaceutical Science	**132**	13754	5175	0.376
6	Chemistry	**129**	18752	5239	0.279
7	Engineering Science and Technology	**122**	5218	995	0.191
8	Botany	**115**	2513	936	0.372
8	Mathematics	**115**	5459	820	0.150
10	Statistics	**115**	4939	763	0.154
11	General Science & Technology	**110**	4504	2106	0.468
12	Agriculture	**108**	2805	811	0.289
13	Computer Science and Technology	**104**	2736	463	0.169
14	Physics	**102**	3634	1620	0.446
15	Biotechnology	**98**	2408	359	0.149
16	Management	**96**	1676	218	0.130
16	Veterinary Science	**96**	1944	503	0.259
18	Food and Beverage Science	**93**	1605	724	0.451
19	Education	**91**	1162	156	0.134
19	Material Science	**91**	1757	285	0.162
21	Economics	**90**	2112	523	0.248
22	Business and Marketing	**89**	1109	231	0.208
22	Earth and Geological Science	**89**	1369	669	0.489
24	Zoology	**87**	1589	420	0.264
25	Others	**77**	898	324	0.361
26	Astronomy, Astrophysics, Space and Geodesy	**69**	739	149	0.202
27	Library and Information Science	**67**	657	157	0.239
28	Arts and Humanities	**64**	603	40	0.066
29	Dairying, Dairy, Animals and Animals Produce	**63**	504	125	0.248
30	Anthropology	**62**	841	215	0.256
31	Psychology	**59**	637	320	0.502
32	Pollution	**51**	585	96	0.164
33	History and Philosophy of Science and Knowledge	**50**	280	205	0.732
34	Forestry	**48**	193	31	0.161
34	Law	**48**	247	62	0.251
36	Textile	**46**	328	109	0.332
36	Toxicology	**46**	237	32	0.135
38	Meteorology	**45**	287	165	0.575
38	Oceanography and Marine Science	**45**	263	88	0.335
40	Energy and Fuel Science	**43**	234	27	0.115
41	Rural development	**42**	155	26	0.168
42	Population Studies	**38**	112	35	0.313
42	Remote Sensing	**38**	230	91	0.396
44	Fishery	**37**	141	17	0.121
45	Water	**33**	105	1	0.010
46	Domestic Science	**20**	84	15	0.179
47	Telecommunication	**10**	16	0	0.000
48	Apiculture	**3**	6	2	0.333
48	Nanoscience and Nanotechnology	**3**	3	0	0.000

Table 3. 10: Top 50 Foreign Institutions: Rank is based on Research Papers Published in Journals from India					
Rank	**Institutions**	**Countries**	**Articles**	**Citations**	**citations / paper**
1	Islamic Azad University	Iran	**3623**	1222	0.337
2	National Research Centre	Egypt	**544**	126	0.232
3	Cairo University	Egypt	**509**	217	0.426
4	University of Ibadan	Nigeria	**451**	150	0.333
5	Ministry of Education	China	**442**	47	0.106
6	Tehran University of Medical Sciences	Iran	**368**	132	0.359
7	University Of Nigeria	Nigeria	**360**	100	0.278
8	University of Tehran	Iran	**347**	79	0.228
9	University of California	United States of America	**334**	150	0.449
10	Universiti Putra Malaysia	Malaysia	**333**	92	0.276
11	University of KwaZulu Natal (UKZN)	South Africa	**283**	122	0.431
12	National Research Center	Egypt	**281**	88	0.313
13	Payame Noor University	Iran	**269**	40	0.149
14	Ferdowsi University of Mashhad	Iran	**267**	85	0.318
15	University of Malaya	Malaysia	**257**	103	0.401
16	King Abdulaziz University	Saudi Arabia	**255**	84	0.329
17	Istanbul University	Turkey	**254**	86	0.339
18	Federal University Of Technology	Nigeria	**240**	94	0.392
19	University of Benin	Nigeria	**222**	67	0.302
20	Tarbiat Modares University	Iran	**216**	39	0.181
21	Zagazig University	Egypt	**215**	56	0.260
21	Shiraz University of Medical Sciences	Iran	**215**	84	0.391
23	Ain Shams University	Egypt	**209**	40	0.191
24	Damascus University	Syria	**198**	18	0.091
25	Hanseo University	South Korea	**196**	105	0.536
26	Mansoura University	Egypt	**195**	58	0.297
27	King Saud University	Saudi Arabia	**190**	91	0.479
28	Universiti Kebangsaan Malaysia	Malaysia	**188**	56	0.298
29	Hainan Medical University	China	**187**	20	0.107
30	University of Fort Hare (UFH)	South Africa	**185**	42	0.227
31	University of Dhaka	Bangladesh	**184**	96	0.522
32	Ahmadu Bello University	Nigeria	**183**	37	0.202
33	University of Rajshahi	Bangladesh	**177**	65	0.367
34	Universiti Sains Malaysia	Malaysia	**176**	69	0.392
35	University of South Africa (USA)	South Africa	**170**	24	0.141
36	Ataturk University	Turkey	**169**	56	0.331
36	University of Uyo	Nigeria	**169**	99	0.586
38	Alexandria University	Egypt	**168**	57	0.339
38	College of Science, King Saud	Saudi Arabia	**168**	35	0.208
40	Ladoke Akintola University of	Nigeria	**164**	52	0.317
41	Tabriz University of Medical Sciences	Iran	**162**	55	0.340
42	Gazi University	Turkey	**160**	55	0.344
42	University of Ilorin	Nigeria	**160**	52	0.325
44	North West University (NWU)	South Africa	**158**	29	0.184
45	University of Guilan	Iran	**156**	30	0.192
46	Isfahan University of Medical Sciences	Iran	**155**	36	0.232
47	Al-Azhar University	Egypt	**153**	59	0.386
48	Firat University	Turkey	**151**	74	0.490
49	Mashhad University of Medical	Iran	**150**	57	0.380
50	Ege University	Turkey	**149**	82	0.550

Table 3. 11:Rank order of Top 50 Foreign Institutions based on Citation/Paper in Journals from India					
Rank	**Institutions**	**Countries**	**Articles**	**Citations**	**citations / paper**
1	College of Pharmacy and Pharmaceutical Sciences, Florida A & M University	United States of America	**1**	47	**47.000**
2	Institute of Physical Education, Huanggang Normal University	China	**5**	215	**43.000**
3	Population Health Research Institute, Hamilton General Hospital	Canada	**1**	36	**36.000**
3	Population Health Research Institute, McMaster University & Hamilton Health Sciences	Canada	**1**	36	**36.000**
5	School of Economics Wuhan University of Technology	China	**1**	30	**30.000**
5	Henan Shuimu Solar Energy Technology Co., Ltd.	China	**1**	30	**30.000**
7	Wuhan Institute of Physical Education	China	**5**	143	**28.600**
7	Institute of Wushu, Shenyang Sports University	China	**1**	28	**28.000**
9	Sabbatical, QEI	Australia	**1**	25	**25.000**
9	Dongguan Institute of Environmental Sciences	China	**1**	25	**25.000**
11	Christie Hospital NHS Foundation Trust	United	**1**	24	**24.000**
11	National Pesticidal Engineering Centre (Tianjin), Nankai University	China	**1**	24	**24.000**
11	Stavropol Institute of Cooperation, Belgorod University of Cooperation, Economics and Law	Russia	**1**	24	**24.000**
14	CENTRUM Catolica, Pontificia Universidad Catolica de Peru	Peru	**1**	22	**22.000**
15	UNEP-World Conservation Monitoring Centre	United Kingdom	**1**	21	**21.000**
16	CENTRUM Catolica, Centro de Negocios de la Pontificia Universidad Catolica de Peru	Peru	**1**	20	**20.000**
16	Ohio State Univesity	United States of America	**1**	20	**20.000**
16	19 May University	Turkey	**1**	20	**20.000**
16	Policy, Access & Rational Use	Switzerland	**1**	20	**20.000**
20	School of the Environment, Jiangsu University	China	**3**	54	**18.000**
20	College of Chemical Engineering and Material Science, Zhejiang University of Technology	China	**3**	54	**18.000**
20	Institute of Microbe, Shandong Academy of Science	China	**2**	36	**18.000**
20	International Diabetes Federation, South-east Asia Region, National Diabetes Centre	Sri Lanka	**1**	18	**18.000**
20	Biology Institute of Shandong Academy of Science	China	**1**	18	**18.000**
20	Stanford University School of Medicine, Stanford	United States of America	**1**	18	**18.000**

Rank	Institutions	Countries	Articles	Citations	citations / paper
20	Vanderbilt University Medical Center	United States of America	**1**	18	**18.000**
27	Faculty of Science and Literature, University of Inonu	Turkey	**1**	16	**16.000**
27	Hopital Ibn Sina	Morocco	**1**	16	**16.000**
27	Goldman School of Dental Medicine, Boston University	United States of America	**1**	16	**16.000**
27	Faculty of Science, University of Hacettepe	Turkey	**1**	16	**16.000**
31	The Center of Physics and Chemistry, Hebei University	China	**1**	15	**15.000**
31	Nemaura Pharma	United Kingdom	**1**	15	**15.000**
31	Office on Smoking and Health	United States of America	**1**	15	**15.000**
34	S.P.I. I. Institute	Iran	**2**	28	**14.000**
34	Symogen Ltd	United Kingdom	**1**	14	**14.000**
36	University of Michigan, School of Natural Resources and Environment	United States of America	**1**	13	**13.000**
36	Institute of Basic Medical Sciences, University of Oslo	Norway	**1**	13	**13.000**
36	Institute of Medicine, University of Bergen	Norway	**1**	13	**13.000**
36	Fujian Institute of Research on the Structure of Matter,Chinese Academy of Scinces	China	**1**	13	**13.000**
36	Yomra Science High School	Turkey	**1**	13	**13.000**
41	Anhui Institute Of Education	China	**2**	25	**12.500**
42	Institute of Economic Growth & Population Council	United States of America	**1**	12	**12.000**
42	Institute for Public Sector Efficiency Studies (IPSE), Delft University of Technology	Netherlands	**1**	12	**12.000**
42	Institute for Health Policy & Management, Erasmus University Rotterdam/MC	Netherlands	**1**	12	**12.000**
42	School of Dentistry of the University of Sao Paulo	Brazil	**1**	12	**12.000**
42	School of Dentistry, Unlversldade Estadual Paullsta (UNESP)	Brazil	**1**	12	**12.000**
42	Mostafa Khomeini Hospital	Iran	**1**	12	**12.000**
42	Kuban State Agrarian University	Russia	**1**	12	**12.000**
42	Dental Public Health Science College	Saudi Arabia	**1**	12	**12.000**
42	Centre for Materials Research and Innovation, The University of Bolton	United Kingdom	**1**	12	**12.000**

Table 3. 12: Rank order of Top 50 Foreign Countries based on Number of Institutions Contribution in Indian Journals					
Rank	**Countries**	**Institutes**	**Articles**	**Citations**	**Cit/Pap**
1	China	**10228**	23296	5426	0.233
2	United States of America	**6946**	15715	7545	0.480
3	Iran	**5218**	19006	5819	0.306
4	Turkey	**3124**	9473	3354	0.354
5	United Kingdom	**2564**	5045	2497	0.495
6	Brazil	**2221**	3348	1117	0.334
7	Germany	**1731**	2341	890	0.380
8	Malaysia	**1575**	5199	1813	0.349
9	Saudi Arabia	**1487**	4593	1796	0.391
10	France	**1485**	1825	559	0.306
11	Italy	**1438**	2333	602	0.258
12	Japan	**1437**	2967	782	0.264
13	South Korea	**1421**	3984	1292	0.324
14	Nigeria	**1403**	7154	2023	0.283
15	Pakistan	**1242**	3911	1180	0.302
16	Australia	**1119**	2315	1014	0.438
17	Egypt	**1013**	4923	1481	0.301
18	Canada	**991**	2458	1107	0.450
19	Mexico	**945**	1369	367	0.268
20	Russia	**903**	1488	322	0.216
21	Spain	**834**	1146	251	0.219
22	Algeria	**725**	1276	250	0.196
23	Bangladesh	**719**	2582	1080	0.418
24	Iraq	**712**	1571	679	0.432
25	Indonesia	**655**	1940	509	0.262
25	Morocco	**655**	1096	506	0.462
27	Tunisia	**569**	898	162	0.180
28	Taiwan	**542**	1106	349	0.316
29	Thailand	**526**	1950	550	0.282
30	Greece	**497**	849	212	0.250
31	Nepal	**463**	1240	585	0.472
32	Poland	**403**	723	163	0.225
33	Netherlands	**379**	709	341	0.481
34	Switzerland	**365**	564	310	0.550
35	United Arab Emirates	**349**	683	268	0.392
36	Argentina	**333**	407	114	0.280
37	Belgium	**319**	523	217	0.415
38	Ethiopia	**311**	790	290	0.367
39	Portugal	**306**	409	94	0.230
40	Romania	**292**	493	101	0.205
41	Israel	**291**	431	155	0.360
42	Serbia	**283**	539	132	0.245
43	South Africa	**261**	2615	826	0.316
44	Czech Republic	**252**	525	100	0.190
45	Singapore	**244**	612	174	0.284
46	Jordan	**240**	714	177	0.248
46	Sri Lanka	**240**	833	491	0.589
48	Oman	**232**	651	252	0.387
49	Kazakhstan	**229**	383	15	0.039
50	Sweden	**222**	489	201	0.411

Legend: Cit/ Pap = Citations per paper

Table 3.13: Rank order of Top 50 Foreign Countries based on Number of Authors Published in Indian Journals					
Rank	**Countries**	**# Authors**	**Articles**	**Citations**	**citations / paper**
1	China	**35659**	55479	11647	0.210
2	Iran	**25063**	36941	11642	0.315
3	United States of America	**19853**	24830	11873	0.478
4	Turkey	**14802**	20135	7045	0.350
5	Nigeria	**9605**	13078	4011	0.307
6	Egypt	**7691**	10177	3107	0.305
7	Malaysia	**7566**	11087	3911	0.353
8	Brazil	**6222**	7525	2480	0.330
9	United Kingdom	**6104**	7469	3267	0.437
10	Saudi Arabia	**5994**	8227	3189	0.388
11	South Korea	**5324**	7787	2376	0.305
12	Pakistan	**5125**	8364	2575	0.308
13	Japan	**4586**	5897	1342	0.228
14	Italy	**4227**	5204	1416	0.272
15	Bangladesh	**3742**	5412	2396	0.443
16	Germany	**3345**	3897	1341	0.344
17	Russia	**3051**	3730	787	0.211
18	Canada	**3015**	3838	1613	0.420
19	Indonesia	**3011**	4575	1292	0.282
20	Australia	**2696**	3307	1399	0.423
21	France	**2515**	2982	896	0.300
22	South Africa	**2279**	3756	1091	0.290
23	Mexico	**2192**	2738	712	0.260
24	Thailand	**2159**	3441	1099	0.319
25	Spain	**2120**	2361	474	0.201
26	Algeria	**2076**	2768	577	0.208
27	Morocco	**1928**	2820	1235	0.438
28	Tunisia	**1847**	2595	504	0.194
29	Iraq	**1831**	2478	1118	0.451
30	Greece	**1674**	1942	455	0.234
31	Nepal	**1618**	2425	1194	0.492
32	Taiwan	**1447**	1897	582	0.307
33	Sri Lanka	**1215**	1549	862	0.556
34	Poland	**1198**	1430	284	0.199
35	Jordan	**1008**	1255	355	0.283
36	Ethiopia	**949**	1310	446	0.340
37	Netherlands	**941**	1083	513	0.474
38	Serbia	**902**	1123	273	0.243
39	Kazakhstan	**899**	1059	46	0.043
40	Singapore	**858**	989	271	0.274
41	Switzerland	**830**	926	510	0.551
42	United Arab Emirates	**823**	1149	422	0.367
43	Czech Republic	**805**	1094	162	0.148
44	Oman	**792**	1152	438	0.380
45	Belgium	**783**	926	322	0.348
46	Romania	**771**	956	157	0.164
46	Syria	**771**	1105	413	0.374
48	Argentina	**742**	825	220	0.267
49	Portugal	**726**	803	177	0.220
50	Ghana	**635**	814	253	0.311

Chapter 4

Research Performance of Indian States

India is a Union of States and the constitution of India distributes executive and legislative powers between the Union and the State. Primarily, states are the administrative divisions of country; constitutionally-exercisable powers are well demarcated and explained. There are 29 states and 7 Union territories. Higher education system in India is a shared responsibility of Central government, states governments and private sector. The institutes and universities are governed by all the respective three agencies. The distribution of higher education institutes or universities, etc. is not uniformacross the states/country. The accessable opportunities to higher education are not homogenousacross the country to all its citizens. Therefore, to understand it in a better and objective way, we have analyzed the research performance output of higher education institutes/universities from different angles to elicit the factual comparative figures of their performance. The analyzed data is organized into 10 Tables.

Table: 4.1. Deals, State wise research productivity, respect to 'Articles' produced and 'Citations' received to their articles. The Table shows that Tamil Nadu occupies first position in terms of 'Articles' produced, second position in terms of 'Citations received to their produced articles and 22 positions in 'Citation / Paper'. Similarly, all other states have different Rank/Position on different parameters but Delhi as a state is one to occupy almost constant position/rank, i.e 5, 5, and 4 on all the three parameters.

Table: 4.2. Deals, State wise contribution made by their number of institutes as per 'Articles', 'Citations', 'citations / paper' and Article/Institute. The Table has 4 parameters to evaluate state wise research productivity whereas Table 4. 1 has three. In this Table number of institutes/universities per state is the major focus to see it in relation to other parameters, viz: Articles, Citations, citations / paper and Article/Institute.

Table: 4.3. Gives focus on state wise research output in number of journals and based on this, evaluation is done on 'Number of Journals' 'Articles' 'Citations', 'Article/Journal', and 'C/Journal'. The data shows Uttar Pradesh is at first position in terms of publishing in number of journals, followed by Maharashtra, Karnataka, Tamil Nadu, Delhi, and so on. The Table is self-explanatory to highlight the significant points.

Table: 4.4 Focuses on State wise number of Authors' contribution and while examining inter-state number of Authors, Maharashtra is at number 01, followed by Tamil Nadu, Karnataka, Uttar Pradesh, Delhi and so on. The lowest 36th position is of Lakshadweep (UT), preceded by Daman and Diu at 35th, Dadra and Nagar Haveli at 34th, Mizoram at 33rd, Andaman and Nicobar at 32nd, Nagaland at 31st, Arunachal Pradesh at 30th,

Sikkim at 29th, Tripura at 28th, and so on. It reveals that number of 'Authors' are relatively low in most North East region States and UTs that may be due to their size, population and number of institutes.

Table: 4.5. It focuses on Subject wise contribution from number of States. The Table shows that 'Health Science' occupies rank one wherein all 36 states and UTs have made their contribution, followed by Biological Science, Pharmacology and Pharmaceutical Science, Environmental Science, Engineering, 35 Subjects and so on. At lowest is the 'Apiculture', 10 States contribution and it is preceded by 'Nanoscience and Nanotechnology', contribution from 15 States.

Table: 4.6. It shows that Delhi as a State is at first position in terms of publishing journals, followed by Maharashtra, Uttar Pradesh, Tamil Nadu, and West Bengal and so on. At bottom are the four States - Jharkhand, Meghalaya, Sikkim and Puducherry, allfour are publishing one journal each and stand at rank number 22. Also, there are 11 States–Chhattisgarh, Manipur, Goa, Tripura, Arunachal Pradesh, Nagaland, Mizoram, Andaman and Nicobar Islands (UT), Dadra and Nagar Haveli (UT), Daman and Diu (UT) and Lakshadweep (UT) which have not published any journal. Publication of research journal is also one of the indicators of scholarly activity of an institute/region/state/country.

Table: 4.7. This table shows that Delhi as a City is at 1st position by publishing 386 research journals, followed by Mumbai, 115 journals and next only 9 cities are producing/contributing journals double digits and rest of the cities of top 50 have produced/published journals in single digit. It indicates that in India spread of scholarly activities are concentrated in a very few metropolitian cities only which is not healthy sign being so large in size and population.

Table: 4.8. Gives a rank list of 50 top journals based on number of articles, citations, and citations/paper. In this rank order, '*Asian Journal of Chemistry'* is at 1st rank, 13259 articles; based on number of citations received *'Current Science'*, 6564 citations is at 1st rank; and *'Journal of Environmental Biology',* 1.788 citations per paper is at 1st rank.

Table: 4.9. It provides a subject wise list of top 10 journals based on articles, citations received, and citations/paper. The list has 26 subject categories, out of 51 total subject categories of ICI.

Table: 4.10. It provides a 22 subjects list which has less than 10 journals indexed in ICI. In ICI subjects' categorization, three subjects could not find good indexable journal (s) published from India so far.

Table 4. 1: Rank Order of State-wise Research Productivity based on Articles, Citations& Citation/Paper							
S. N	**States**	**Articles**	**Rank Articles**	**Citations**	**Rank Citations**	**Citations / paper**	**Rank citations / paper**
1	Tamil Nadu	51195	**1**	27611	**2**	0.539	**22**
2	Maharashtra	49223	**2**	27777	**1**	0.564	**20**
3	Uttar Pradesh	40593	**3**	23796	**4**	0.586	**17**
4	Karnataka	40140	**4**	23998	**3**	0.598	**14**
5	Delhi	33220	**5**	23005	**5**	0.693	**5**
6	West Bengal	22558	**6**	10641	**6**	0.472	**31**
7	Telangana	18942	**7**	9984	**8**	0.527	**24**
8	Gujarat	16543	**8**	10271	**7**	0.621	**9**
9	Andhra Pradesh	16034	**9**	7612	**11**	0.475	**30**
10	Rajasthan	15954	**10**	9301	**9**	0.583	**19**
11	Haryana	14457	**11**	7426	**12**	0.514	**26**
12	Punjab	14399	**12**	7349	**13**	0.510	**27**
13	Madhya Pradesh	13808	**13**	8324	**10**	0.603	**11**
14	Kerala	12531	**14**	6118	**15**	0.488	**28**
15	Uttarakhand	11941	**15**	7126	**14**	0.597	**15**
16	Orissa	7604	**16**	4559	**16**	0.600	**12**
17	Jammu and Kashmir	6937	**17**	3252	**20**	0.469	**32**
18	Himachal Pradesh	6232	**18**	3759	**18**	0.603	**10**
19	Assam	6103	**19**	3615	**19**	0.592	**16**
20	Chandigarh (UT)	5804	**20**	3802	**17**	0.655	**8**
21	Bihar	4238	**21**	2050	**22**	0.484	**29**
22	Chhattisgarh	4134	**22**	1667	**23**	0.403	**36**
23	Puducherry (UT)	4132	**23**	2244	**21**	0.543	**21**
24	Jharkhand	3859	**24**	1566	**24**	0.406	**35**
25	Meghalaya	1707	**25**	1133	**25**	0.664	**7**
26	Manipur	1549	**26**	823	**28**	0.531	**23**
27	Goa	1253	**27**	876	**26**	0.699	**4**
28	Tripura	921	**28**	429	**30**	0.466	**33**
29	Arunachal Pradesh	901	**29**	616	**29**	0.684	**6**
30	Sikkim	881	**30**	866	**27**	0.983	**2**
31	Nagaland	651	**31**	338	**32**	0.519	**25**
32	Mizoram	519	**32**	311	**33**	0.599	**13**
33	Andaman and Nicobar Islands (UT)	489	**33**	361	**31**	0.738	**3**
34	Dadra and Nagar Haveli (UT)	31	**34**	13	**35**	0.419	**34**
35	Daman and Diu (UT)	24	**35**	14	**34**	0.583	**18**
36	Lakshadweep (UT)	6	**36**	8	**36**	1.333	**1**

Legend: citations / paper = Citation/paper

Table 4. 2:Rank Order of State-wise Research Productivity based on Counts of Institution, Articles, Citations, Articles/Institute and Citations/Institute										
States	**Institution Counts**	**RankIC**	**Articles**	**RankA**	**Citations**	**RankC**	**A/Inst**	**Rank A/Inst**	**C/Inst**	**Rank C/Inst**
Maharashtra	4078	**1**	66343	**2**	37765	**1**	16.269	**20**	9.261	**21**
Tamil Nadu	2745	**2**	68770	**1**	36694	**2**	25.053	**5**	13.368	**8**
Karnataka	2316	**3**	51468	**3**	30670	**3**	22.223	**9**	13.243	**10**
Uttar Pradesh	2029	**4**	49115	**4**	28192	**5**	24.207	**7**	13.895	**7**
Delhi	1723	**5**	41739	**5**	30272	**4**	24.225	**6**	17.569	**3**
West Bengal	1702	**6**	30244	**6**	14535	**6**	17.77	**16**	8.540	**25**
Telangana	1600	**7**	24155	**7**	12480	**8**	15.097	**25**	7.800	**27**
Gujarat	1385	**8**	21563	**8**	13793	**7**	15.569	**24**	9.959	**17**
Andhra Pradesh	1121	**9**	20957	**9**	9823	**11**	18.695	**14**	8.763	**23**
Madhya Pradesh	1048	**10**	17444	**11**	10378	**10**	16.645	**18**	9.903	**18**
Kerala	1041	**11**	15242	**14**	7623	**15**	14.642	**26**	7.323	**28**
Haryana	881	**12**	17165	**12**	8816	**12**	19.484	**13**	10.007	**16**
Rajasthan	863	**13**	19069	**10**	11444	**9**	22.096	**10**	13.261	**9**
Punjab	731	**14**	16885	**13**	8379	**13**	23.098	**8**	11.462	**13**
Orissa	626	**15**	9768	**16**	5789	**16**	15.604	**23**	9.248	**22**
Bihar	477	**16**	5388	**21**	2744	**21**	11.296	**33**	5.753	**31**
Uttarakhand	459	**17**	13710	**15**	8231	**14**	29.869	**3**	17.932	**2**
Assam	405	**18**	7397	**18**	4389	**17**	18.264	**15**	10.837	**14**
Chhattisgarh	350	**19**	4893	**22**	1881	**23**	13.98	**27**	5.374	**32**
Himachal Pradesh	317	**20**	6897	**19**	4134	**18**	21.757	**11**	13.041	**11**
Jharkhand	268	**21**	4438	**24**	1716	**24**	16.56	**19**	6.403	**30**
Jammu and Kashmir*	262	**22**	7993	**17**	3731	**20**	30.508	**1**	14.240	**5**
Chandigarh (UT)	208	**23**	6235	**20**	4087	**19**	29.976	**2**	19.649	**1**
Puducherry (UT)	168	**24**	4534	**23**	2445	**22**	26.988	**4**	14.554	**4**
Goa	112	**25**	1362	**27**	966	**28**	12.161	**30**	8.625	**24**
Manipur	108	**26**	1841	**25**	1021	**26**	17.046	**17**	9.454	**20**
Tripura	93	**27**	1114	**28**	492	**30**	11.978	**32**	5.290	**33**
Meghalaya	85	**28**	1799	**26**	1192	**25**	21.165	**12**	14.024	**6**
Sikkim	78	**29**	951	**29**	969	**27**	12.192	**29**	12.423	**12**
Arunachal Pradesh	60	**30**	944	**30**	645	**29**	15.733	**22**	10.750	**15**
Mizoram	46	**31**	552	**32**	332	**33**	12	**31**	7.217	**29**
Nagaland	43	**32**	685	**31**	355	**32**	15.93	**21**	8.256	**26**
Andaman and Nicobar Islands (UT)	42	**33**	540	**33**	406	**31**	12.857	**28**	9.667	**19**
Dadra and Nagar Haveli (UT)	8	**34**	32	**34**	13	**35**	4	**34**	1.625	**35**
Daman and Diu (UT)	8	**35**	24	**35**	14	**34**	3	**35**	1.750	**34**
Lakshadweep (UT)	5	**36**	6	**36**	8	**36**	1.2	**36**	1.600	**36**

Legend: A = Articles; C = Citation; IC = Institute Counts; A/Inst = Articles/Institute; C/Inst = Citations/Institute

Table 4. 3: Rank Order of State-wise Research Productivity based on Counts of Journal, Articles, Citations, Articles/Journal and Citations/Journal										
States	**Journal Counts**	**Rank JC**	**Articles**	**Rank A**	**Citations**	**Rank C**	**A/J**	**Rank A/J**	**C/J**	**Rank C/J**
Uttar Pradesh	881	**1**	40593	**3**	23796	**4**	46.076	**4**	27.010	**5**
Maharashtra	879	**2**	49223	**2**	27777	**1**	55.999	**2**	31.601	**2**
Karnataka	856	**3**	40140	**4**	23998	**3**	46.893	**3**	28.035	**3**
Tamil Nadu	855	**4**	51195	**1**	27611	**2**	59.877	**1**	32.294	**1**
Delhi	848	**5**	33220	**5**	23005	**5**	39.175	**5**	27.129	**4**
Telangana	809	**6**	18942	**7**	9984	**8**	23.414	**7**	12.341	**8**
West Bengal	805	**7**	22558	**6**	10641	**6**	28.022	**6**	13.219	**7**
Rajasthan	771	**8**	15954	**10**	9301	**9**	20.693	**10**	12.064	**9**
Gujarat	765	**9**	16543	**8**	10271	**7**	21.625	**9**	13.426	**6**
Madhya Pradesh	750	**10**	13808	**13**	8324	**10**	18.411	**13**	11.099	**10**
Haryana	749	**11**	14457	**11**	7426	**12**	19.302	**12**	9.915	**14**
Andhra Pradesh	729	**12**	16034	**9**	7612	**11**	21.995	**8**	10.442	**11**
Kerala	722	**13**	12531	**14**	6118	**15**	17.356	**14**	8.474	**15**
Uttarakhand	715	**14**	11941	**15**	7126	**14**	16.701	**15**	9.966	**13**
Punjab	705	**15**	14399	**12**	7349	**13**	20.424	**11**	10.424	**12**
Orissa	699	**16**	7604	**16**	4559	**16**	10.878	**19**	6.522	**18**
Assam	623	**17**	6103	**19**	3615	**19**	9.796	**20**	5.803	**19**
Jammu and Kashmir	610	**18**	6937	**17**	3252	**20**	11.372	**16**	5.331	**20**
Himachal Pradesh	571	**19**	6232	**18**	3759	**18**	10.914	**18**	6.583	**17**
Jharkhand	540	**20**	3859	**24**	1566	**24**	7.146	**24**	2.900	**27**
Chhattisgarh	539	**21**	4134	**22**	1667	**23**	7.670	**23**	3.093	**24**
Chandigarh (UT)	531	**22**	5804	**20**	3802	**17**	10.930	**17**	7.160	**16**
Puducherry (UT)	497	**23**	4132	**23**	2244	**21**	8.314	**22**	4.515	**21**
Bihar	491	**24**	4238	**21**	2050	**22**	8.631	**21**	4.175	**22**
Meghalaya	369	**25**	1707	**25**	1133	**25**	4.626	**26**	3.070	**25**
Manipur	307	**26**	1549	**26**	823	**28**	5.046	**25**	2.681	**30**
Goa	298	**27**	1253	**27**	876	**26**	4.205	**27**	2.940	**26**
Sikkim	268	**28**	881	**30**	866	**27**	3.287	**32**	3.231	**23**
Tripura	263	**29**	921	**28**	429	**30**	3.502	**31**	1.631	**33**
Arunachal Pradesh	228	**30**	901	**29**	616	**29**	3.952	**29**	2.702	**29**
Mizoram	173	**31**	519	**32**	311	**33**	3.000	**33**	1.798	**32**
Nagaland	159	**32**	651	**31**	338	**32**	4.094	**28**	2.126	**31**
Andaman and Nicobar Islands (UT)	128	**33**	489	**33**	361	**31**	3.820	**30**	2.820	**28**
Dadra and Nagar Haveli (UT)	19	**34**	31	**34**	13	**35**	1.632	**34**	0.684	**36**
Daman and Diu (UT)	15	**35**	24	**35**	14	**34**	1.600	**35**	0.933	**35**
Lakshadweep (UT)	6	**36**	6	**36**	8	**36**	1.000	**36**	1.333	**34**

Legend: A = Articles; C = Citations; JC = Journal Counts; A/J = Articles/Journal; C/J = Citations/Journal

Table 4. 4: Rank Order of State-wise Research Productivity based on Counts of Authors, Articles, Citations, Articles/Author and Citations/Author										
States	**Author Counts**	**Rank AcC**	**Articles**	**Rank A**	**Citations**	**RankC**	**Articles/ Author**	**Rank A/Ac**	**Citations/ Author**	**Rank C/Ac**
Maharashtra	62296	**1**	138677	**2**	65868	**4**	2.226	**26**	1.057	**19**
Tamil Nadu	52475	**2**	142582	**1**	20263	**12**	2.717	**9**	0.386	**31**
Karnataka	50615	**3**	118123	**3**	9384	**19**	2.334	**22**	0.185	**33**
Uttar Pradesh	33839	**4**	108104	**4**	19299	**13**	3.195	**2**	0.570	**27**
Delhi	29837	**5**	84930	**5**	11582	**17**	2.846	**7**	0.388	**30**
Telangana	23050	**6**	51310	**7**	64668	**5**	2.226	**27**	2.806	**12**
West Bengal	22309	**7**	58865	**6**	17609	**14**	2.639	**13**	0.789	**21**
Andhra Pradesh	20113	**8**	44780	**9**	79925	**2**	2.226	**25**	3.974	**11**
Gujarat	19985	**9**	48507	**8**	1063	**30**	2.427	**17**	0.053	**36**
Kerala	15088	**10**	32704	**14**	4869	**22**	2.168	**30**	0.323	**32**
Rajasthan	14771	**11**	39779	**10**	9753	**18**	2.693	**11**	0.660	**23**
Madhya Pradesh	14439	**12**	34404	**13**	29868	**7**	2.383	**19**	2.069	**14**
Haryana	12386	**13**	37000	**12**	1279	**29**	2.987	**4**	0.103	**34**
Punjab	11386	**14**	37675	**11**	24417	**9**	3.309	**1**	2.144	**13**
Uttarakhand	9892	**15**	28558	**15**	11884	**16**	2.887	**6**	1.201	**17**
Orissa	7692	**16**	19461	**17**	30928	**6**	2.53	**15**	4.021	**10**
Jammu and Kashmir	7689	**17**	20749	**16**	742	**32**	2.699	**10**	0.097	**35**
Assam	6245	**18**	14768	**20**	2609	**25**	2.365	**21**	0.418	**29**
Chandigarh (UT)	5402	**19**	16107	**18**	3420	**24**	2.982	**5**	0.633	**25**
Himachal Pradesh	4928	**20**	15438	**19**	21141	**11**	3.133	**3**	4.290	**8**
Puducherry (UT)	4687	**21**	10405	**22**	73223	**3**	2.22	**28**	15.623	**4**
Chhattisgarh	4497	**22**	10421	**21**	9008	**20**	2.317	**23**	2.003	**15**
Bihar	3667	**23**	9641	**23**	4388	**23**	2.629	**14**	1.197	**18**
Jharkhand	3620	**24**	8718	**24**	2027	**27**	2.408	**18**	0.560	**28**
Manipur	2035	**25**	3923	**25**	21987	**10**	1.928	**32**	10.804	**5**
Goa	1554	**26**	2897	**27**	27146	**8**	1.864	**33**	17.468	**3**
Meghalaya	1476	**27**	3498	**26**	85041	**1**	2.37	**20**	57.616	**1**
Tripura	953	**28**	2006	**28**	5922	**21**	2.105	**31**	6.214	**6**
Sikkim	843	**29**	1906	**30**	16369	**15**	2.261	**24**	19.418	**2**
Arunachal Pradesh	732	**30**	1941	**29**	571	**33**	2.652	**12**	0.780	**22**
Nagaland	551	**31**	1373	**31**	882	**31**	2.492	**16**	1.601	**16**
Andaman and Nicobar Islands (UT)	473	**32**	1300	**32**	1947	**28**	2.748	**8**	4.116	**9**
Mizoram	458	**33**	1013	**33**	2271	**26**	2.212	**29**	4.959	**7**
Dadra and Nagar Haveli (UT)	39	**34**	59	**34**	37	**34**	1.513	**34**	0.949	**20**
Daman and Diu (UT)	22	**35**	29	**35**	14	**35**	1.318	**35**	0.636	**24**
Lakshadweep (UT)	13	**36**	13	**36**	8	**36**	1	**36**	0.615	**26**

Legend: A = Article; C = Citation; AcC = Author Count; A/Ac = Articles/Author; C/Ac = Citations/Author

Table 4. 5: Rank Order of Subjects wise Research Productivity based on Number of States, Articles, Citations, Articles/Subject and Citations/Subject

Subjects	State Counts	Rank SC	A	Rank A	C	Rank C	A/SC	Rank A/SC
Health Science	36	**1**	117604	**1**	67611	**1**	3266.778	**1**
Biological Science	35	**2**	58148	**2**	28565	**4**	1661.371	**3**
Pharmacology and Pharmaceutical Science	35	**2**	53693	**4**	43952	**2**	1534.086	**4**
Environmental Science	35	**2**	26569	**6**	10755	**8**	759.114	**6**
Engineering Science and Technology	35	**2**	24555	**7**	6338	**11**	701.571	**8**
Chemistry	34	**6**	33393	**5**	18486	**5**	982.147	**5**
GENERAL SCIENCE & TECHNOLOGY	34	**6**	17443	**10**	12735	**7**	513.029	**10**
Education	34	**6**	6138	**20**	1366	**25**	180.529	**20**
Agriculture	33	**9**	56165	**3**	39089	**3**	1701.97	**2**
Botany	33	**9**	23569	**8**	15657	**6**	714.212	**7**
Veterinary Science	33	**9**	17877	**9**	8654	**9**	541.727	**9**
Zoology	33	**9**	14986	**11**	7815	**10**	454.121	**11**
Social Science	33	**9**	14343	**12**	4967	**12**	434.636	**12**
Physics	33	**9**	8145	**13**	4693	**14**	246.818	**13**
Dairying, Dairy, Animals and Animals Produce	33	**9**	7723	**14**	4859	**13**	234.03	**14**
Earth and Geological Science	33	**9**	7616	**15**	4537	**15**	230.788	**15**
Management	33	**9**	7432	**16**	1167	**26**	225.212	**16**
Forestry	33	**9**	7353	**17**	2467	**20**	222.818	**17**
Computer Science and Technology	33	**9**	7183	**18**	870	**34**	217.667	**18**
Biotechnology	33	**9**	6306	**19**	2345	**21**	191.091	**19**
Toxicology	33	**9**	4847	**22**	1721	**24**	146.879	**23**
Food and Beverage Science	33	**9**	4586	**23**	3815	**16**	138.97	**24**
Others	33	**9**	3337	**30**	2910	**17**	101.121	**30**
Arts and Humanities	33	**9**	1800	**33**	50	**46**	54.545	**34**
History and Philosophy of Science and Knowledge	33	**9**	1566	**35**	2671	**18**	47.455	**37**
Anthropology	33	**9**	1465	**38**	381	**39**	44.394	**39**
Psychology	32	**27**	4439	**25**	2570	**19**	138.719	**25**
Economics	32	**27**	4123	**26**	2339	**22**	128.844	**26**
Business and Marketing	32	**27**	4108	**27**	1057	**29**	128.375	**27**
Library and Information Science	32	**27**	3689	**28**	2000	**23**	115.281	**29**
Pollution	32	**27**	2791	**31**	969	**31**	87.219	**31**
Fishery	32	**27**	2173	**32**	928	**33**	67.906	**32**
Mathematics	31	**33**	4932	**21**	1111	**28**	159.097	**21**
Statistics	31	**33**	4586	**24**	1042	**30**	147.935	**22**
Rural development	31	**33**	472	**45**	131	**42**	15.226	**45**
Population Studies	31	**33**	431	**46**	194	**41**	13.903	**46**
Material Science	30	**37**	3466	**29**	950	**32**	115.533	**28**
Domestic Science	30	**37**	1485	**37**	374	**40**	49.5	**36**
Water	30	**37**	734	**41**	92	**45**	24.467	**42**
Meteorology	29	**40**	1551	**36**	1161	**27**	53.483	**35**
Astronomy, Astrophysics, Space and Geodesy	29	**40**	1350	**39**	432	**38**	46.552	**38**
Oceanography and Marine Science	29	**40**	950	**40**	466	**37**	32.759	**40**
Remote Sensing	28	**43**	667	**43**	610	**36**	23.821	**43**
Energy and Fuel Science	28	**43**	610	**44**	119	**44**	21.786	**44**
Law	26	**45**	672	**42**	122	**43**	25.846	**41**
Telecommunication	26	**45**	212	**47**	6	**49**	8.154	**47**
Textile	25	**47**	1594	**34**	626	**35**	63.76	**33**
Nanoscience and Nanotechnology	15	**48**	48	**48**	18	**47**	3.2	**49**
Apiculture	10	**49**	33	**49**	7	**48**	3.3	**48**

Legend: A = Articles; C = Citations; SC = State Count

Table 4. 6: Rank Order of State-wise Counts of Journals Published, Articles, Citations, Citations/Journal and Articles/Journal										
States	**Journal Counts**	**RankJC**	**Articles**	**Rank A**	**Citations**	**Rank C**	**Citations/JC**	**RankC/JC**	**A/JC**	**Rank A/JC**
Delhi	386	**1**	145102	**1**	75114	**1**	194.596	**9**	375.912	**15**
Maharashtra	149	**2**	96155	**2**	59641	**2**	400.275	**2**	645.336	**6**
Uttar Pradesh	68	**3**	46338	**3**	16045	**4**	235.956	**6**	681.441	**5**
Tamil Nadu	63	**4**	32679	**4**	23035	**3**	365.635	**4**	859.974	**2**
West Bengal	62	**5**	28972	**5**	11740	**5**	189.355	**10**	459.873	**9**
Karnataka	38	**6**	27993	**6**	9669	**7**	254.447	**5**	451.500	**10**
Kerala	24	**7**	18848	**7**	9061	**8**	377.542	**3**	942.400	**1**
Rajasthan	20	**8**	17185	**8**	11281	**6**	564.050	**1**	859.250	**3**
Madhya Pradesh	20	**8**	10300	**9**	2596	**12**	129.800	**14**	429.167	**13**
Uttarakhand	18	**10**	10227	**10**	3265	**10**	181.389	**11**	681.800	**4**
Telangana	17	**11**	7918	**11**	3339	**9**	196.412	**7**	527.867	**8**
Gujarat	15	**12**	7561	**12**	2925	**11**	195.000	**8**	420.056	**14**
Haryana	15	**12**	5121	**13**	1898	**13**	126.533	**15**	301.235	**17**
Punjab	9	**14**	3049	**14**	1319	**14**	146.556	**13**	338.778	**16**
Andhra Pradesh	8	**15**	2263	**15**	453	**15**	56.625	**19**	282.875	**18**
Chandigarh (UT)	7	**16**	1241	**16**	163	**19**	23.286	**22**	248.200	**19**
Orissa	5	**17**	1104	**17**	187	**18**	37.400	**21**	552.000	**7**
Bihar	3	**18**	1068	**18**	269	**17**	89.667	**16**	152.571	**21**
Himachal Pradesh	2	**19**	902	**19**	318	**16**	159.000	**12**	451.000	**11**
Jammu and Kashmir	2	**19**	632	**20**	118	**20**	59.000	**18**	210.667	**20**
Assam	2	**19**	438	**21**	109	**21**	54.500	**20**	438.000	**12**
Jharkhand	1	**22**	114	**22**	89	**22**	89.000	**17**	57.000	**24**
Meghalaya	1	**22**	84	**23**	2	**24**	2.000	**24**	84.000	**22**
Sikkim	1	**22**	60	**24**	22	**23**	22.000	**23**	60.000	**23**
Puducherry (UT)	1	**22**	32	**25**	1	**25**	1.000	**25**	32.000	**25**

Legend: A = Articles; C = Citations; JC= Journal Counts; C/JC = Citations/Journal Count; A/JC = Articles/Journal Count

Table 4. 7: Rank Order of Top 50 Cities based on Number of Journals Published, Articles, Citations and Citations/Journal								
City	**Journal Counts**	**Rank JC**	**Article**	**Rank A**	**Citation**	**Rank C**	**Citations/Journal Count**	**Rank C/J**
New Delhi	386	**1**	145102	**1**	75114	**1**	194.596	**17**
Mumbai	115	**2**	80032	**2**	55759	**2**	484.861	**6**
Kolkata	60	**3**	26788	**3**	9518	**4**	158.633	**24**
Chennai	31	**4**	18608	**5**	6377	**6**	205.710	**16**
Bengaluru	25	**5**	24814	**4**	16348	**3**	653.920	**3**
Hyderabad	16	**6**	4564	**15**	1736	**14**	108.500	**29**
Pune	14	**7**	6358	**10**	1308	**19**	93.429	**33**
Muzaffarnagar	13	**8**	10072	**7**	2901	**7**	223.154	**13**
Allahabad	11	**9**	6391	**9**	1965	**13**	178.636	**20**
Lucknow	11	**10**	4066	**16**	2129	**11**	193.545	**18**
Bhopal	10	**11**	5722	**13**	2265	**10**	226.500	**12**
Dehradun	9	**12**	5594	**14**	2271	**9**	252.333	**11**
Agra	9	**13**	3498	**19**	967	**24**	107.444	**31**
Kanyakumari	9	**14**	1446	**27**	36	**48**	4.000	**49**
Jaipur	8	**15**	10285	**6**	6960	**5**	870.000	**1**
Udaipur	8	**16**	7151	**8**	1646	**15**	205.750	**15**
Thiruvananthapuram	8	**17**	6072	**12**	1347	**18**	168.375	**22**
Hisar	7	**18**	4028	**17**	1095	**22**	156.429	**25**
Chandigarh	7	**19**	1068	**30**	269	**34**	38.429	**43**
Nagpur	6	**20**	3719	**18**	1025	**23**	170.833	**21**
Coimbatore	4	**21**	3001	**20**	1633	**16**	408.250	**7**
Mysore	4	**22**	2950	**21**	2442	**8**	610.500	**4**
Indore	4	**23**	2472	**23**	657	**26**	164.250	**23**
Varanasi	4	**24**	2161	**25**	1264	**20**	316.000	**9**
Ludhiana	4	**25**	1723	**26**	454	**28**	113.500	**27**
Kochi	4	**26**	1162	**29**	581	**27**	145.250	**26**
Ahmedabad	4	**27**	572	**42**	145	**40**	36.250	**45**
Surat	3	**28**	6171	**11**	1505	**17**	501.667	**5**
Rohtak	3	**29**	2739	**22**	1970	**12**	656.667	**2**
Rajkot	3	**30**	2360	**24**	1161	**21**	387.000	**8**
Palayamkottai	3	**31**	933	**31**	875	**25**	291.667	**10**
Jodhpur	3	**32**	918	**32**	314	**32**	104.667	**32**
Haridwar	3	**33**	854	**33**	324	**31**	108.000	**30**

City	Journal Counts	Rank JC	Article	Rank A	Citation	Rank C	Citations/Journal Count	Rank C/J
Noida	3	**34**	822	**34**	264	**35**	88.000	**35**
Thrissur	3	**35**	724	**35**	227	**36**	75.667	**36**
Jabalpur	3	**36**	683	**36**	104	**46**	34.667	**46**
Aligarh	3	**37**	647	**37**	152	**39**	50.667	**41**
Kozhikode	3	**38**	581	**40**	272	**33**	90.667	**34**
Patiala	3	**39**	501	**44**	129	**42**	43.000	**42**
Roorkee	3	**40**	403	**46**	226	**38**	75.333	**37**
Visakhapatnam	3	**41**	304	**50**	115	**44**	38.333	**44**
Jhansi	2	**42**	1170	**28**	376	**30**	188.000	**19**
Anand	2	**43**	612	**38**	432	**29**	216.000	**14**
Jalgaon	2	**44**	590	**39**	126	**43**	63.000	**39**
Cuttack	2	**45**	574	**41**	115	**44**	57.500	**40**
Bhubaneswar	2	**46**	572	**42**	48	**47**	24.000	**47**
Izzatnagar	2	**47**	477	**45**	139	**41**	69.500	**38**
Jagadhri	2	**48**	362	**47**	227	**36**	113.500	**27**
Jamnagar	2	**49**	331	**48**	7	**50**	3.500	**50**
Ambala	2	**50**	312	**49**	16	**49**	8.000	**48**

Legend: A = Article; C = Citation; JC = Journal Counts; C/J = Citations / Paper

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Table 4.8: Rank Order of Top 50 Indian Journals: Based on Articles, Citations and Citations/Paper							
Indian Journals	**States**	**Article**	**Rank A**	**Citation**	**Rank C**	**C/P**	**Rank C/P**
ASIAN JOURNAL OF CHEMISTRY	Uttar Pradesh	13259	**1**	4615	**4**	0.348	**31**
JOURNAL OF CHEMICAL AND PHARMACEUTICAL RESEARCH	Rajasthan	7500	**2**	5158	**3**	0.688	**16**
CURRENT SCIENCE	Karnataka	6221	**3**	6564	**1**	1.055	**6**
INTERNATIONAL JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES	Madhya Pradesh	5585	**4**	6490	**2**	1.162	**4**
JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH	Delhi	5429	**5**	1152	**27**	0.212	**41**
INDIAN VETERINARY JOURNAL (THE)	Kerala	4981	**6**	993	**31**	0.199	**42**
ENVIRONMENT AND ECOLOGY	West Bengal	4845	**7**	1032	**30**	0.213	**40**
ECONOMIC AND POLITICAL WEEKLY	Maharashtra	4814	**8**	2923	**8**	0.607	**20**
RESEARCH JOURNAL OF PHARMACEUTICAL, BIOLOGICAL, AND CHEMICAL SCIENCES	Gujarat	4810	**9**	1101	**28**	0.229	**39**
JOURNAL OF PHARMACY RESEARCH	West Bengal	4404	**10**	2486	**11**	0.564	**25**
INTERNATIONAL JOURNAL OF CHEMTECH RESEARCH	Maharashtra	3631	**11**	2293	**14**	0.632	**18**
INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY	Tamil Nadu	3566	**12**	2474	**12**	0.694	**15**
INDIAN JOURNAL OF ANIMAL SCIENCES	Delhi	3108	**13**	2292	**15**	0.737	**14**
INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE AND TECHNOLOGY	Tamil Nadu	2900	**14**	525	**40**	0.181	**44**
INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES: REVIEW AND RESEARCH	Karnataka	2802	**15**	1160	**26**	0.414	**27**
INDIAN JOURNAL OF MEDICAL RESEARCH (THE)	Delhi	2609	**16**	4463	**5**	1.711	**2**
INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN COMPUTER SCIENCE	Rajasthan	2586	**17**	72	**50**	0.028	**50**
INDIAN JOURNAL OF PEDIATRICS (THE)	Delhi	2578	**18**	2061	**16**	0.799	**13**
JOURNAL OF THE INDIAN CHEMICAL SOCIETY	West Bengal	2547	**19**	1464	**21**	0.575	**23**
INDIAN PEDIATRICS	Maharashtra	2521	**20**	2489	**10**	0.987	**8**
JOURNAL OF FOOD SCIENCE AND TECHNOLOGY	Karnataka	2479	**21**	2357	**13**	0.951	**9**
INTERNATIONAL JOURNAL OF CHEMICAL SCIENCES	Rajasthan	2442	**22**	767	**34**	0.314	**32**
INDIAN JOURNAL OF AGRICULTURAL SCIENCES (THE)	Delhi	2422	**23**	2768	**9**	1.143	**5**
PLANT ARCHIVES	Uttar Pradesh	2325	**24**	678	**36**	0.292	**36**

Indian Journals	States	Article	Rank A	Citation	Rank C	C/P	Rank C/P
NEUROLOGY INDIA	Maharashtra	2164	**25**	1292	**23**	0.597	**21**
ECOLOGY ENVIRONMENT & CONSERVATION	Maharashtra	2154	**26**	247	**46**	0.115	**46**
RESEARCH JOURNAL OF PHARMACY AND TECHNOLOGY	Delhi	2129	**27**	641	**37**	0.301	**35**
ORIENTAL JOURNAL OF CHEMISTRY	Madhya Pradesh	2128	**28**	1213	**25**	0.570	**24**
JOURNAL OF ASSOCIATION OF PHYSICIANS OF INDIA	Maharashtra	2118	**29**	1912	**18**	0.903	**10**
INDIAN JOURNAL OF PATHOLOGY & MICROBIOLOGY	Maharashtra	2114	**30**	1248	**24**	0.590	**22**
INDIAN FORESTER (THE)	Uttarakhand	2101	**31**	797	**33**	0.379	**28**
ASIAN JOURNAL OF PHARMACEUTICAL AND CLINICAL RESEARCH	Madhya Pradesh	2077	**32**	1694	**19**	0.816	**11**
FAR EAST JOURNAL OF MATHEMATICAL SCIENCES (FJMS)	Uttar Pradesh	2066	**33**	628	**38**	0.304	**34**
INDIAN JOURNAL OF OPHTHALMOLOGY	Maharashtra	2029	**34**	1380	**22**	0.680	**17**
INTERNATIONAL JOURNAL OF PHARMTECH RESEARCH	Maharashtra	2019	**35**	3062	**6**	1.517	**3**
PRAMANA- JOURNAL OF PHYSICS	Karnataka	2013	**36**	373	**44**	0.185	**43**
KARNATAKA JOURNAL OF AGRICULTURAL SCIENCES	Karnataka	1991	**37**	2042	**17**	1.026	**7**
INDIAN JOURNAL OF DERMATOLOGY, VENEREOLOGY & LEPROLOGY	Delhi	1913	**38**	1547	**20**	0.809	**12**
SAUDI JOURNAL OF KIDNEY DISEASES AND TRANSPLANTATION	Maharashtra	1847	**39**	680	**35**	0.368	**29**
BIOSCIENCES, BIOTECHNOLOGY RESEARCH ASIA	Madhya Pradesh	1806	**40**	199	**47**	0.110	**47**
INDIAN JOURNAL OF DERMATOLOGY	Maharashtra	1778	**41**	1100	**29**	0.619	**19**
INTERNATIONAL JOURNAL OF CURRENT RESEARCH AND REVIEW	Maharashtra	1760	**42**	83	**49**	0.047	**49**
INDIAN JOURNAL OF ANAESTHESIA	Maharashtra	1738	**43**	864	**32**	0.497	**26**
TRENDS IN BIOSCIENCES	Delhi	1693	**44**	129	**48**	0.076	**48**
RESEARCH ON CROPS	Haryana	1679	**45**	440	**42**	0.262	**38**
BULLETIN OF MATERIALS SCIENCE	Karnataka	1671	**46**	518	**41**	0.310	**33**
ASIAN JOURNAL OF MICROBIOLOGY BIOTECHNOLOGY & ENVIRONMENTAL SCIENCES	Delhi	1652	**47**	294	**45**	0.178	**45**
ASIAN JOURNAL OF RESEARCH IN CHEMISTRY	Delhi	1651	**48**	592	**39**	0.359	**30**
ADVANCES IN PLANT SCIENCES	Uttar Pradesh	1607	**49**	432	**43**	0.269	**37**
JOURNAL OF ENVIRONMENTAL BIOLOGY	Karnataka	1601	**50**	3007	**7**	1.878	**1**

Legend: A= Articles; C = Citations; citations / paper = Citations / Paper

Table 4.9: Subject-wise Rank Order of Top 10 Indian Journals: Based on Articles and Citations				
Journal Name	**Articles**	**RankArticles**	**Citations**	**RankCitations**
1. Agriculture				
INDIAN JOURNAL OF AGRICULTURAL SCIENCES (THE)	2422	**1**	2763	**2**
KARNATAKA JOURNAL OF AGRICULTURAL SCIENCES	1991	**2**	2027	**3**
RESEARCH ON CROPS	1679	**3**	440	**7**
ADVANCES IN PLANT SCIENCES	1601	**4**	431	**9**
ANNALS OF PLANT PROTECTION SCIENCES	1588	**5**	4688	**1**
INTERNATIONAL JOURNAL OF AGRICULTURAL SCIENCES	1495	**6**	487	**6**
INTERNATIONAL JOURNAL OF TROPICAL AGRICULTURE	1353	**7**	113	**10**
INDIAN JOURNAL OF HORTICULTURE	1327	**8**	1540	**4**
CROP RESEARCH	1214	**9**	747	**5**
ASIAN JOURNAL OF HORTICULTURE (THE)	1174	**10**	437	**8**
2. Biological Science				
ENVIRONMENT AND ECOLOGY	4845	**1**	1031	**5**
RESEARCH JOURNAL OF PHARMACEUTICAL, BIOLOGICAL, AND CHEMICAL SCIENCES	4810	**2**	1100	**4**
ECOLOGY ENVIRONMENT & CONSERVATION	2154	**3**	245	**8**
INDIAN JOURNAL OF PATHOLOGY & MICROBIOLOGY	2114	**4**	1243	**3**
BIOSCIENCES, BIOTECHNOLOGY RESEARCH ASIA	1806	**5**	193	**9**
TRENDS IN BIOSCIENCES	1693	**6**	128	**10**
ASIAN JOURNAL OF MICROBIOLOGY BIOTECHNOLOGY & ENVIRONMENTAL SCIENCES	1652	**7**	293	**7**
JOURNAL OF ENVIRONMENTAL BIOLOGY	1601	**8**	3000	**1**
INDIAN JOURNAL OF ENDOCRINOLOGY AND METABOLISM	1508	**9**	888	**6**
INDIAN JOURNAL OF EXPERIMENTAL BIOLOGY	1332	**10**	2004	**2**
3. Biotechnology				
BIOSCIENCES, BIOTECHNOLOGY RESEARCH ASIA	1806	**1**	193	**4**
ASIAN JOURNAL OF MICROBIOLOGY BIOTECHNOLOGY & ENVIRONMENTAL SCIENCES	1652	**2**	293	**2**
INDIAN JOURNAL OF BIOTECHNOLOGY	770	**3**	701	**1**
RESEARCH JOURNAL OF BIOTECHNOLOGY	494	**4**	104	**7**
ADVANCED BIOTECH	489	**5**	76	**8**
JOURNAL OF PLANT BIOCHEMISTRY AND BIOTECHNOLOGY	450	**6**	293	**2**
CURRENT TRENDS IN BIOTECHNOLOGY AND PHARMACY	389	**7**	168	**6**
INTERNATIONAL JOURNAL OF AGRICULTURE, ENVIRONMENT AND BIOTECHNOLOGY	386	**8**	188	**5**
JOURNAL OF MICROBIAL WORLD	310	**9**	47	**10**
INTERNATIONAL JOURNAL OF BIOTECHNOLOGY AND BIOCHEMISTRY	173	**10**	63	**9**
4. Botany				
PLANT ARCHIVES	2325	**1**	677	**5**
ADVANCES IN PLANT SCIENCES	1607	**2**	431	**6**
ANNALS OF PLANT PROTECTION SCIENCES	1588	**3**	4688	**1**
JOURNAL OF ECONOMIC AND TAXONOMIC BOTANY	1244	**4**	426	**7**
JOURNAL OF ESSENTIAL OIL BEARING PLANTS	1150	**5**	374	**9**
INTERNATIONAL JOURNAL OF PLANT SCIENCES	1144	**6**	382	**8**

Journal Name	Articles	RankArticles	Citations	RankCitations
JOURNAL OF MYCOLOGY AND PLANT PATHOLOGY	1140	**7**	696	**4**
INDIAN PHYTOPATHOLOGY	905	**8**	786	**2**
INDIAN JOURNAL OF GENETICS AND PLANT BREEDING (THE)	807	**9**	705	**3**
INDIAN JOURNAL OF PLANT PROTECTION	749	**10**	363	**10**
5. Business and Marketing				
INDIAN JOURNAL OF MARKETING	773	**1**	404	**1**
PACIFIC BUSINESS REVIEW INTERNATIONAL	516	**2**	9	**10**
INDIAN JOURNAL OF COMMERCE & MANAGEMENT STUDIES	345	**3**	25	**6**
INDIAN JOURNAL OF AGRICULTURAL MARKETING	335	**4**	160	**3**
GLOBAL BUSINESS REVIEW	322	**5**	196	**2**
ASIA PACIFIC BUSINESS REVIEW	260	**6**	19	**7**
VISION: THE JOURNAL OF BUSINESS PERSPECTIVE	238	**7**	36	**5**
ABHIGYAN - QUEST FOR EXCELLENCE	229	**8**	15	**9**
MARGIN: THE JOURNAL OF APPLIED ECONOMIC RESEARCH	164	**9**	40	**4**
JOURNAL OF CREATIVE COMMUNICATIONS	160	**10**	18	**8**
6. Chemistry				
ASIAN JOURNAL OF CHEMISTRY	13259	**1**	4610	**1**
RESEARCH JOURNAL OF PHARMACEUTICAL, BIOLOGICAL, AND CHEMICAL SCIENCES	4810	**2**	1100	**6**
INTERNATIONAL JOURNAL OF CHEMTECH RESEARCH	3631	**3**	2270	**2**
JOURNAL OF THE INDIAN CHEMICAL SOCIETY	2547	**4**	1462	**4**
INTERNATIONAL JOURNAL OF CHEMICAL SCIENCES	2442	**5**	767	**8**
ORIENTAL JOURNAL OF CHEMISTRY	2128	**6**	1212	**5**
ASIAN JOURNAL OF RESEARCH IN CHEMISTRY	1651	**7**	554	**9**
INDIAN JOURNAL OF CHEMISTRY SECTION B - ORGANIC INCLUDING MEDICINAL	1489	**8**	1029	**7**
JOURNAL OF CHEMICAL SCIENCE	1281	**9**	243	**10**
E-JOURNAL OF CHEMISTRY	1198	**10**	2010	**3**
7. Computer Science and Technology				
INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN COMPUTER SCIENCE	2586	**1**	72	**5**
INTERNATIONAL JOURNAL ON COMPUTER SCIENCE AND ENGINEERING	1501	**2**	284	**1**
INTERNATIONAL JOURNAL OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY	539	**3**	138	**4**
INTERNATIONAL JOURNAL OF COMPUTER NETWORKS & COMMUNICATIONS	523	**4**	201	**2**
INDIAN JOURNAL OF COMPUTER SCIENCE AND ENGINEERING	458	**5**	51	**6**
ORIENTAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY	364	**6**	28	**7**
INTERNATIONAL JOURNAL OF NETWORK SECURITY & ITS APPLICATIONS	363	**7**	147	**3**
INTERNATIONAL JOURNAL OF INFORMATION PROCESSING	323	**8**	9	**9**
INTERNATIONAL JOURNAL OF COMPUTER SCIENCE AND APPLICATIONS	230	**9**	28	**7**
INTERNATIONAL JOURNAL OF COMPUTING AND APPLICATIONS	225	**10**	4	**10**

Journal Name	Articles	RankArticles	Citations	RankCitations
8. Earth and Geological Science				
JOURNAL OF GEOLOGICAL SOCIETY OF INDIA	1544	**1**	1718	**1**
JOURNAL OF EARTH SYSTEM SCIENCE	879	**2**	760	**2**
GEOBIOS	570	**3**	183	**3**
INDIAN MINING & ENGINEERING JOURNAL (THE)	378	**4**	31	**10**
JOURNAL OF MINES METALS & FUELS	368	**5**	63	**8**
JOURNAL OF APPLIED GEOCHEMISTRY	342	**6**	87	**5**
GEOGRAPHICAL REVIEW OF INDIA	330	**7**	38	**9**
INDIAN GEOTECHNICAL JOURNAL	282	**8**	80	**6**
INTERNATIONAL JOURNAL OF GEOMATICS AND GEOSCIENCES	278	**9**	69	**7**
JOURNAL OF INDIAN GEOPHYSICAL UNION (THE)	249	**10**	116	**4**
9. Economics				
INDIAN JOURNAL OF MARKETING	773	**1**	404	**2**
ASIAN JOURNAL OF RESEARCH IN BANKING AND FINANCE	533	**2**	19	**10**
AGRICULTURAL ECONOMICS RESEARCH REVIEW	471	**3**	691	**1**
INDIAN JOURNAL OF LABOUR ECONOMICS	402	**4**	174	**4**
INDIAN JOURNAL OF ECONOMICS (THE)	349	**5**	22	**9**
INDIAN JOURNAL OF AGRICULTURAL ECONOMICS	343	**6**	360	**3**
INDIAN JOURNAL OF AGRICULTURAL MARKETING	335	**7**	160	**5**
STATISTICAL MODELLING	232	**8**	51	**7**
PROGRESS IN DEVELOPMENT STUDIES	218	**9**	60	**6**
JOURNAL OF INCOME & WEALTH (THE)	188	**10**	40	**8**
10. Education				
JOURNAL OF INTERACADEMICIA	1039	**1**	104	**3**
JK SCIENCE: JOURNAL OF MEDICAL EDUCATION & RESEARCH	650	**2**	257	**2**
INTERNATIONAL JOURNAL OF NURSING EDUCATION	596	**3**	10	**9**
INDIAN JOURNAL OF PHARMACEUTICAL EDUCATION & RESEARCH	531	**4**	634	**1**
INDIAN JOURNAL OF TECHNICAL EDUCATION (THE)	403	**5**	39	**5**
INDIAN JOURNAL OF PSYCHOMETRY & EDUCATION	338	**6**	20	**7**
INTERNATIONAL JOURNAL OF EDUCATIONAL SCIENCES	336	**7**	51	**4**
INDIAN JOURNAL OF TRAINING & DEVELOPMENT	280	**8**	33	**6**
ASIAN JOURNAL OF PSYCHOLOGY & EDUCATION (THE)	272	**9**	5	**10**
PHYSICS EDUCATION	229	**10**	20	**7**
11. Engineering Science and Technology				
INTERNATIONAL JOURNAL OF CHEMTECH RESEARCH	3631	**1**	2270	**1**
INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE AND TECHNOLOGY	2900	**2**	524	**2**
INTERNATIONAL JOURNAL ON COMPUTER SCIENCE AND ENGINEERING	1501	**3**	284	**4**
INDIAN JOURNAL OF CHEMICAL TECHNOLOGY	690	**4**	447	**3**
INDIAN JOURNAL OF ENGINEERING & MATERIALS SCIENCES	681	**5**	150	**6**
SADHANA - ACADEMY PROCEEDINGS IN ENGINEERING SCIENCES	666	**6**	94	**8**

Journal Name	Articles	RankArticles	Citations	RankCitations
INTERNATIONAL JOURNAL OF APPLIED ENGINEERING RESEARCH	621	**7**	33	**10**
JOURNAL OF STRUCTURAL ENGINEERING	600	**8**	46	**9**
IETE JOURNAL OF RESEARCH	555	**9**	101	**7**
JOURNAL OF ENVIRONMENTAL SCIENCE & ENGINEERING	548	**10**	275	**5**
12. Environmental Science				
ENVIRONMENT AND ECOLOGY	4845	**1**	1031	**2**
ECOLOGY ENVIRONMENT & CONSERVATION	2154	**2**	245	**9**
ASIAN JOURNAL OF MICROBIOLOGY BIOTECHNOLOGY & ENVIRONMENTAL SCIENCES	1652	**3**	293	**8**
JOURNAL OF ENVIRONMENTAL BIOLOGY	1601	**4**	3000	**1**
NATURE ENVIRONMENT & POLLUTION TECHNOLOGY	1386	**5**	549	**3**
POLLUTION RESEARCH	1280	**6**	378	**6**
INDIAN JOURNAL OF ENVIRONMENTAL PROTECTION	1223	**7**	457	**5**
JOURNAL OF HUMAN ECOLOGY	994	**8**	530	**4**
JOURNAL OF ECOBIOLOGY	886	**9**	131	**10**
INTERNATIONAL JOURNAL OF ENVIRONMENTAL SCIENCES	885	**10**	368	**7**
13. General Science & Technology				
CURRENT SCIENCE	6221	**1**	6525	**1**
INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY	3566	**2**	2316	**2**
INTERNATIONAL JOURNAL OF CURRENT RESEARCH & REVIEW	1760	**3**	83	**9**
JOURNAL OF SCIENTIFIC & INDUSTRIAL RESEARCH	1297	**4**	741	**3**
DEFENCE SCIENCE JOURNAL	793	**5**	205	**6**
NATIONAL ACADEMY SCIENCE LETTERS	709	**6**	269	**4**
BIONANO FRONTIER	582	**7**	73	**10**
PROCEEDINGS OF THE INDIAN NATIONAL SCIENCES ACADEMY - PART A: PHYSICAL SCIENCES	531	**8**	104	**7**
PANTNAGAR JOURNAL OF RESEARCH	481	**9**	90	**8**
JOURNAL OF INTELLECTUAL PROPERTY RIGHTS	418	**10**	224	**5**
14. Health Science				
JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH	5429	**1**	1137	**10**
INDIAN JOURNAL OF MEDICAL RESEARCH (THE)	2609	**2**	4444	**1**
INDIAN JOURNAL OF PEDIATRICS (THE)	2578	**3**	2050	**3**
INDIAN PEDIATRICS	2521	**4**	2477	**2**
NEUROLOGY INDIA	2164	**5**	1279	**8**
JOURNAL OF ASSOCIATION OF PHYSICIANS OF INDIA	2118	**6**	1902	**4**
INDIAN JOURNAL OF PATHOLOGY & MICROBIOLOGY	2114	**7**	1243	**9**
ASIAN JOURNAL OF PHARMACEUTICAL AND CLINICAL RESEARCH	2077	**8**	1689	**5**
INDIAN JOURNAL OF OPHTHALMOLOGY	2029	**9**	1375	**7**
INDIAN JOURNAL OF DERMATOLOGY, VENEREOLOGY & LEPROLOGY	1913	**10**	1525	**6**
15. Library and Information Science				
SRELS JOURNAL OF INFORMATION MANAGEMENT	462	**1**	268	**3**
DESIDOC JOURNAL OF LIBRARY & INFORMATION TECHNOLOGY	422	**2**	343	**2**

Journal Name	Articles	RankArticles	Citations	RankCitations
ANNALS OF LIBRARY AND INFORMATION STUDIES	337	**3**	605	**1**
PEARL: JOURNAL OF LIBRARY & INFORMATION SCIENCE	332	**4**	57	**8**
INTERNATIONAL JOURNAL OF INFORMATION PROCESSING	323	**5**	9	**10**
INDIAN JOURNAL OF INFORMATION, LIBRARY & SOCIETY	228	**6**	14	**9**
LIBRARY HERALD	225	**7**	70	**4**
LIBRARY PROGRESS (INTERNATIONAL)	219	**8**	59	**7**
IASLIC BULLETIN	209	**9**	68	**5**
COLLNET JOURNAL OF SCIENTOMETRICS AND INFORMATION MANAGEMENT	176	**10**	67	**6**
16. Management				
ASIAN JOURNAL OF RESEARCH IN BUSINESS ECONOMICS AND MANAGEMENT	1124	**1**	12	**7**
PACIFIC BUSINESS REVIEW INTERNATIONAL	516	**2**	9	**9**
PRODUCTIVITY	381	**3**	26	**4**
INDIAN JOURNAL OF INDUSTRIAL RELATIONS	373	**4**	109	**1**
INDIAN JOURNAL OF COMMERCE & MANAGEMENT STUDIES	345	**5**	25	**5**
JOURNAL OF HEALTH MANAGEMENT	311	**6**	78	**2**
ASIAN JOURNAL OF MANAGEMENT	284	**7**	2	**10**
JOURNAL OF INDIAN MANAGEMENT & STRATEGY 8M (THE)	283	**8**	12	**7**
MANAGEMENT AND LABOUR STUDIES	267	**9**	50	**3**
ASIA PACIFIC BUSINESS REVIEW	260	**10**	19	**6**
17. Material Science				
BULLETIN OF MATERIALS SCIENCE	1671	**1**	518	**1**
INDIAN JOURNAL OF ENGINEERING & MATERIALS SCIENCES	681	**2**	150	**2**
JOURNAL OF POLYMER MATERIALS	425	**3**	133	**3**
INDIAN MINING & ENGINEERING JOURNAL (THE)	378	**4**	31	**7**
JOURNAL OF MINES METALS & FUELS	368	**5**	63	**4**
JOURNAL OF METALLURGY AND MATERIALS SCIENCE	274	**6**	32	**6**
TRENDS IN BIOMATERIALS & ARTIFICIAL ORGANS	162	**7**	63	**4**
INTERNATIONAL JOURNAL OF MATERIALS SCIENCES	128	**8**	9	**9**
INDIAN MINERALOGIST (THE)	90	**9**	24	**8**
JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): SERIES D – METALLURGICAL, MATERIALS AND MINING ENGINEERING	66	**10**	2	**10**
18. Mathematics				
FAR EAST JOURNAL OF MATHEMATICAL SCIENCES (FJMS)	2066	**1**	628	**1**
JOURNAL OF INFORMATION AND OPTIMIZATION SCIENCES	575	**2**	49	**8**
BULLETIN OF CALCUTTA MATHEMATICAL SOCIETY	526	**3**	57	**6**
JOURNAL OF INDIAN ACADEMY OF MATHEMATICS (THE)	488	**4**	70	**4**
PROCEEDINGS OF THE INDIAN ACADEMY OF SCIENCES: MATHEMATICAL SCIENCES	461	**5**	71	**3**
INDIAN JOURNAL OF PURE & APPLIED MATHEMATICS	408	**6**	51	**7**
BULLETIN OF PURE AND APPLIED SCIENCES SEC. E - MATHEMATICS & STATISTICS	333	**7**	70	**4**
SANKHYA: THE INDIAN JOURNAL OF STATISTICS	320	**8**	32	**9**
INTERNATIONAL JOURNAL OF MATHEMATICAL SCIENCES	315	**9**	16	**10**
OPSEARCH	307	**10**	78	**2**

Journal Name	Articles	RankArticles	Citations	RankCitations
19. Pharmacology and Pharmaceutical Science				
JOURNAL OF CHEMICAL AND PHARMACEUTICAL RESEARCH	7500	**1**	5151	**2**
INTERNATIONAL JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES	5585	**2**	6475	**1**
RESEARCH JOURNAL OF PHARMACEUTICAL, BIOLOGICAL, AND CHEMICAL SCIENCES	4810	**3**	1100	**8**
JOURNAL OF PHARMACY RESEARCH	4404	**4**	2478	**5**
INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES: REVIEW AND RESEARCH	2802	**5**	1158	**7**
RESEARCH JOURNAL OF PHARMACY AND TECHNOLOGY	2129	**6**	636	**10**
ASIAN JOURNAL OF PHARMACEUTICAL & CLINICAL RESEARCH	2077	**7**	1689	**6**
INTERNATIONAL JOURNAL OF PHARMTECH RESEARCH	2019	**8**	3041	**4**
INDIAN JOURNAL OF ANAESTHESIA	1738	**9**	859	**9**
INDIAN JOURNAL OF PHARMACEUTICAL SCIENCES	1476	**10**	4837	**3**
20. Physics				
PRAMANA- JOURNAL OF PHYSICS	2013	**1**	372	**4**
INDIAN JOURNAL OF PHYSICS	1591	**2**	2262	**1**
INDIAN JOURNAL OF PURE & APPLIED PHYSICS	1331	**3**	956	**2**
INDIAN JOURNAL OF RADIOLOGY AND IMAGING (THE)	858	**4**	314	**5**
INDIAN JOURNAL OF BIOCHEMISTRY AND BIOPHYSICS	569	**5**	445	**3**
INDIAN JOURNAL OF RADIO & SPACE PHYSICS	450	**6**	220	**6**
PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, INDIA, SECTION A - PHYSICAL SCIENCES	444	**7**	76	**8**
JOURNAL OF MEDICAL PHYSICS	335	**8**	125	**7**
JOURNAL OF OPTICS	316	**9**	30	**10**
INDIAN JOURNAL OF THEORETICAL PHYSICS	257	**10**	46	**9**
21. Psychology				
INDIAN JOURNAL OF PSYCHIATRY	927	**1**	1513	**1**
DELHI PSYCHIATRY JOURNAL	618	**2**	96	**4**
INDIAN JOURNAL OF PSYCHOLOGICAL MEDICINE	572	**3**	238	**2**
PSYCHOLOGICAL STUDIES	503	**4**	133	**3**
INDIAN JOURNAL OF PSYCHOMETRY & EDUCATION	338	**5**	20	**8**
ASIAN JOURNAL OF PSYCHOLOGY & EDUCATION (THE)	272	**6**	5	**10**
INDUSTRIAL PSYCHIATRY JOURNAL	255	**7**	76	**5**
INDIAN PSYCHOLOGICAL REVIEW	212	**8**	23	**7**
INDIAN JOURNAL OF CLINICAL PSYCHOLOGY	173	**9**	41	**6**
INDIAN JOURNAL OF APPLIED PSYCHOLOGY	128	**10**	9	**9**
22. Social Science				
ECONOMIC AND POLITICAL WEEKLY	4814	**1**	2897	**1**
ASIAN JOURNAL OF RESEARCH IN SOCIAL SCIENCES AND HUMANITIES	1183	**2**	22	**8**
JOURNAL OF SOCIAL SCIENCES	950	**3**	256	**3**
INDIAN JOURNAL OF SOCIAL RESEARCH	689	**4**	19	**9**
INDIAN JOURNAL OF MEDICAL ETHICS	560	**5**	410	**2**
SOUTH ASIAN JOURNAL OF SOCIO-POLITICAL STUDIES	449	**6**	24	**7**
INDIAN JOURNAL OF PREVENTIVE AND SOCIAL MEDICINE	444	**7**	95	**5**

Journal Name	Articles	RankArticles	Citations	RankCitations
JOURNAL OF COMMUNITY GUIDANCE & RESEARCH	433	**8**	30	**6**
MAN IN INDIA	411	**9**	16	**10**
INDIAN JOURNAL OF LABOUR ECONOMICS	402	**10**	174	**4**
23. Statistics				
FAR EAST JOURNAL OF MATHEMATICAL SCIENCES (FJMS)	2066	**1**	628	**1**
JOURNAL OF INFORMATION AND OPTIMIZATION SCIENCES	575	**2**	49	**8**
BULLETIN OF CALCUTTA MATHEMATICAL SOCIETY	526	**3**	57	**6**
JOURNAL OF INDIAN ACADEMY OF MATHEMATICS (THE)	485	**4**	70	**4**
PROCEEDINGS OF THE INDIAN ACADEMY OF SCIENCES: MATHEMATICAL SCIENCES	461	**5**	71	**3**
INDIAN JOURNAL OF PURE & APPLIED MATHEMATICS	408	**6**	51	**7**
BULLETIN OF PURE AND APPLIED SCIENCES SEC. E - MATHEMATICS & STATISTICS	333	**7**	70	**4**
SANKHYA: THE INDIAN JOURNAL OF STATISTICS	320	**8**	32	**9**
INTERNATIONAL JOURNAL OF MATHEMATICAL SCIENCES	315	**9**	16	**10**
OPSEARCH	307	**10**	78	**2**
24. Toxicology				
PESTOLOGY	1055	**1**	599	**1**
JOURNAL OF ECOTOXICOLOGY & ENVIRONMENTAL MONITORING	657	**2**	128	**4**
INDIAN JOURNAL OF FORENSIC MEDICINE & TOXICOLOGY	652	**3**	126	**5**
PESTICIDE RESEARCH JOURNAL	494	**4**	292	**2**
TOXICOLOGY INTERNATIONAL	322	**5**	153	**3**
ADVANCES IN PHARMACOLOGY AND TOXICOLOGY	307	**6**	78	**6**
JOURNAL OF PUNJAB ACADEMY OF FORENSIC MEDICINE & TOXICOLOGY	217	**7**	41	**8**
INTERNATIONAL JOURNAL OF MEDICAL TOXICOLOGY & LEGAL MEDICINE	188	**8**	46	**7**
INDIAN INTERNET JOURNAL OF FORENSIC MEDICINE & TOXICOLOGY	175	**9**	26	**10**
JOURNAL OF THE INDIAN SOCIETY OF TOXICOLOGY	154	**10**	38	**9**
25. Veterinary Science				
INDIAN VETERINARY JOURNAL (THE)	4981	**1**	985	**2**
INDIAN JOURNAL OF ANIMAL SCIENCES (THE)	3080	**2**	2267	**1**
VETERINARY WORLD	1416	**3**	807	**3**
INDIAN JOURNAL OF FIELD VETERINARIANS (THE)	891	**4**	199	**8**
INDIAN JOURNAL OF ANIMAL RESEARCH	811	**5**	263	**6**
INDIAN JOURNAL OF ANIMAL NUTRITION	771	**6**	700	**4**
INDIAN JOURNAL OF POULTRY SCIENCE	728	**7**	394	**5**
INDIAN JOURNAL OF VETERINARY PATHOLOGY	641	**8**	232	**7**
INDIAN JOURNAL OF VETERINARY SURGERY	577	**9**	140	**10**
JOURNAL OF CAMEL PRACTICE AND RESEARCH	474	**10**	199	**8**
26. Zoology				
INDIAN JOURNAL OF ANIMAL SCIENCES (THE)	3108	**1**	2282	**1**
JOURNAL OF EXPERIMENTAL ZOOLOGY INDIA	1202	**2**	381	**4**
INDIAN JOURNAL OF ANIMAL RESEARCH	812	**3**	263	**8**
INDIAN JOURNAL OF ENTOMOLOGY	790	**4**	336	**6**
INDIAN JOURNAL OF ANIMAL NUTRITION	771	**5**	700	**2**

Journal Name	Articles	RankArticles	Citations	RankCitations
JOURNAL OF INSECT SCIENCE	696	**6**	252	**9**
JOURNAL OF ENTOMOLOGICAL RESEARCH	648	**7**	271	**7**
INDIAN JOURNAL OF NEMATOLOGY	589	**8**	359	**5**
INDIAN JOURNAL OF SMALL RUMINANTS (THE)	583	**9**	479	**3**
UTTAR PRADESH JOURNAL OF ZOOLOGY	578	**10**	174	**10**

Table 4.10: Rank Order of 22 Subjects of ICI have less than 10 Indian Journals

SNo	Subjects	No. of Journals
1	Anthropology	8
2	Arts and Humanities	8
3	Dairying, Dairy, Animals and Animals Produce	8
4	Forestry	8
5	Textile	8
6	Domestic Science	7
7	Food and Beverage Science	7
8	Law	7
9	Astronomy, Astrophysics, Space and Geodesy	6
10	History and Philosophy of Science and Knowledge	6
11	Energy and Fuel Science	5
12	Fishery	5
13	Oceanography and Marine Science	5
14	Rural development	5
15	Water	4
16	Meteorology	3
17	Pollution	3
18	Population Studies	3
19	Telecommunication	2
20	Apiculture	1
21	Nanoscience and Nanotechnology	1
22	Remote Sensing	1

Chapter 5

Institution-Wise Research Performance

This chapter presents institute-wise research performancecovering performance landscape of IITs, NITs, IIMs, ICMR, ICAR, CSIR, DST, DRDO, etc. for understanding their contribution in journals published from India. Further all these institutes have been analyzed on different parameters to see relative contribution.

5.1 Indian Institutes of Technology (IITs)

Indian Institutes of Technology (IITs) are autonomous public funded institutes of higher education, learning and research in India, located across the country. They are founded and governed by the 'Institutes of Technology Act, 1961' which has declared them as "institutions of national importance". The history of the IIT system dates back to 1946 when Sir Jogendra Singh of the Viceroy's Executive Council set up a committee whose task was to consider the creation of Higher Technical Institutions for post-war industrial development in India. The 22-member committee, headed by Nalini Ranjan Sarkar, recommended the establishment of these institutions in various parts of India. As a result of such recommendation, the first 'Indian Institute of Technology (IIT)' was founded in May 1950 at Kharagpur. Subsequent to this, on 15 September 1956, the Parliament of India passed the Indian Institute of Technology (Kharagpur) Act, declaring it as an Institute of National Importance. Pandit Jawaharlal Nehru, first Prime Minister of India, in the first convocation address of IIT Kharagpur in 1956 said.

"***Here in the place of that Hijli Detention Camp, Khargpur stands the fine monument of India, representing India's urges, India's future in the making. This picture seems to me symbolical ofthe changes that are coming to India".***

Latter to 'Indian Institute of Technology (Kharagpur) 1956 Act and in order to establish more numberof similar institutes in the country, "Institutes of Technology Act, 1961" was passed by the Parliament of India. As of now there are 23 IITs in India and their spread is across the country. It has been observed that after establishment of an institute, it takes 12 to 15 years' time to become fully mature and start full scale scholarly output. That is why scholarly performance of relatively new IITs is not comparable to older IITs. Table: 5.1.2. It shows that first 9 IITs have substantial number of articles contribution whereas relatively new/young IITs i.e. serial number 10 to 17 has contributed less than 100 articles. Based on this, we may

conclude that age of an institute is also a factor in influencing its research productivity. All given Tables are self explanatory to elicit data inference.

Table: 5.1.3. It shows top 100 authors research papers productivity in terms of number of papers published in Indian journals, citations received and citations/paper. Accordingly, Singh Gurdeep of IIT (ISM) Dhanbad is at 1st position, 42 articles followed by Viswanathan B of IIT Madras and Atrey MD of IIT Bombay, 30 articles each. In case of citations received Sushil of IIT Delhi is at 1st position or rank, 68 citations credited to his 12 research papers followed by Balasubramanian R of IIT Kanpur, 55 citations received to his 25 research articles; three authours namely Dwivedi BN of IIT Varananasi, Chandra K and Sharma Apurbba Kumar of IIT Roorkee are at 1st rank based citations/paper, 9.400 citations/paper respectively.

Table: 5.1.4. This table shows IIT wise number of authors published their research in Indian journals. Accordingly, IIT Delhi is at 1st position, 27 authors & 27.91% share in top 100 authors' research papers productivity published in Indian journals followed by IIT Roorkee, 19 papers & 18.02% share.

Table: 5.1.5. It shows top Indian journals and ranks them as per number of IITs papers published. Accordingly, *'Current Science'* is at 1st rank by publishing 313 articles & receiving 345 citations from 7 IITs followed by '*Journal of Chemical Science'.*

Table: 5.1.6 &7. It shows journal wise number of IITs contribution and accordingly, ranks journals based on articles published, citations received and citations/paper. Based on this, '*Current Science'* is at 1st rank in terms of number of IITs and research papers published. As per number of citations received and citations/paper '*Global Journal of Flexible Systems Management*' is at 1st position/rank, 142 citations to its 26 articles. In case of citations/paper, it has 2.536 score which is comparably good.

Table: 5.1.8. It provides subject wise contribution of number of IITs and rank subjects as per number of IITs, articles, citations and citations/paper. Accordingly, '*General Science and Technology'* as a subject has contribution from 17 IITs, therefore, it has at rank 1st in terms of number of IITs, followed by *'Engineering Science and Technology',* 16 IITs contribution. On the other hand, *'Engineering Science and Technology'* as a subject is at 1st position in terms of number of articles published in and it is followed by *'Chemistry'* subject, 765 articles. According to citations/paper, *'History of Philosophy of Science and Knowledge'* as a subject holds 1st position by scoring 1.361 citations / paper relatively.

Table: 5.1.9. Lists the names of five IITs which are relatively new and has not shown any publication in Indian journals. In fact any academic institution or university needs 12 to 15 years gestation period to grow, mature and emanate comparable scholarly publications. These IITs are – IIT Bhilai, IIT Goa, IIT Jammu, IIT Palakad, and IIT Tirupati.

Table 5.1.1: Chronological List of Indian Institutes of Technology (IITs)				
S.No.	**IIT**	**City**	**State**	**Estd. Year**
1	Indian Institute of Technology (IIT)	Kharagpur	West Bengal	1951
2	Indian Institute of Technology (IIT)	Mumbai	Maharashtra	1958
3	Indian Institute of Technology (IIT)	Chennai	Tamil Nadu	1959
4	Indian Institute of Technology (IIT)	Kanpur	Uttar Pradesh	1959
5	Indian Institute of Technology (IIT)	Delhi	Delhi	1961
6	Indian Institute of Technology (IIT)	Guwahati	Assam	1994
7	Indian Institute of Technology (IIT)	Roorkee	Uttrakhand	2001
8	Indian Institute of Technology (IIT)	Bhubaneswar	Oddisa	2008
9	Indian Institute of Technology (IIT)	Hyderabad	Telangana	2008
10	Indian Institute of Technology (IIT)	Jodhpur	Rajasthan	2008
11	Indian Institute of Technology (IIT)	Patna	Bihar	2008
12	Indian Institute of Technology (IIT)	Ropar	Punjab	2008
13	Indian Institute of Technology (IIT)	Gandhi Nagar	Gujarat	2009
14	Indian Institute of Technology (IIT)	Indore	Madhya Pradesh	2009
15	Indian Institute of Technology (IIT)	Mandi	Himachal Pradesh	2009
16	Indian Institute of Technology (IIT)	Varanasi	Uttar Pradesh	2012
17	Indian Institute of Technology (IIT)	Jammu	J&K	2015
18	Indian Institute of Technology (IIT)	Palakkad	Kerala	2015
19	Indian Institute of Technology (IIT)	Tirupati	Tamil Nadu	2015
20	Indian Institute of Technology (IIT)	Bhilai	Chhatisgarh	2016
21	Indian Institute of Technology (IIT)	Dharwad	Karnataka	2016
22	Indian Institute of Technology (IIT)	Goa	Goa	2016
23	Indian Institute of Technology (Indian School of Mines) (IIT-ISM)	Dhanbad	Jharkhand	2016

Table 5.1.2: Rank Order of Research Productivity of Indian Institutes of Technology based on Articles, Citations and Citations/Paper							
SN	**Institute Name**	**Article**	**Rank A**	**Citation**	**Rank C**	**C/P**	**Rank C/P**
1	IIT Kharagpur	1146	**1**	581	**2**	0.507	**3**
2	IIT Delhi	1111	**2**	816	**1**	0.734	**1**
3	IIT Roorkee	1084	**3**	481	**3**	0.444	**5**
4	IIT Madras	828	**4**	249	**5**	0.301	**10**
5	IIT Bombay	782	**5**	349	**4**	0.446	**4**
6	IIT Kanpur	579	**6**	190	**7**	0.328	**9**
7	IIT Varanasi	424	**7**	217	**6**	0.512	**2**
8	IITISM Dhanbad	410	**8**	136	**9**	0.332	**8**
9	IIT Guwahati	351	**9**	150	**8**	0.427	**6**
10	IIT Hyderabad	61	**10**	6	**11**	0.098	**15**
11	IIT Bhubaneswar	29	**11**	12	**10**	0.414	**7**
12	IIT Patna	17	**12**	2	**14**	0.118	**14**
13	IIT Gandhinagar	16	**13**	4	**12**	0.250	**11**
14	IIT Indore	16	**13**	3	**13**	0.188	**12**
15	IIT Ropar	12	**15**	2	**14**	0.167	**13**
16	IIT Mandi	5	**16**	0	**16**	0.000	**16**
17	IIT Jodhpur	5	**16**	0	**16**	0.000	**16**

Legend: A = Articles; C = Citations; C/P= Citation/Paper

Table 5.1.3: Rank Order of Top 100 Authors of IITs: Based on Number of Articles, Citations and Citations/Paper								
SN	**Authors Name**	**Institute Name**	**Article**	**Rank A**	**Citation**	**Rank C**	**C/P**	**Rank C/P**
1	Singh Gurdeep	IITISM Dhanbad	42	**1**	15	**17**	0.405	**94**
2	Viswanathan B	IIT Madras	30	**2**	11	**26**	0.867	**86**
3	Atrey M D	IIT Bombay	30	**2**	4	**55**	1.833	**72**
4	Kumar Pradeep	IIT Roorkee	28	**4**	20	**9**	0.321	**97**
5	Kumar Praveen	IIT Roorkee	28	**4**	4	**55**	1.964	**69**
6	Rao B N	IIT Madras	26	**6**	3	**65**	2.500	**63**
7	Balasubramaniam R	IIT Kanpur	25	**7**	55	**2**	0.080	**100**
8	Singh Bhim	IIT Delhi	25	**7**	9	**32**	1.280	**77**
9	Suar Damodar	IIT Kharagpur	23	**9**	15	**17**	0.739	**87**
10	Yadav Surendra S	IIT Delhi	23	**9**	10	**28**	1.217	**80**
11	Dodagoudar G R	IIT Madras	23	**9**	9	**32**	1.391	**76**
12	Vasudevan Padma	IIT Delhi	22	**12**	20	**9**	0.409	**93**
13	Das A	IIT Delhi	22	**12**	16	**14**	0.636	**89**
14	Garg R D	IIT Roorkee	22	**12**	13	**22**	1.000	**84**
15	Balasubramaniam Krishnan	IIT Madras	22	**12**	2	**77**	3.500	**56**
16	Kothari V K	IIT Delhi	20	**16**	13	**22**	1.100	**82**
17	Pradhan S C	IIT Kharagpur	20	**16**	9	**32**	1.600	**73**
18	Menon Devdas	IIT Madras	20	**16**	3	**65**	3.250	**58**
19	Sharma Satyawati	IIT Delhi	19	**19**	25	**8**	0.421	**92**
20	Gupta Deepti	IIT Delhi	19	**19**	16	**14**	0.737	**88**
21	Jain P K	IIT Delhi	18	**21**	7	**40**	2.222	**66**
22	Rao G Appa	IIT Madras	18	**21**	2	**77**	4.278	**46**
23	Behera B K	IIT Delhi	17	**23**	11	**26**	1.529	**74**
24	Goyal Arun	IIT Guwahati	17	**23**	4	**55**	3.235	**59**
25	Ghosh A K	IIT Kanpur	17	**23**	2	**77**	4.529	**43**
26	Deshmukh S G	IIT Delhi	16	**26**	12	**24**	1.500	**75**
27	Naik S N	IIT Delhi	15	**27**	30	**5**	0.333	**96**
28	Mohanty U C	IIT Delhi	15	**27**	15	**17**	1.133	**81**
29	Jothiprakash V	IIT Bombay	15	**27**	10	**28**	1.867	**71**
30	Kumar Vinod	IIT Roorkee	15	**27**	7	**40**	2.667	**62**
31	Kumar M Jagadesh	IIT Delhi	15	**27**	4	**55**	3.667	**52**
32	Paul Biswajit	IITISM Dhanbad	15	**27**	3	**65**	4.333	**45**

SN	Authors Name	Institute Name	Article	Rank A	Citation	Rank C	C/P	Rank C/P
33	Prasad A Meher	IIT Madras	15	**27**	2	**77**	5.133	**36**
34	Kotha Sambasivarao	IIT Bombay	15	**27**	0	**94**	6.267	**24**
35	Mitra Analava	IIT Kharagpur	14	**35**	29	**6**	0.429	**91**
36	Gupta Anil K	IIT Kharagpur	14	**35**	10	**28**	2.000	**68**
37	Chakrapani G J	IIT Roorkee	13	**37**	17	**13**	1.000	**84**
38	Jain Madhu	IIT Roorkee	13	**37**	9	**32**	2.462	**64**
39	Sengupta Amlan K	IIT Madras	13	**37**	5	**47**	3.615	**54**
40	Singh Bhupinder	IIT Roorkee	13	**37**	3	**65**	5.000	**37**
41	Santhanam Manu	IIT Madras	13	**37**	2	**77**	5.923	**27**
42	Garg P K	IIT Roorkee	13	**37**	1	**89**	6.846	**20**
43	Sushil	IIT Delhi	12	**43**	68	**1**	0.083	**99**
44	Goswami T K	IIT Kharagpur	12	**43**	29	**6**	0.500	**90**
45	Roy SC Dutta	IIT Delhi	12	**43**	7	**40**	3.333	**57**
46	Rai Durgesh C	IIT Kanpur	12	**43**	5	**47**	3.917	**50**
47	Koul Shiban K	IIT Delhi	12	**43**	4	**55**	4.583	**41**
48	Singh T N	IIT Bombay	12	**43**	4	**55**	4.583	**41**
49	Ishtiaque S M	IIT Delhi	12	**43**	3	**65**	5.417	**29**
50	Singh S P	IIT Roorkee	12	**43**	3	**65**	5.417	**29**
51	Chandra Satish	IIT Roorkee	12	**43**	1	**89**	7.417	**15**
52	Gupta N K	IIT Delhi	12	**43**	0	**94**	7.833	**9**
53	Banerjee Santanu	IIT Bombay	11	**53**	16	**14**	1.273	**78**
54	Kumar Rajesh	IIT Varanasi	11	**53**	7	**40**	3.636	**53**
55	Behera M D	IIT Kharagpur	11	**53**	6	**45**	4.091	**49**
56	Bhal Kanika T	IIT Delhi	11	**53**	5	**47**	4.273	**47**
57	Shankar Ravi	IIT Delhi	11	**53**	4	**55**	5.000	**37**
58	Srivastava Pradeep	IIT Varanasi	11	**53**	4	**55**	5.000	**37**
59	Rai Arvind Kumar	ISM	11	**53**	3	**65**	5.909	**28**
60	Choudhary RNP	IIT Kharagpur	11	**53**	2	**77**	7.000	**18**
61	Robinson R G	IIT Madras	11	**53**	2	**77**	7.000	**18**
62	Maiti S K	ISM	11	**53**	1	**89**	8.091	**8**
63	Adhikari Basudam	IIT Kharagpur	11	**53**	0	**94**	8.545	**6**
64	Swarup K S	IIT Madras	11	**53**	0	**94**	8.545	**6**
65	Khera Reetika	IIT Delhi	10	**65**	35	**3**	0.300	**98**
66	Saraswati Pratul Kumar	IIT Bombay	10	**65**	31	**4**	0.400	**95**

SN	Authors Name	Institute Name	Article	Rank A	Citation	Rank C	C/P	Rank C/P
67	Bhattacharya D	IIT Kharagpur	10	**65**	18	**11**	1.100	**82**
68	Ravi B	IIT Bombay	10	**65**	14	**21**	2.100	**67**
69	Mamtani Manish A	IIT Kharagpur	10	**65**	12	**24**	2.400	**65**
70	Pal K	IIT Roorkee	10	**65**	10	**28**	2.800	**61**
71	Syamal Arun	IIT Bombay	10	**65**	9	**32**	3.200	**60**
72	Boominathan A	IIT Madras	10	**65**	8	**38**	3.800	**51**
73	Kumar G Suresh	IIT Madras	10	**65**	3	**65**	6.500	**21**
74	Basu Ananjan	IIT Delhi	10	**65**	3	**65**	6.500	**21**
75	Singh Prasoon Kumar	ISM	10	**65**	3	**65**	6.500	**21**
76	Kumar P	IIT Roorkee	10	**65**	2	**77**	7.700	**10**
77	Ganguli Ashok K	IIT Delhi	10	**65**	2	**77**	7.700	**10**
78	Singh Kamlesh	IIT Delhi	10	**65**	2	**77**	7.700	**10**
79	Sundararajan T	IIT Madras	10	**65**	2	**77**	7.700	**10**
80	Mondal Arun	IIT Roorkee	10	**65**	2	**77**	7.700	**10**
81	Padhi Puja	IIT Bombay	10	**65**	1	**89**	8.900	**4**
82	Ganesan V	IIT Madras	10	**65**	1	**89**	8.900	**4**
83	Dwivedi B N	IIT Varanasi	10	**65**	0	**94**	9.400	**1**
84	Chandra K	IIT Roorkee	10	**65**	0	**94**	9.400	**1**
85	Sharma Apurbba Kumar	IIT Roorkee	10	**65**	0	**94**	9.400	**1**
86	Wadhwa S	IIT Delhi	9	**86**	18	**11**	1.222	**79**
87	Mitra A	IIT Kharagpur	9	**86**	15	**17**	1.889	**70**
88	Hanmandlu M	IIT Delhi	9	**86**	9	**32**	3.556	**55**
89	Tripathi S K	IIT Roorkee	9	**86**	8	**38**	4.222	**48**
90	Rangnekar Santosh	IIT Roorkee	9	**86**	7	**40**	4.444	**44**
91	Das S K	IIT Kharagpur	9	**86**	6	**45**	5.000	**37**
92	Goel Sudha	IIT Kharagpur	9	**86**	5	**47**	5.222	**31**
93	Singh Sandeep	IIT Roorkee	9	**86**	5	**47**	5.222	**31**
94	Saikia Arupjyoti	IIT Guwahati	9	**86**	5	**47**	5.222	**31**
95	Mohan S	IIT Madras	9	**86**	5	**47**	5.222	**31**
96	Kaushik S K	IIT Roorkee	9	**86**	5	**47**	5.222	**31**
97	Chattopadhyay R	IIT Delhi	9	**86**	4	**55**	6.111	**25**
98	Velmurugan R	IIT Madras	9	**86**	4	**55**	6.111	**25**
99	Rao Chebrolu P	IIT Bombay	9	**86**	3	**65**	7.222	**16**
100	Mishra H N	IIT Kharagpur	9	**86**	3	**65**	7.222	**16**

Legend: C/P= Citation/Paper

Table 5.1.4: IIT wise Number of Authors in Top 100 Author's of IITs				
IITs Rank	**IITs**	**Authors**	**Number of Authors**	**IIT wise % of Top Authors Share in 100 Authors Papers**
1	IIT Delhi	Basu Ananjan	27	27.91
		Behera B K		
		Bhal Kanika T		
		Chattopadhyay R		
		Das A		
		Deshmukh S G		
		Ganguli Ashok K		
		Gupta Deepti		
		Gupta N K		
		Hanmandlu M		
		Ishtiaque S M		
		Jain P K		
		Khera Reetika		
		Kothari V K		
		Koul Shiban K		
		Kumar M Jagadesh		
		Mohanty U C		
		Naik S N		
		Roy SC Dutta		
		Shankar Ravi		
		Sharma Satyawati		
		Singh Bhim		
		Singh Kamlesh		
		Sushil		
		Vasudevan Padma		
		Wadhwa S		
		Yadav Surendra S		
2	IIT Roorkee	Chakrapani G J	19	18.02
		Chandra K		
		Chandra Satish		
		Garg P K		
		Garg R D		
		Jain Madhu		
		Kaushik S K		
		Kumar P		
		Kumar Pradeep		
		Kumar Praveen		
		Kumar Vinod		
		Mondal Arun		
		Pal K		
		Rangnekar Santosh		
		Sharma Apurbba Kumar		
		Singh Bhupinder		
		Singh S P		
		Singh Sandeep		
		Tripathi S K		

IITs Rank	IITs	Authors	Number of Authors	IIT wise % of Top Authors Share in 100 Authors Papers
3	IIT Madras	Balasubramaniam Krishnan	17	18.37
		Boominathan A		
		Dodagoudar G R		
		Ganesan V		
		Kumar G Suresh		
		Menon Devdas		
		Mohan S		
		Prasad A Meher		
		Rao B N		
		Rao G Appa		
		Robinson R G		
		Santhanam Manu		
		Sengupta Amlan K		
		Sundararajan T		
		Swarup K S		
		Velmurugan R		
		Viswanathan B		
4	IIT Kharagpur	Adhikari Basudam	14	12.15
		Behera M D		
		Bhattacharya D		
		Choudhary RNP		
		Das S K		
		Goel Sudha		
		Goswami T K		
		Gupta Anil K		
		Mamtani Manish A		
		Mishra H N		
		Mitra A		
		Mitra Analava		
		Pradhan S C		
		Suar Damodar		
5	IIT Bombay	Atrey M D	10	9.32
		Banerjee Santanu		
		Jothiprakash V		
		Kotha Sambasivarao		
		Padhi Puja		
		Rao Chebrolu P		
		Ravi B		
		Saraswati Pratul Kumar		
		Singh T N		
		Syamal Arun		
6	IIT Kanpur	Balasubramaniam R	3	3.81
		Ghosh A K		
		Rai Durgesh C		
7	IIT Varanasi	Dwivedi B N	3	2.26
		Kumar Rajesh		
		Srivastava Pradeep		

IITs Rank	IITs	Authors	Number of Authors	IIT wise % of Top Authors Share in 100 Authors Papers
8	ISM	Maiti S K	3	2.26
		Rai Arvind Kumar		
		Singh Prasoon Kumar		
9	IIT Guwahati	Goyal Arun	2	1.83
		Saikia Arupjyoti		
10	IITISM Dhanbad	Paul Biswajit	2	4.02
		Singh Gurdeep		

Table 5.1.5: Journal-wise Publications from IITs': IITs-wise Articles and Citations

SN	Journals	IITs	Article	Citation
1	CURRENT SCIENCE	IIT Bombay	55	54
		IIT Delhi	46	99
		IIT Kanpur	66	48
		IIT Kharagpur	57	46
		IIT Madras	22	11
		IIT Roorkee	53	63
		IITISM Dhanbad	14	24
	Total	**7**	**313**	**345**
2	JOURNAL OF CHEMICAL SCIENCE	IIT Bombay	52	7
		IIT Delhi	23	3
		IIT Guwahati	17	2
		IIT Kanpur	33	6
		IIT Kharagpur	18	2
		IIT Madras	36	6
	Total	**6**	**179**	**26**
3	SADHANA - ACADEMY PROCEEDINGS IN ENGINEERING SCIENCES	IIT Bombay	31	5
		IIT Delhi	22	0
		IIT Kanpur	18	0
		IIT Kharagpur	22	5
		IIT Madras	34	5
		IIT Roorkee	18	7
	Total	**6**	**145**	**22**
4	JOURNAL OF GEOLOGICAL SOCIETY OF INDIA	IIT Bombay	34	48
		IIT Kharagpur	36	69
		IIT Roorkee	32	20
		IITISM Dhanbad	21	11
	Total	**4**	**123**	**148**
5	INDIAN JOURNAL OF FIBRE & TEXTILE RESEARCH	IIT Delhi	114	109
	Total	**1**	**114**	**109**
6	BULLETIN OF MATERIALS SCIENCE	IIT Delhi	14	9
		IIT Kanpur	22	2
		IIT Kharagpur	30	5
		IIT Roorkee	19	5
		IIT Varanasi	20	4
	Total	**5**	**105**	**25**

SN	Journals	IITs	Article	Citation
7	JOURNAL OF STRUCTURAL ENGINEERING	IIT Madras	75	7
		IIT Roorkee	30	1
	Total	**2**	**105**	**8**
8	IETE JOURNAL OF RESEARCH	IIT Delhi	47	24
		IIT Guwahati	15	3
		IIT Kharagpur	15	2
		IIT Roorkee	27	7
	Total	**4**	**104**	**36**
9	INDIAN GEOTECHNICAL JOURNAL	IIT Bombay	22	3
		IIT Kharagpur	16	9
		IIT Madras	40	10
		IIT Roorkee	16	6
	Total	**4**	**94**	**28**
10	JOURNAL OF EARTH SYSTEM SCIENCE	IIT Bombay	35	54
		IIT Kharagpur	26	26
		IIT Roorkee	20	13
	Total	**3**	**81**	**93**
11	INDIAN CONCRETE JOURNAL (THE)	IIT Madras	50	24
		IIT Roorkee	28	11
	Total	**2**	**78**	**35**
12	JOURNAL OF SCIENTIFIC & INDUSTRIAL RESEARCH	IIT Delhi	53	60
		IIT Roorkee	19	8
	Total	**2**	**72**	**68**
13	JOURNAL OF MINES METALS & FUELS	IIT Kharagpur	35	3
		IITISM Dhanbad	36	22
	Total	**2**	**71**	**25**
14	ECONOMIC AND POLITICAL WEEKLY	IIT Bombay	15	14
		IIT Delhi	41	57
		IIT Madras	14	7
	Total	**3**	**70**	**78**
15	DEFENCE SCIENCE JOURNAL	IIT Delhi	27	7
		IIT Madras	19	3
		IIT Roorkee	19	4
	Total	**3**	**65**	**14**
16	INDIAN JOURNAL OF CRYOGENICS	IIT Bombay	36	4
		IIT Kharagpur	28	1
	Total	**2**	**64**	**5**
17	JOURNAL OF AEROSPACE SCIENCES AND TECHNOLOGIES	IIT Kanpur	19	0
		IIT Kharagpur	19	7
		IIT Madras	26	11
	Total	**3**	**64**	**18**
18	PRAMANA- JOURNAL OF PHYSICS	IIT Bombay	21	5
		IIT Kanpur	41	5
	Total	**2**	**62**	**10**
19	GLOBAL JOURNAL OF FLEXIBLE SYSTEMS MANAGEMENT	IIT Delhi	56	142
	Total	**1**	**56**	**142**

SN	Journals	IITs	Article	Citation
20	INDIAN JOURNAL OF CHEMISTRY - SECTION A: INORGANIC, BIO-INORGANIC, PHYSICAL, THEORETICAL & ANALYTICAL	IIT Kanpur	19	5
		IIT Madras	30	11
	Total	**2**	**49**	**16**
21	**INDIAN HIGHWAYS**	IIT Roorkee	48	6
	Total	**1**	**48**	**6**
22	INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE AND TECHNOLOGY	IIT Roorkee	23	0
		IIT Varanasi	23	6
	Total	**2**	**46**	**6**
23	IETE TECHNICAL REVIEW	IIT Delhi	24	9
		IIT Guwahati	15	29
	Total	**2**	**39**	**38**
24	JOURNAL OF FOOD SCIENCE AND TECHNOLOGY	IIT Kharagpur	36	38
	Total	**1**	**36**	**38**
25	ADVANCES IN VIBRATION ENGINEERING	IIT Delhi	19	4
		IIT Madras	16	8
	Total	**2**	**35**	**12**
26	INDIAN JOURNAL OF PHYSICS	IIT Guwahati	17	8
		IIT Kharagpur	18	13
	Total	**2**	**35**	**21**
27	INDIAN CHEMICAL ENGINEER	IIT Delhi	19	1
		IIT Madras	15	4
	Total	**2**	**34**	**5**
28	INDIAN MINING & ENGINEERING JOURNAL (THE)	IITISM Dhanbad	34	6
	Total	**1**	**34**	**6**
29	PROCEEDINGS OF THE INDIAN NATIONAL SCIENCES ACADEMY - PART A: PHYSICAL SCIENCES	IIT Delhi	33	0
	Total	**1**	**33**	**0**
30	INTERNATIONAL JOURNAL OF CHEMICAL SCIENCES	IIT Guwahati	17	1
		IIT Kharagpur	15	0
	Total	**2**	**32**	**1**
31	JOURNAL OF NON-DESTRUCTIVE TESTING & EVALUATION	IIT Madras	28	2
	Total	**1**	**28**	**2**
32	JOURNAL OF THE INDIAN SOCIETY OF REMOTE SENSING	IIT Roorkee	26	22
	Total	**1**	**26**	**22**
33	INDIAN JOURNAL OF HISTORY OF SCIENCE	IIT Kanpur	23	35
	Total	**1**	**23**	**35**
34	INDIAN JOURNAL OF ENVIRONMENTAL PROTECTION	IITISM Dhanbad	21	1
	Total	**1**	**21**	**1**
35	JOURNAL OF AGRICULTURAL ENGINEERING	IIT Kharagpur	20	9
	Total	**1**	**20**	**9**

SN	Journals	IITs	Article	Citation
36	JOURNAL OF THE INDIAN CHEMICAL SOCIETY	IIT Bombay	18	5
	Total	**1**	**18**	**5**
37	HIMALAYAN GEOLOGY	IIT Roorkee	17	6
	Total	**1**	**17**	**6**
38	INTERNATIONAL JOURNAL OF INFORMATION PROCESSING	IIT Roorkee	17	1
	Total	**1**	**17**	**1**
39	JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): CIVIL ENGINEERING DIVISION BOARD	IIT Roorkee	17	6
	Total	**1**	**17**	**6**
40	PSYCHOLOGICAL STUDIES	IIT Kharagpur	17	8
	Total	**1**	**17**	**8**
41	HYDROLOGY JOURNAL	IIT Roorkee	16	3
	Total	**1**	**16**	**3**
42	INDIAN JOURNAL OF CHEMISTRY SECTION B - ORGANIC INCLUDING MEDICINAL	IIT Bombay	16	0
	Total	**1**	**16**	**0**
43	INDIAN JOURNAL OF ENGINEERING & MATERIALS SCIENCES	IIT Madras	16	2
	Total	**1**	**16**	**2**
44	INDIAN JOURNAL OF PURE & APPLIED PHYSICS	IIT Roorkee	16	10
	Total	**1**	**16**	**10**
45	OPSEARCH	IIT Roorkee	16	4
	Total	**1**	**16**	**4**
46	ASIAN JOURNAL OF CHEMISTRY	IIT Delhi	15	8
	Total	**1**	**15**	**8**
47	DIFFERENTIAL EQUATIONS AND DYNAMICAL SYSTEMS	IIT Kanpur	15	6
	Total	**1**	**15**	**6**
48	INDIAN JOURNAL OF CHEMICAL TECHNOLOGY	IIT Roorkee	15	11
	Total	**1**	**15**	**11**
49	INDIAN FOUNDRY JOURNAL	IIT Kharagpur	14	7
	Total	**1**	**14**	**7**
50	JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): ELECTRICAL ENGINEERING DIVISION BOARD	IIT Delhi	14	1
	Total	**1**	**14**	**1**

Table: 5.1.6. Journal-wise Number of IITs Contribution								
SN	Journal	Number of IITs		Articles		Citations		Rank Citation /Paper
		Nos	Rank	Nos	Rank	Nos	Citation /Paper	
1	CURRENT SCIENCE	7	**1**	313	**1**	345	1.102	**6**
2	JOURNAL OF CHEMICAL SCIENCE	6	**2**	179	**2**	26	0.145	**38**
3	SADHANA - ACADEMY PROCEEDINGS IN ENGINEERING SCIENCES	6	**2**	145	**3**	22	0.152	**36**
4	BULLETIN OF MATERIALS SCIENCE	5	**4**	105	**6**	25	0.238	**31**
5	JOURNAL OF GEOLOGICAL SOCIETY OF INDIA	4	**5**	123	**4**	148	1.203	**3**
6	IETE JOURNAL OF RESEARCH	4	**5**	104	**8**	36	0.346	**24**
7	INDIAN GEOTECHNICAL JOURNAL	4	**5**	94	**9**	28	0.298	**27**
8	JOURNAL OF EARTH SYSTEM SCIENCE	3	**8**	81	**10**	93	1.148	**4**
9	ECONOMIC AND POLITICAL WEEKLY	3	**8**	70	**14**	78	1.114	**5**
10	DEFENCE SCIENCE JOURNAL	3	**8**	65	**15**	14	0.215	**32**
11	JOURNAL OF AEROSPACE SCIENCES AND TECHNOLOGIES	3	**8**	64	**16**	18	0.281	**28**
12	JOURNAL OF STRUCTURAL ENGINEERING	2	**12**	105	**6**	8	0.076	**43**
13	INDIAN CONCRETE JOURNAL (THE)	2	**12**	78	**11**	35	0.449	**19**
14	JOURNAL OF SCIENTIFIC & INDUSTRIAL RESEARCH	2	**12**	72	**12**	68	0.944	**10**
15	JOURNAL OF MINES METALS & FUELS	2	**12**	71	**13**	25	0.352	**23**
16	INDIAN JOURNAL OF CRYOGENICS	2	**12**	64	**16**	5	0.078	**42**
17	PRAMANA- JOURNAL OF PHYSICS	2	**12**	62	**18**	10	0.161	**35**
18	INDIAN JOURNAL OF CHEMISTRY - SECTION A: INORGANIC, BIO-INORGANIC, PHYSICAL, THEORETICAL & ANALYTICAL	2	**12**	49	**20**	16	0.327	**26**
19	INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE AND TECHNOLOGY	2	**12**	46	**22**	6	0.130	**39**
20	IETE TECHNICAL REVIEW	2	**12**	39	**23**	38	0.974	**8**
21	JOURNAL OF FOOD SCIENCE AND TECHNOLOGY	2	**12**	36	**24**	38	1.056	**7**
22	ADVANCES IN VIBRATION ENGINEERING	2	**12**	35	**25**	12	0.343	**25**
23	INDIAN JOURNAL OF PHYSICS	2	**12**	35	**25**	21	0.600	**14**
24	INDIAN CHEMICAL ENGINEER	2	**12**	34	**27**	5	0.147	**37**
25	INTERNATIONAL JOURNAL OF CHEMICAL SCIENCES	2	**12**	32	**30**	1	0.031	**48**
26	INDIAN JOURNAL OF FIBRE & TEXTILE RESEARCH	1	**26**	114	**5**	109	0.956	**9**

SN	Journal	Number of IITs		Articles		Citations		Rank Citation/ paper
		Nos	Rank	Nos	Rank	Nos	Citation /paper	
27	GLOBAL JOURNAL OF FLEXIBLE SYSTEMS MANAGEMENT	1	**26**	56	**19**	142	2.536	**1**
28	INDIAN HIGHWAYS	1	**26**	48	**21**	6	0.125	**40**
29	INDIAN MINING & ENGINEERING JOURNAL (THE)	1	**26**	34	**27**	6	0.176	**34**
30	PROCEEDINGS OF THE INDIAN NATIONAL SCIENCES ACADEMY - PART A: PHYSICAL SCIENCES	1	**26**	33	**29**	0	0.000	**49**
31	JOURNAL OF NON-DESTRUCTIVE TESTING & EVALUATION	1	**26**	28	**31**	2	0.071	**44**
32	JOURNAL OF THE INDIAN SOCIETY OF REMOTE SENSING	1	**26**	26	**32**	22	0.846	**11**
33	INDIAN JOURNAL OF HISTORY OF SCIENCE	1	**26**	23	**33**	35	1.522	**2**
34	INDIAN JOURNAL OF ENVIRONMENTAL PROTECTION	1	**26**	21	**34**	1	0.048	**47**
35	JOURNAL OF AGRICULTURAL ENGINEERING	1	**26**	20	**35**	9	0.450	**18**
36	JOURNAL OF THE INDIAN CHEMICAL SOCIETY	1	**26**	18	**36**	5	0.278	**29**
37	HIMALAYAN GEOLOGY	1	**26**	17	**37**	6	0.353	**21**
38	INTERNATIONAL JOURNAL OF INFORMATION PROCESSING	1	**26**	17	**37**	1	0.059	**46**
39	JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): CIVIL ENGINEERING DIVISION BOARD	1	**26**	17	**37**	6	0.353	**21**
40	PSYCHOLOGICAL STUDIES	1	**26**	17	**37**	8	0.471	**17**
41	HYDROLOGY JOURNAL	1	**26**	16	**41**	3	0.188	**33**
42	INDIAN JOURNAL OF CHEMISTRY SECTION B - ORGANIC INCLUDING MEDICINAL	1	**26**	16	**41**	0	0.000	**49**
43	INDIAN JOURNAL OF ENGINEERING & MATERIALS SCIENCES	1	**26**	16	**41**	2	0.125	**40**
44	INDIAN JOURNAL OF PURE & APPLIED PHYSICS	1	**26**	16	**41**	10	0.625	**13**
45	OPSEARCH	1	**26**	16	**41**	4	0.250	**30**
46	ASIAN JOURNAL OF CHEMISTRY	1	**26**	15	**46**	8	0.533	**15**
47	DIFFERENTIAL EQUATIONS AND DYNAMICAL SYSTEMS	1	**26**	15	**46**	6	0.400	**20**
48	INDIAN JOURNAL OF CHEMICAL TECHNOLOGY	1	**26**	15	**46**	11	0.733	**12**
49	INDIAN FOUNDRY JOURNAL	1	**26**	14	**49**	7	0.500	**16**
50	JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): ELECTRICAL ENGINEERING DIVISION BOARD	1	**26**	14	**49**	1	0.071	**44**

Table: 5.1.7: Names & Number of IITs: Subject-wise Contribution, Articles and Citations				
SN	**Subjects**	**IITs**	**Articles**	**Citations**
1	Engineering Science and Technology	IIT Bhubaneswar	13	2
		IIT Bombay	239	49
		IIT Delhi	309	79
		IIT Gandhinagar	4	0
		IIT Guwahati	116	43
		IIT Hyderabad	20	4
		IIT Indore	3	0
		IIT Jodhpur	4	0
		IIT Kanpur	129	10
		IIT Kharagpur	355	84
		IIT Madras	458	99
		IIT Patna	5	0
		IIT Roorkee	460	88
		IIT Ropar	3	0
		IIT Varanasi	126	26
		IITISM Dhanbad	135	30
	Total	**16**	**2379**	**514**
2	Chemistry	IIT Bhubaneswar	1	0
		IIT Bombay	121	23
		IIT Delhi	114	22
		IIT Gandhinagar	1	1
		IIT Guwahati	62	4
		IIT Hyderabad	15	0
		IIT Kanpur	80	11
		IIT Kharagpur	100	18
		IIT Madras	100	22
		IIT Patna	1	0
		IIT Roorkee	61	43
		IIT Ropar	1	0
		IIT Varanasi	66	28
		IITISM Dhanbad	42	14
	Total	**14**	**765**	**186**

SN	Subjects	IITs	Articles	Citations
3	General Science and Technology	IIT Bhubaneswar	3	3
		IIT Bombay	80	59
		IIT Delhi	170	173
		IIT Gandhinagar	4	0
		IIT Guwahati	26	24
		IIT Hyderabad	4	0
		IIT Indore	1	1
		IIT Jodhpur	1	0
		IIT Kanpur	95	53
		IIT Kharagpur	100	70
		IIT Madras	67	31
		IIT Mandi	1	0
		IIT Patna	2	0
		IIT Roorkee	116	81
		IIT Ropar	2	1
		IIT Varanasi	29	10
		IITISM Dhanbad	26	27
	Total	**17**	**727**	**533**
4	Earth and Geological Science	IIT Bhubaneswar	1	1
		IIT Bombay	121	127
		IIT Delhi	23	9
		IIT Gandhinagar	1	0
		IIT Guwahati	13	18
		IIT Hyderabad	8	4
		IIT Kanpur	26	11
		IIT Kharagpur	147	113
		IIT Madras	58	19
		IIT Roorkee	139	65
		IIT Varanasi	41	11
		IITISM Dhanbad	128	48
	Total	**12**	**706**	**426**
5	Physics	IIT Bombay	51	15
		IIT Delhi	36	17
		IIT Gandhinagar	2	1
		IIT Guwahati	35	11
		IIT Hyderabad	5	0
		IIT Indore	3	1
		IIT Kanpur	68	24
		IIT Kharagpur	57	20
		IIT Madras	43	32
		IIT Patna	1	1
		IIT Roorkee	54	19
		IIT Ropar	1	0
		IIT Varanasi	39	36
		IITISM Dhanbad	27	18
	Total	**14**	**422**	**195**

SN	Subjects	IITs	Articles	Citations
6	Material Science	IIT Bombay	18	6
		IIT Delhi	22	13
		IIT Guwahati	6	1
		IIT Hyderabad	3	0
		IIT Indore	1	0
		IIT Kanpur	36	5
		IIT Kharagpur	113	18
		IIT Madras	34	8
		IIT Roorkee	38	8
		IIT Varanasi	58	9
		IITISM Dhanbad	87	30
	Total	**11**	**416**	**98**
7	Environmental Science	IIT Bhubaneswar	2	6
		IIT Bombay	27	7
		IIT Delhi	46	26
		IIT Guwahati	14	8
		IIT Hyderabad	2	0
		IIT Kanpur	12	1
		IIT Kharagpur	80	73
		IIT Madras	17	3
		IIT Roorkee	59	30
		IIT Varanasi	13	1
		IITISM Dhanbad	52	10
	Total	**11**	**324**	**165**
8	Biological Science	IIT Bombay	34	9
		IIT Delhi	56	41
		IIT Guwahati	28	18
		IIT Hyderabad	2	0
		IIT Kanpur	20	5
		IIT Kharagpur	57	75
		IIT Madras	14	5
		IIT Patna	1	1
		IIT Roorkee	49	64
		IIT Varanasi	27	6
		IITISM Dhanbad	35	2
	Total	**11**	**323**	**226**

SN	Subjects	IITs	Articles	Citations
9	Management	IIT Bombay	24	10
		IIT Delhi	112	162
		IIT Guwahati	9	2
		IIT Indore	1	0
		IIT Kanpur	12	3
		IIT Kharagpur	38	21
		IIT Madras	20	5
		IIT Patna	1	0
		IIT Roorkee	42	37
		IIT Ropar	1	0
		IIT Varanasi	3	1
		IITISM Dhanbad	16	0
	Total	**12**	**279**	**241**
10	Social Science	IIT Bhubaneswar	2	0
		IIT Bombay	46	20
		IIT Delhi	75	71
		IIT Gandhinagar	2	0
		IIT Guwahati	29	11
		IIT Hyderabad	2	2
		IIT Indore	1	0
		IIT Kanpur	25	8
		IIT Kharagpur	53	34
		IIT Madras	29	14
		IIT Patna	1	0
		IIT Roorkee	20	6
		IIT Ropar	3	1
		IIT Varanasi	1	0
		IITISM Dhanbad	4	0
	Total	**15**	**293**	**167**
11	Mathematics	IIT Bhubaneswar	1	0
		IIT Bombay	22	1
		IIT Delhi	11	1
		IIT Guwahati	4	1
		IIT Hyderabad	1	0
		IIT Indore	3	1
		IIT Kanpur	44	16
		IIT Kharagpur	28	4
		IIT Madras	22	2
		IIT Mandi	2	0
		IIT Patna	1	0
		IIT Roorkee	46	19
		IIT Varanasi	15	0
		IITISM Dhanbad	8	1
	Total	**14**	**208**	**46**

SN	Subjects	IITs	Articles	Citations
12	Statistics	IIT Bombay	20	1
		IIT Delhi	11	1
		IIT Guwahati	3	0
		IIT Hyderabad	1	0
		IIT Indore	3	1
		IIT Kanpur	42	16
		IIT Kharagpur	28	4
		IIT Madras	20	2
		IIT Mandi	2	0
		IIT Patna	1	0
		IIT Roorkee	46	19
		IIT Varanasi	11	0
		IITISM Dhanbad	8	1
	Total	**13**	**196**	**45**
13	Computer Science and Technology	IIT Bhubaneswar	6	0
		IIT Bombay	9	5
		IIT Delhi	20	2
		IIT Gandhinagar	1	2
		IIT Guwahati	15	5
		IIT Hyderabad	1	0
		IIT Indore	1	0
		IIT Jodhpur	1	0
		IIT Kanpur	4	0
		IIT Kharagpur	25	8
		IIT Madras	9	0
		IIT Patna	2	0
		IIT Roorkee	55	7
		IIT Varanasi	21	4
		IITISM Dhanbad	16	2
	Total	**16**	**186**	**35**
14	Health Science	IIT Bombay	16	4
		IIT Delhi	31	41
		IIT Guwahati	5	1
		IIT Hyderabad	2	0
		IIT Kanpur	20	5
		IIT Kharagpur	42	60
		IIT Madras	28	11
		IIT Mandi	1	0
		IIT Patna	1	0
		IIT Roorkee	11	11
		IIT Varanasi	19	14
		IITISM Dhanbad	1	0
	Total	**12**	**177**	**147**

SN	Subjects	IITs	Articles	Citations
15	Agriculture	IIT Bombay	19	5
		IIT Delhi	20	18
		IIT Guwahati	3	1
		IIT Indore	1	0
		IIT Kanpur	5	2
		IIT Kharagpur	77	19
		IIT Madras	12	2
		IIT Roorkee	28	3
		IIT Varanasi	6	0
		IITISM Dhanbad	2	0
	Total	**10**	**173**	**50**
16	Pharmacology and Pharmaceutical Science	IIT Bombay	10	9
		IIT Delhi	14	3
		IIT Guwahati	18	2
		IIT Hyderabad	2	0
		IIT Kanpur	1	0
		IIT Kharagpur	21	21
		IIT Madras	19	18
		IIT Roorkee	11	3
		IIT Varanasi	58	80
		IITISM Dhanbad	10	2
	Total	**10**	**164**	**138**
17	Textile	IIT Bombay	3	0
		IIT Delhi	126	110
		IIT Kharagpur	1	0
		IIT Roorkee	2	0
		IIT Varanasi	3	2
		IITISM Dhanbad	1	0
	Total	**6**	**136**	**112**
18	Astronomy, Astrophysics, Space and Geodesy	IIT Bombay	20	3
		IIT Delhi	10	0
		IIT Guwahati	3	0
		IIT Kanpur	21	0
		IIT Kharagpur	23	9
		IIT Madras	31	15
		IIT Roorkee	13	4
		IIT Varanasi	13	3
	Total	**8**	**134**	**34**

SN	Subjects	IITs	Articles	Citations
19	Business and Marketing	IIT Bombay	14	2
		IIT Delhi	28	13
		IIT Hyderabad	1	0
		IIT Kanpur	6	0
		IIT Kharagpur	20	12
		IIT Madras	9	1
		IIT Roorkee	25	20
		IIT Ropar	2	1
		IIT Varanasi	1	0
		IITISM Dhanbad	14	2
	Total	**10**	**120**	**51**
20	Economics	IIT Bhubaneswar	2	0
		IIT Bombay	17	2
		IIT Delhi	19	8
		IIT Guwahati	4	2
		IIT Hyderabad	1	0
		IIT Indore	2	0
		IIT Kanpur	16	2
		IIT Kharagpur	19	7
		IIT Madras	15	1
		IIT Roorkee	6	1
		IIT Ropar	3	1
		IITISM Dhanbad	10	2
	Total	**12**	**114**	**26**
21	Biotechnology	IIT Bombay	4	1
		IIT Delhi	20	9
		IIT Guwahati	21	5
		IIT Hyderabad	1	0
		IIT Kanpur	2	0
		IIT Kharagpur	28	15
		IIT Madras	3	2
		IIT Roorkee	13	5
		IIT Varanasi	10	6
	Total	**9**	**102**	**43**
22	Energy and Fuel Science	IIT Bombay	3	0
		IIT Delhi	3	0
		IIT Hyderabad	1	0
		IIT Kanpur	1	0
		IIT Kharagpur	38	3
		IIT Madras	6	0
		IIT Roorkee	3	0
		IIT Varanasi	8	1
		IITISM Dhanbad	39	22
	Total	**9**	**102**	**26**

SN	Subjects	IITs	Articles	Citations
23	Library and Information Science	IIT Bhubaneswar	2	0
		IIT Bombay	7	6
		IIT Delhi	13	28
		IIT Guwahati	4	1
		IIT Kanpur	4	2
		IIT Kharagpur	13	4
		IIT Madras	4	0
		IIT Patna	1	0
		IIT Roorkee	28	4
		IIT Ropar	1	0
		IIT Varanasi	9	1
		IITISM Dhanbad	4	0
	Total	**12**	**90**	**46**
24	Education	IIT Bombay	10	1
		IIT Delhi	18	8
		IIT Gandhinagar	1	0
		IIT Kanpur	4	0
		IIT Kharagpur	14	15
		IIT Madras	15	4
		IIT Roorkee	10	2
		IIT Varanasi	2	0
		IITISM Dhanbad	3	0
	Total	**9**	**77**	**30**
25	Psychology	IIT Bombay	10	5
		IIT Delhi	17	4
		IIT Gandhinagar	1	0
		IIT Guwahati	6	4
		IIT Hyderabad	2	0
		IIT Kanpur	11	3
		IIT Kharagpur	22	11
		IIT Madras	1	0
		IIT Roorkee	1	0
	Total	**9**	**71**	**27**
26	Food and Beverage Science	IIT Delhi	8	11
		IIT Hyderabad	1	0
		IIT Kharagpur	51	46
		IIT Roorkee	2	2
		IIT Varanasi	4	6
	Total	**5**	**66**	**65**

SN	Subjects	IITs	Articles	Citations
27	Oceanography and Marine Science	IIT Bombay	6	1
		IIT Delhi	9	1
		IIT Guwahati	5	0
		IIT Indore	1	0
		IIT Kanpur	2	0
		IIT Kharagpur	13	3
		IIT Madras	14	6
		IIT Patna	1	0
		IIT Roorkee	6	0
		IIT Varanasi	2	0
		IITISM Dhanbad	5	1
	Total	**11**	**64**	**12**
28	Remote Sensing	IIT Bombay	9	2
		IIT Delhi	1	1
		IIT Guwahati	2	0
		IIT Kanpur	10	7
		IIT Kharagpur	10	6
		IIT Madras	1	1
		IIT Roorkee	26	22
		IIT Varanasi	1	0
		IITISM Dhanbad	1	0
	Total	**9**	**61**	**39**
29	**Water**	IIT Bombay	13	0
		IIT Delhi	5	1
		IIT Guwahati	6	0
		IIT Kharagpur	5	0
		IIT Madras	3	0
		IIT Roorkee	24	5
		IIT Varanasi	2	0
	Total	**7**	**58**	**6**
30	History and Philosophy of Science and Knowledge	IIT Bombay	5	2
		IIT Delhi	2	6
		IIT Kanpur	23	35
		IIT Kharagpur	3	6
		IIT Madras	1	0
		IIT Varanasi	2	0
	Total	**6**	**36**	**49**
31	Botany	IIT Delhi	6	6
		IIT Guwahati	1	0
		IIT Kharagpur	12	3
		IIT Madras	3	3
		IIT Roorkee	6	1
		IIT Varanasi	3	3
		IITISM Dhanbad	2	0
	Total	**7**	**33**	**16**

SN	Subjects	IITs	Articles	Citations
32	Arts and Humanities	IIT Bombay	3	1
		IIT Delhi	3	0
		IIT Guwahati	2	0
		IIT Hyderabad	1	0
		IIT Kanpur	2	0
		IIT Kharagpur	7	0
		IIT Madras	2	0
		IIT Patna	3	0
		IIT Roorkee	4	0
		IITISM Dhanbad	1	0
	Total	**10**	**28**	**1**
33	Telecommunication	IIT Bhubaneswar	2	0
		IIT Delhi	8	0
		IIT Jodhpur	1	0
		IIT Kanpur	1	0
		IIT Kharagpur	4	0
		IIT Madras	1	0
		IIT Roorkee	3	0
		IIT Varanasi	2	0
		IITISM Dhanbad	5	0
	Total	**9**	**27**	**0**
34	Others	IIT Bombay	2	0
		IIT Delhi	7	6
		IIT Guwahati	2	2
		IIT Kharagpur	10	15
		IIT Roorkee	3	3
	Total	**5**	**24**	**26**
35	Meteorology	IIT Bombay	1	0
		IIT Delhi	9	4
		IIT Kharagpur	7	0
		IIT Madras	2	2
		IIT Roorkee	4	2
	Total	**5**	**23**	**8**
36	Rural development	IIT Bhubaneswar	1	0
		IIT Bombay	1	1
		IIT Delhi	3	1
		IIT Guwahati	1	0
		IIT Kanpur	1	0
		IIT Kharagpur	8	12
		IIT Madras	2	0
		IIT Roorkee	2	0
		IITISM Dhanbad	1	0
	Total	**9**	**20**	**14**

SN	Subjects	IITs	Articles	Citations
37	Anthropology	IIT Bombay	1	0
		IIT Kanpur	8	3
		IIT Kharagpur	5	1
		IIT Madras	1	0
		IIT Mandi	1	0
	Total	**5**	**16**	**4**
38	Pollution	IIT Delhi	2	0
		IIT Kanpur	1	0
		IIT Kharagpur	4	1
		IIT Madras	1	0
		IIT Roorkee	3	0
		IIT Varanasi	1	0
		IITISM Dhanbad	3	0
	Total	**7**	**15**	**1**
39	Domestic Science	IIT Delhi	4	2
		IIT Hyderabad	1	0
		IIT Kharagpur	3	4
		IIT Varanasi	2	0
	Total	**4**	**10**	**6**
40	Forestry	IIT Delhi	1	0
		IIT Kharagpur	3	0
		IIT Roorkee	1	0
		IITISM Dhanbad	2	0
	Total	**4**	**7**	**0**
41	Zoology	IIT Bombay	1	0
		IIT Delhi	2	0
		IIT Guwahati	2	0
		IIT Kharagpur	2	0
	Total	**4**	**7**	**0**
42	Dairying, Dairy, Animals and Animals Produce	IIT Delhi	1	0
		IIT Kharagpur	5	1
	Total	**2**	**6**	**1**
43	Population Studies	IIT Bombay	2	1
		IIT Delhi	2	0
		IIT Guwahati	1	0
		IIT Kanpur	1	0
	Total	**4**	**6**	**1**
44	Law	IIT Kharagpur	1	1
		IIT Madras	2	0
		IIT Roorkee	2	1
		IIT Ropar	1	0
	Total	**4**	**6**	**2**
45	Fishery	IIT Delhi	1	0
		IIT Kharagpur	4	0
	Total	**2**	**5**	**0**

SN	Subjects	IITs	Articles	Citations
46	Toxicology	IIT Bombay	1	0
		IIT Delhi	1	1
		IIT Kharagpur	1	0
		IIT Roorkee	1	0
		IITISM Dhanbad	1	0
	Total	**5**	**5**	**1**
47	Veterinary Science	IIT Delhi	1	0
		IIT Guwahati	1	0
		IIT Kharagpur	2	0
	Total	**3**	**4**	**0**
48	Nanoscience and Nanotechnology	IIT Kharagpur	1	0
	Total	**1**	**1**	**0**

Table: 5.1.8: Subject-wise Number of IITs Contribution								
SN	Subjects	Number of IITs		Articles		Citations		Rank Citation /Paper
		Nos	Rank	Nos	Rank	Nos	Citation /Paper	
1	General Science and Technology	17	1	727	3	533	0.733	8
2	Engineering Science and Technology	16	2	2379	1	514	0.216	34
3	Computer Science and Technology	16	2	186	13	35	0.188	36
4	Social Science	15	4	293	9	167	0.570	14
5	Chemistry	14	5	765	2	186	0.243	29
6	Physics	14	5	422	5	195	0.462	18
7	Mathematics	14	5	208	11	46	0.221	33
8	Statistics	13	8	196	12	45	0.230	31
9	Earth and Geological Science	12	9	706	4	426	0.603	12
10	Management	12	9	279	10	241	0.864	4
11	Health Science	12	9	177	14	147	0.831	6
12	Economics	12	9	114	20	26	0.228	32
13	Library and Information Science	12	9	90	23	46	0.511	15
14	Material Science	11	14	416	6	98	0.236	30
15	Environmental Science	11	14	324	7	165	0.509	16
16	Biological Science	11	14	323	8	226	0.700	10
17	Oceanography and Marine Science	11	14	64	27	12	0.188	37
18	Agriculture	10	18	173	15	50	0.289	25
19	Pharmacology and Pharmaceutical Science	10	18	164	16	138	0.841	5
20	Business and Marketing	10	18	120	19	51	0.425	19
21	Arts and Humanities	10	18	28	32	1	0.036	42
22	Biotechnology	9	22	102	21	43	0.422	20
23	Energy and Fuel Science	9	22	102	21	26	0.255	26
24	Education	9	22	77	24	30	0.390	21
25	Psychology	9	22	71	25	27	0.380	22
26	Remote Sensing	9	22	61	28	39	0.639	11
27	Telecommunication	9	22	27	33	0	0.000	43
28	Rural development	9	22	20	36	14	0.700	9

SN	Subjects	Number of IITs		Articles		Citations		Rank Citation /Paper
		Nos	Rank	Nos	Rank	Nos	Citation /Paper	
29	Astronomy, Astrophysics, Space and Geodesy	8	29	134	18	34	0.254	27
30	Water	7	30	58	29	6	0.103	40
31	Botany	7	30	33	31	16	0.485	17
32	Pollution	7	30	15	38	1	0.067	41
33	Textile	6	33	136	17	112	0.824	7
34	History and Philosophy of Science and Knowledge	6	33	36	30	49	1.361	1
35	Food and Beverage Science	5	35	66	26	65	0.985	3
36	Others	5	35	24	34	26	1.083	2
37	Meteorology	5	35	23	35	8	0.348	23
38	Anthropology	5	35	16	37	4	0.250	28
39	Toxicology	5	35	5	45	1	0.200	35
40	Domestic Science	4	40	10	39	6	0.600	13
41	Forestry	4	40	7	40	0	0.000	43
42	Zoology	4	40	7	40	0	0.000	43
43	Population Studies	4	40	6	42	1	0.167	38
44	Law	4	40	6	42	2	0.333	24
45	Veterinary Science	3	45	4	47	0	0.000	43
46	Dairying, Dairy, Animals and Animals Produce	2	46	6	42	1	0.167	38
47	Fishery	2	46	5	45	0	0.000	43
48	Nanoscience and Nanotechnology	1	48	1	48	0	0.000	43

Table 5.1.9: Name of IITs which have not Published Papers in Indian Journals

S.No.	Name of IITs	Establishment Year
1	IIT Bhilai	2016
2	IIT Goa	2016
3	IIT Jammu	2016
4	IIT Palakkad	2015
5	IIT Tirupati	2015

2. National Institutes of Technology (NITs)

National Institutes of Technology (NITs) is a group of public engineering colleges of India. Theseinstitutes have been declared by the Act of Parliament as institutions of national importance. All theseNITs from their inception used to be referred to as 'Regional Engineering Colleges (RECs)' and weregoverned by their respective state governments. NITs were founded to promote regional diversity andmulti-cultural understanding in India. NITs are 32autonomous institutes. They are generally locatedin each major state/territory of India. In 2007, the Indian government declared these institutionsas 'Institute of National Importance'. In the NIT family, NIT Patna has the oldest history 1886+,followed by NIT Raipur 1956, NIT Warangal 1959 and so on. Between 1960 and 1970, 13 NITs were established, between 1971 and 1980 not a single NIT was established, 1981 to 1990 only two NITs were established and starting from 1991 to 2009, not a single NIT was established. In the history of NITs establishment in the country, year 2010 seems to be very rich year wherein ten (10) NITs were established and thereafter in 2015 and 2016 one and two more NIT respectively were established. Hence, the history of establishing NITs in the country is much skewed. Primarily, NITs were engaged in imparting education in engineering and did not do any research till 2007. After getting the status of 'institutes of national importance', their mandate has been redrawn to achieve following goals: offer effective teaching-learning to students; provide the knowledge, skills and attitudes to UG and PG students for their being able to be distinguished globally and be socially responsible; train the students to learn tomeet changing needs due to rapid technological advancement, to offer the society the necessary technology and to actively participate in all round socio-economic development programmes; provide facilities, infrastructure, inspiration and resources to conduct meaningful research along, development of understanding of social relevance including that of indigenous materials, capacities and technologies; act as centers of excellence in technical education catalyzing absorption, innovation, diffusion and transfer of high technologies for improved productivity & quality of life at national and global level; have regional consideration as regards to local needs, relevance, strength and limitations and the community services; create an environment for effective teaching-learning by encouraging the students and faculty to nurture their intellectual curiosity, and scientific and research temper; increase research and consultancy activity,, options for incentives and encouragement to motivate staff and students to actively involved in research activities in collaboration, industry and R&D centers.

Table: 5.2.1. It gives NIT wise data based on number of articles produced, number of citations received and citations/paper. Upto 2015, only 26 NITs had published their research papers and five have not published any paper in Indian journals. As per number of research papers contribution, 9 NITs have made more than 200 articles and remaining 17 NITs have less than 200 articles. Accordingly, NIT Rourkela has 1st position, 307 articles, followed by NIT Tiruchirappali – 299 articles; NIT Kurukshetra – 287 articles; MANIT Bhopal – 280 articles; NIT Karnataka – 272 articles; NIT Warangal – 228 articles; NIT Durgapur – 220 articles; SVNIT Surat 220 articles; VNIT Nagpur 204 articles and so on. This table also provides NIT wise citation received and citation per paper. NIT wiseCitation and Citation per paper indicate quality of the productivity.

Table: 5.2.2. It provides Rank order of top 100 authors of all NITs. Among 100 top authors of NITs, top 10 authors are Ganesan N, NIT Calicut stands at 1st position, 21 articles, followed by Sahoo S. NIT Durgapur, 20 articles, Jayanthus S of NIT Rourkela, 19 articles, Chakarvarti SK, 16 articles from NIT Kurukshetra, Singh AS, 15 articles from NIT Hamirpur, Tripathy DP, 14 articles from Rourkela, Kumanan S, 14 articles from NIT Tiruchirappali, Thote NR, 14 articles from VNIT Nagpur, Sharma Ashok, 14 articles from MNIT Jaipur and Anantharaman N, 13 articles from NIT Tiruchirappali. Among these top 10 authors two each are from NIT Rourkela and NIT Tiruchirappali and remaining six are from rest of six NITs of top ten authors. It is also observed that from Rank order 91 to 100 each author has published six articles. So the top 100 contributing authors of NITs have a range of 21 to 06 articles to their credit.

Table: 5.2.3. It provides a NIT wise list of number of authors and their share in top 100 authors contributed work. Accordingly, NIT Rourkela, its 13 authors and their 13.34 % share in top 100 authors work stands at 1st position among all NITs. It is followed by NIT Kurukshetra, its 11 authors and their 11.6% share in top 100 authors work; NIT Tiruchirappali, its 10 authors and their 9.97% share in top 100 authors work.

Table: 5.2.4. It provides journal wise NITs numbers and their contributions details such as articles and citations received. Accordingly, *'International Journal of Engineering Science and Technology'* is at rank 1st, 108 articles and 23 citations contribution from 07 NITs; followed by '*Indian Mining and Engineering Journal',* 93 articles and 16 citations from 05 NITs.

Table: 5.2.5. It provides journal wise number of NITs contribution and accordingly, *'International Journal of Engineering Science and Technology'* is at 1st rank, 7 NITs contribution therein; it also stands at 1st rank, 108 articles and *'Asian Journal of Experimental Sciences'* is at 1st rank scoring 8.286% citations/paper.

Table 5.2.6 shows that NITs have made contribution in 21 subject categories, i.e. Engineering Science and Technology – 20 NITs and it is the maximum number of NITs contributed in 21 subject categories; followed by Chemistry – 15 NITs; Material Science 12 NITs; Computer Science and Technology – 9 NITs; Environmental Science – 11 NITs; General Science and Tech nology – 9 NITs; Physics – 7 NITs; Biological Science – 7 NITs; Earth and Geological Science – 5 NITs; Mathematics – 4 NITs; Statistics – 4 NITs; Education – 3 NITs; Energy and Fuel Science – 2 NITs; Management – 2 NITs; and rest 6 Subject categories – viz: Pharmacology and Pharmaceutical Science; Textile; Water; Library and Information Science; Pollution; Health Science; and Arts and Humanities are insignificant for NITs Subjects core area. In these six subject categories, single NITs have made contribution. Based on subject wise contribution by NITs, 14 subject categories seem important wherein two or more number of NITs have made contribution.

Table: 5.2.7. It provides subject wise share of most productive NITs; accordingly, 'Engineering Science and Technoloy' as a subject has 100% share contribution from all 20 NITs, in this subject category, its articles share is 45.6% and 31.896% citations share and stands at 1st rank in all given parameters. This subject category is followed by 'Chemistry' and it is at 2nd rank, 75% NITs contribution share; 12.68% articles and 19.559% citations share; 'Material Science' is at 3rd rank, 60% NITs share.

Table: 5.2.8. Lists 04 new NITs, no research papers they are *namely NIT Andhra Pradesh, NIT Meghalaya, NIT Mizoram and NIT Uttarakhand.* Normally, an institute or university takes 12 to 15 years gestation period to grow, bloom and mature for comparable visible scholarly publications.

	Table 5.2.1: Rank Order of National Institutes of Technology (NITs): Based on Articles, Citations and Citations/Paper							
SN	**INSTITUTE**	**Estd. Year**	**A**	**Rank A**	**C**	**Rank C**	**C/P**	**Rank C/P**
1	National Institute of Technology Rourkela (NIT Rourkela)	1961	307	**1**	106	**1**	0.345	**5**
2	National Institute of Technology Tiruchirappalli (NIT Tiruchirappalli)	1964	299	**2**	80	**6**	0.268	**10**
3	National Institute of Technology Kurukshetra (NIT Kurukshetra)	1963	287	**3**	87	**4**	0.303	**8**
4	Maulana Azad National Institute of Technology (MANIT)	1960	280	**4**	93	**2**	0.332	**6**
5	National Institute of Technology Karnataka (NIT Karnataka)	1960	272	**5**	85	**5**	0.313	**7**
6	National Institute of Technology Warangal (NIT Warangal)	1959	228	**6**	43	**8**	0.189	**16**
7	National Institute of Technology Durgapur (NIT Durgapur)	1960	220	**7**	88	**3**	0.400	**4**
8	Sardar Vallabhbhai National Institute of Technology (SVNIT)	1961	220	**7**	39	**9**	0.177	**17**
9	Visvesvaraya National Institute of Technology (VNIT)	1960	204	**9**	29	**13**	0.142	**18**
10	Motilal Nehru National Institute of Technology (MNNIT)	1961	169	**10**	32	**11**	0.189	**15**
11	Malaviya National Institute of Technology Jaipur (MNIT Jaipur)	1963	167	**11**	22	**15**	0.132	**19**
12	National Institute of Technology Calicut (NIT Calicut)	1961	153	**12**	38	**10**	0.248	**12**
13	Dr. B R Ambedkar National Institute of Technology Jalandhar (BRANIT Jalandhar)	1987	152	**13**	31	**12**	0.204	**14**
14	National Institute of Technology Hamirpur (NIT Hamirpur)	1986	144	**14**	59	**7**	0.410	**3**
15	National Institute of Technology Raipur (NIT Raipur)	1956	112	**15**	23	**14**	0.205	**13**
16	National Institute of Technology Jamshedpur (NIT Jamshedpur)	1960	66	**16**	4	**19**	0.061	**21**
17	National Institute of Technology Agartala (NIT Agartala)	1965	59	**17**	6	**18**	0.102	**20**
18	National Institute of Technology Srinagar (NIT Srinagar)	1960	54	**18**	15	**16**	0.278	**9**
19	National Institute of Technology Silchar (NIT Silchar)	1967	45	**19**	12	**17**	0.267	**11**
20	National Institute of Technology Patna (NIT Patna)	1886	33	**20**	1	**21**	0.030	**22**
21	National Institute of Technology Manipur (NIT Manipur)	2010	7	**21**	4	**19**	0.571	**1**
22	National Institute of Technology Arunachal Pradesh (NIT Arunachal Pradesh)	2010	5	**22**	0	**23**	0.000	**23**
23	National Institute of Technology Puducherry (NIT Puducherry)	2010	2	**23**	1	**21**	0.500	**2**
24	National Institute of Technology Sikkim (NIT Sikkim)	2010	2	**23**	0	**23**	0.000	**23**
25	National Institute of Technology Delhi (NIT Delhi)	2010	1	**25**	0	**23**	0.000	**23**
26	National Institute of Technology Goa (NIT Goa)	2010	1	**25**	0	**23**	0.000	**23**
27	NIT Nagaland	2010	0	**26**	0	**24**	0.000	**24**

Legend: A = Articles; C = Citations; C/P = Citation/Paper

Table 5.2.2: Rank Order of Top 100 Authors of NITs: Based on Number of Articles, Citations and Citations/Paper								
SN	**AUTHORS**	**Institute Name**	**Article**	**Rank A**	**Citation**	**Rank C**	**C/P**	**Rank C/P**
1	Ganesan N	NIT Calicut	21	**1**	11	**10**	0.524	**28**
2	Sahoo S	NIT Durgapur	20	**2**	10	**11**	0.500	**29**
3	Jayanthu S	NIT Rourkela	19	**3**	9	**14**	0.474	**34**
4	Chakarvarti S K	NIT Kurukshetra	16	**4**	5	**29**	0.313	**38**
5	Singha A S	NIT Hamirpur	15	**5**	27	**2**	1.800	**6**
6	Tripathy D P	NIT Rourkela	14	**6**	1	**59**	0.071	**76**
7	Kumanan S	NIT Tiruchirappalli	14	**6**	9	**14**	0.643	**24**
8	Thote N R	VNIT Nagpur	14	**6**	3	**34**	0.214	**57**
9	Sharma Ashok	MNIT Jaipur	14	**6**	1	**59**	0.071	**76**
10	Anantharaman N	NIT Tiruchirappalli	13	**10**	14	**7**	1.077	**15**
11	Gupta A B	MNIT Jaipur	13	**10**	2	**46**	0.154	**58**
12	Panigrahi S	NIT Rourkela	13	**10**	3	**34**	0.231	**53**
13	Dixit Savita	MANIT Bhopal	13	**10**	19	**4**	1.462	**7**
14	Khanduja Dinesh	NIT Kurukshetra	13	**10**	3	**34**	0.231	**53**
15	Selvam V K Manicka	NIT Calicut	12	**15**	7	**21**	0.583	**25**
16	Wasewar Kailas L	VNIT Nagpur	12	**15**	1	**59**	0.083	**75**
17	Suresh S	MANIT Bhopal	12	**15**	6	**25**	0.500	**29**
18	Mishra Subash Chandra	NIT Rourkela	12	**15**	13	**9**	1.083	**14**
19	Chauhan R P	NIT Kurukshetra	12	**15**	6	**25**	0.500	**29**
20	Kumar D	NIT Kurukshetra	12	**15**	8	**18**	0.667	**21**
21	Verma M K	NIT Raipur	11	**21**	0	**78**	0.000	**78**
22	Asokan P	NIT Tiruchirappalli	11	**21**	1	**59**	0.091	**74**
23	Shanmugam S	NIT Tiruchirappalli	11	**21**	0	**78**	0.000	**78**
24	Pardasani K R	MANIT Bhopal	11	**21**	3	**34**	0.273	**47**
25	Srivastava R K	MNNIT Allahabad	10	**25**	1	**59**	0.100	**71**
26	Selvaraju N	NIT Calicut	10	**25**	3	**34**	0.300	**39**
27	Kuzhiveli Biju T	NIT Calicut	10	**25**	0	**78**	0.000	**78**
28	Chaurasia S P	MNIT Jaipur	10	**25**	0	**78**	0.000	**78**
29	Pradhan Manoj	NIT Raipur	10	**25**	3	**34**	0.300	**39**
30	Gupta Rajesh	VNIT Nagpur	10	**25**	1	**59**	0.100	**71**
31	Channiwala S A	SVNIT Surat	10	**25**	3	**34**	0.300	**39**
32	Indira P V	NIT Calicut	10	**25**	10	**11**	1.000	**16**

SN	AUTHORS	Institute Name	Article	Rank A	Citation	Rank C	C/P	Rank C/P
33	Mehra Rohit	BRANIT Jalandhar	10	**25**	1	**59**	0.100	**71**
34	Roy G K	NIT Rourkela	10	**25**	3	**34**	0.300	**39**
35	Peshwe D R	VNIT Nagpur	9	**35**	2	**46**	0.222	**55**
36	Bansal Ajay	BRANIT Jalandhar	9	**35**	1	**59**	0.111	**69**
37	Solanki C H	SVNIT Surat	9	**35**	0	**78**	0.000	**78**
38	Nandi M M	NIT Durgapur	9	**35**	18	**5**	2.000	**5**
39	Tewari P C	NIT Kurukshetra	9	**35**	2	**46**	0.222	**55**
40	Mugeraya Gopal	NIT Karnataka	9	**35**	1	**59**	0.111	**69**
41	Dutta P K	MNNIT Allahabad	9	**35**	7	**21**	0.778	**18**
42	Joshi Jyoti	MNIT Jaipur	8	**42**	0	**78**	0.000	**78**
43	Sharma Ajay K	BRANIT Jalandhar	8	**42**	2	**46**	0.250	**48**
44	Kumar Kuldeep	NIT Kurukshetra	8	**42**	1	**59**	0.125	**62**
45	Quamara J K	NIT Kurukshetra	8	**42**	2	**46**	0.250	**48**
46	Das Sarat Kumar	NIT Rourkela	8	**42**	1	**59**	0.125	**62**
47	Naik H B	SVNIT Surat	8	**42**	0	**78**	0.000	**78**
48	Pal B K	NIT Rourkela	8	**42**	0	**78**	0.000	**78**
49	Agarwal Madhu	MNIT Jaipur	8	**42**	1	**59**	0.125	**62**
50	Khare Kavita	MANIT Bhopal	8	**42**	1	**59**	0.125	**62**
51	Mehta M N	SVNIT Surat	8	**42**	1	**59**	0.125	**62**
52	Ingle R K	VNIT Nagpur	8	**42**	2	**46**	0.250	**48**
53	Singh Hari	NIT Kurukshetra	8	**42**	6	**25**	0.750	**19**
54	Rehman A	MANIT Bhopal	8	**42**	2	**46**	0.250	**48**
55	Rao T D Gunneswara	NIT Warangal	8	**42**	2	**46**	0.250	**48**
56	Venkatathri N	NIT Warangal	8	**42**	0	**78**	0.000	**78**
57	Ramesh S T	NIT Tiruchirappalli	8	**42**	0	**78**	0.000	**78**
58	Ranjana	NIT Durgapur	8	**42**	18	**5**	2.250	**4**
59	Bhagoria J L	MANIT Bhopal	8	**42**	6	**25**	0.750	**19**
60	Singh S N	NIT Jamshedpur	8	**42**	1	**59**	0.125	**62**
61	Lalmani	NIT Srinagar	8	**42**	10	**11**	1.250	**10**
62	Gandhimathi R	NIT Tiruchirappalli	8	**42**	0	**78**	0.000	**78**
63	Natarajan C	NIT Tiruchirappalli	8	**42**	0	**78**	0.000	**78**
64	Sudhakar K	MANIT Bhopal	8	**42**	0	**78**	0.000	**78**
65	Rangabhashiyam S	NIT Calicut	8	**42**	3	**34**	0.375	**36**
66	Ghoshal S P	NIT Durgapur	8	**42**	0	**78**	0.000	**78**
67	Thakur Vijay Kumar	NIT Hamirpur	8	**42**	23	**3**	2.875	**2**
68	Jaggi Neena	NIT Kurukshetra	8	**42**	9	**14**	1.125	**13**

SN	AUTHORS	Institute Name	Article	Rank A	Citation	Rank C	C/P	Rank C/P
69	Keshav Amit	NIT Raipur	8	**42**	1	**59**	0.125	**62**
70	Singh R K	NIT Rourkela	7	**70**	9	**14**	1.286	**9**
71	Sunil	NIT Hamirpur	7	**70**	0	**78**	0.000	**78**
72	De Anupam	NIT Durgapur	7	**70**	1	**59**	0.143	**59**
73	Shetty A Nityananda	NIT Karnataka	7	**70**	2	**46**	0.286	**43**
74	Pattabhiramacharyulu N Ch	NIT Warangal	7	**70**	0	**78**	0.000	**78**
75	Shrihari S	NIT Karnataka	7	**70**	0	**78**	0.000	**78**
76	Singh S P	BRANIT Jalandhar	7	**70**	4	**30**	0.571	**26**
77	Pradhan M	NIT Raipur	7	**70**	1	**59**	0.143	**59**
78	Ramacharyulu N Ch Pattabhi	NIT Warangal	7	**70**	0	**78**	0.000	**78**
79	Surendranathan A O	NIT Karnataka	7	**70**	0	**78**	0.000	**78**
80	Kaith B S	BRANIT Jalandhar	7	**70**	1	**59**	0.143	**59**
81	Jain Rashmi	MNIT Jaipur	7	**70**	2	**46**	0.286	**43**
82	Bhole A G	VNIT Nagpur	7	**70**	4	**30**	0.571	**26**
83	Pathak S U	VNIT Nagpur	7	**70**	3	**34**	0.429	**35**
84	Tembhurkar A R	VNIT Nagpur	7	**70**	8	**18**	1.143	**12**
85	Desai A K	SVNIT Surat	7	**70**	0	**78**	0.000	**78**
86	Patel Sabita	NIT Rourkela	7	**70**	0	**78**	0.000	**78**
87	Sahoo Chandan Kumar	NIT Rourkela	7	**70**	0	**78**	0.000	**78**
88	Narayanasamy R	NIT Tiruchirappalli	7	**70**	2	**46**	0.286	**43**
89	Singh D P	NIT Kurukshetra	7	**70**	7	**21**	1.000	**16**
90	Mehta P K	MNNIT Allahabad	7	**70**	2	**46**	0.286	**43**
91	Agnihotri G	MANIT Bhopal	6	**91**	0	**78**	0.000	**78**
92	Kumar Dinesh	NIT Kurukshetra	6	**91**	4	**30**	0.667	**21**
93	Asthana Somya	NIT Rourkela	6	**91**	7	**21**	1.167	**11**
94	Banerjee Ranu	NIT Durgapur	6	**91**	8	**18**	1.333	**8**
95	Ponniah R Joseph	NIT Tiruchirappalli	6	**91**	4	**30**	0.667	**21**
96	Anu N	NIT Calicut	6	**91**	3	**34**	0.500	**29**
97	Adhikari Airody Vasudeva	NIT Karnataka	6	**91**	40	**1**	6.667	**1**
98	Sathiya P	NIT Tiruchirappalli	6	**91**	3	**34**	0.500	**29**
99	Behera D	NIT Rourkela	6	**91**	2	**46**	0.333	**37**
100	Tiwari T N	NIT Rourkela	6	**91**	14	**7**	2.333	**3**

Legend: A= Articles; C = Citations; C/P = Citations/Paper

Table 5.2.3: NIT wise Number of Authors in Top 100 Author's of NITs				
Rank	**NITs Name**	**Authors Name**	**Number of Authors**	**NIT wise % of Top Authors Share in 100 Authors Papers**
1	**NIT Rourkela**	Asthana Somya	13	13.34
		Behera D		
		Das Sarat Kumar		
		Jayanthu S		
		Mishra Subash Chandra		
		Pal B K		
		Panigrahi S		
		Patel Sabita		
		Roy G K		
		Sahoo Chandan Kumar		
		Singh R K		
		Tiwari T N		
		Tripathy D P		
2	**NIT Kurukshetra**	Chakarvarti S K	11	11.6
		Chauhan R P		
		Jaggi Neena		
		Khanduja Dinesh		
		Kumar D		
		Kumar Dinesh		
		Kumar Kuldeep		
		Quamara J K		
		Singh D P		
		Singh Hari		
		Tewari P C		
3	**NIT Tiruchirappalli**	Anantharaman N	10	9.97
		Asokan P		
		Gandhimathi R		
		Kumanan S		
		Narayanasamy R		
		Natarajan C		
		Ponniah R Joseph		
		Ramesh S T		
		Sathiya P		
		Shanmugam S		
4	**MANIT Bhopal**	Agnihotri G	8	8.02
		Bhagoria J L		
		Dixit Savita		
		Khare Kavita		
		Pardasani K R		
		Rehman A		
		Sudhakar K		
		Suresh S		

Rank	NITs Name	Authors Name	Number of Authors	NIT wise % of Top Authors Share in 100 Authors Papers
5	**VNIT Nagpur**	Bhole A G Gupta Rajesh Ingle R K Pathak S U Peshwe D R Tembhurkar A R Thote N R Wasewar Kailas L	8	8.02
6	**NIT Calicut**	Anu N Ganesan N Indira P V Kuzhiveli Biju T Rangabhashiyam S Selvam V K Manicka Selvaraju N	7	8.35
7	**MNIT Jaipur**	Agarwal Madhu Chaurasia S P Gupta A B Jain Rashmi Joshi Jyoti Sharma Ashok	6	6.5
8	**NIT Durgapur**	Banerjee Ranu De Anupam Ghoshal S P Nandi M M Ranjana Sahoo S	6	6.29
9	**BRANIT Jalandhar**	Bansal Ajay Kaith B S Mehra Rohit Sharma Ajay K Singh S P	5	4.44
10	**NIT Karnataka**	Adhikari Airody Vasudeva Mugeraya Gopal Shetty A Nityananda Shrihari S Surendranathan A O	5	3.9
11	**SVNIT Surat**	Channiwala S A Desai A K Mehta M N Naik H B Solanki C H	5	4.55

Rank	NITs Name	Authors Name	Number of Authors	NIT wise % of Top Authors Share in 100 Authors Papers
12	**NIT Warangal**	Pattabhiramacharyulu N Ch	4	3.25
		Ramacharyulu N Ch Pattabhi		
		Rao T D Gunneswara		
		Venkatathri N		
13	**NIT Raipur**	Keshav Amit	4	3.9
		Pradhan M		
		Pradhan Manoj		
		Verma M K		
14	**MNNIT Allahabad**	Dutta P K	3	2.81
		Mehta P K		
		Srivastava R K		
15	**NIT Hamirpur**	Singha A S	3	3.25
		Sunil		
		Thakur Vijay Kumar		
16	**NIT Jamshedpur**	Singh S N	1	0.86
17	**NIT Srinagar**	Lalmani	1	0.86

Table 5.2.4: Journal-wise NITs' Contribution, Number of Papers and Citations				
SN	**Journal Name**	**NITs**	**Article**	**Citation**
1	INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE AND TECHNOLOGY	MANIT Bhopal	42	10
		MNNIT Allahabad	8	2
		NIT Hamirpur	8	1
		NIT Karnataka	8	2
		NIT Kurukshetra	22	6
		NIT Tiruchirappalli	11	2
		SVNIT Surat	9	0
	Total	**7**	**108**	**23**
2	INDIAN MINING & ENGINEERING JOURNAL (THE)	NIT Karnataka	7	0
		NIT Kurukshetra	7	0
		NIT Raipur	20	4
		NIT Rourkela	37	9
		VNIT Nagpur	22	3
	Total	**5**	**93**	**16**
3	INTERNATIONAL JOURNAL OF APPLIED ENGINEERING RESEARCH	NIT Kurukshetra	13	2
		NIT Tiruchirappalli	14	0
		NIT Warangal	7	1
		SVNIT Surat	15	1
	Total	**4**	**49**	**4**
4	JOURNAL OF STRUCTURAL ENGINEERING	NIT Calicut	25	8
		NIT Karnataka	7	3
		VNIT Nagpur	9	0
	Total	**3**	**41**	**11**
5	INTERNATIONAL JOURNAL OF CHEMTECH RESEARCH	MANIT Bhopal	29	5
		NIT Tiruchirappalli	11	4
	Total	**2**	**40**	**9**
6	BULLETIN OF MATERIALS SCIENCE	NIT Hamirpur	9	15
		NIT Karnataka	6	7
		NIT Rourkela	15	5
		NIT Warangal	9	1
	Total	**4**	**39**	**28**
7	JOURNAL OF CENTRAL POWER RESEARCH INSTITUTE (THE)	NIT Karnataka	15	1
		SVNIT Surat	23	0
	Total	**2**	**38**	**1**

SN	Journal Name	NITs	Article	Citation
8	INDIAN JOURNAL OF CHEMICAL TECHNOLOGY	NIT Durgapur	8	15
		NIT Karnataka	15	6
		NIT Rourkela	6	3
		SVNIT Surat	8	0
	Total	**4**	**37**	**24**
SN	**Journal Name**	**NITs**	**Article**	**Citation**
9	INDIAN JOURNAL OF CRYOGENICS	NIT Calicut	13	0
		NIT Rourkela	8	0
		SVNIT Surat	14	2
	Total	**3**	**35**	**2**
10	JOURNAL OF MINES METALS & FUELS	NIT Karnataka	10	0
		NIT Rourkela	18	14
		VNIT Nagpur	7	0
	Total	**3**	**35**	**14**
11	JOURNAL OF SCIENTIFIC & INDUSTRIAL RESEARCH	BRANIT Jalandhar	7	0
		NIT Calicut	9	3
		NIT Tiruchirappalli	11	6
		SVNIT Surat	7	2
	Total	**4**	**34**	**11**
12	ASIAN JOURNAL OF CHEMISTRY	BRANIT Jalandhar	6	1
		MANIT Bhopal	6	2
		NIT Kurukshetra	14	5
		NIT Tiruchirappalli	7	1
	Total	**4**	**33**	**9**
13	INDIAN JOURNAL OF PURE & APPLIED PHYSICS	NIT Durgapur	7	7
		NIT Kurukshetra	22	12
	Total	**2**	**29**	**19**
14	INDIAN FOUNDRY JOURNAL	MNIT Jaipur	14	1
		NIT Karnataka	13	1
	Total	**2**	**27**	**2**
15	INTERNATIONAL JOURNAL OF INFORMATION PROCESSING	NIT Durgapur	7	0
		NIT Karnataka	17	0
	Total	**2**	**24**	**0**
16	MANUFACTURING TECHNOLOGY TODAY	NIT Tiruchirappalli	24	1
	Total	**1**	**24**	**1**
17	INDIAN JOURNAL OF PHYSICS	NIT Rourkela	14	5
		NIT Srinagar	8	10
	Total	**2**	**22**	**15**

SN	Journal Name	NITs	Article	Citation
18	INDIAN HIGHWAYS	MNIT Jaipur	8	3
		NIT Karnataka	13	5
	Total	**2**	**21**	**8**
19	JOURNAL OF INDIAN WATER WORKS ASSOCIATION	VNIT Nagpur	21	1
	Total	**1**	**21**	**1**
20	INDIAN JOURNAL OF ENGINEERING & MATERIALS SCIENCES	NIT Hamirpur	7	0
		NIT Tiruchirappalli	12	7
	Total	**2**	**19**	**7**
SN	**Journal Name**	**NITs**	**Article**	**Citation**
21	JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): ELECTRICAL ENGINEERING DIVISION BOARD	NIT Durgapur	8	0
		VNIT Nagpur	9	0
	Total	**2**	**17**	**0**
22	W R I JOURNAL	NIT Tiruchirappalli	17	2
	Total	**1**	**17**	**2**
23	INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN COMPUTER SCIENCE	BRANIT Jalandhar	9	0
		NIT Kurukshetra	7	0
	Total	**2**	**16**	**0**
24	JOURNAL OF THE INDIAN CHEMICAL SOCIETY	NIT Kurukshetra	8	5
		NIT Warangal	8	1
	Total	**2**	**16**	**6**
25	JOURNAL OF ENVIRONMENTAL SCIENCE & ENGINEERING	VNIT Nagpur	15	12
	Total	**1**	**15**	**12**
26	NATURE ENVIRONMENT & POLLUTION TECHNOLOGY	MNIT Jaipur	15	1
	Total	**1**	**15**	**1**
27	INDIAN JOURNAL OF ENVIRONMENTAL PROTECTION	NIT Rourkela	7	12
		NIT Tiruchirappalli	7	8
	Total	**2**	**14**	**20**
28	JOURNAL OF METALLURGY AND MATERIALS SCIENCE	NIT Jamshedpur	13	0
	Total	**1**	**13**	**0**

SN	Journal Name	NITs	Article	Citation
29	INTERNATIONAL JOURNAL ON COMPUTER SCIENCE AND ENGINEERING	MANIT Bhopal	12	6
	Total	**1**	**12**	**6**
30	PHYSICS EDUCATION	NIT Durgapur	12	0
	Total	**1**	**12**	**0**
31	JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): CIVIL ENGINEERING DIVISION BOARD	NIT Calicut	11	2
	Total	**1**	**11**	**2**
32	JOURNAL ON FUTURE ENGINEERING AND TECHNOLOGY	VNIT Nagpur	11	0
	Total	**1**	**11**	**0**
33	INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY	MANIT Bhopal	10	9
	Total	**1**	**10**	**9**
34	INTERNATIONAL JOURNAL OF MATERIALS SCIENCES	NIT Tiruchirappalli	10	0
	Total	**1**	**10**	**0**
35	ASIAN JOURNAL OF EXPERIMENTAL SCIENCES	MANIT Bhopal	9	29
	Total	**1**	**9**	**29**
36	IETE JOURNAL OF EDUCATION	NIT Warangal	9	1
	Total	**1**	**9**	**1**
37	INDIAN JOURNAL OF CHEMISTRY SECTION B - ORGANIC INCLUDING MEDICINAL	NIT Warangal	9	9
	Total	**1**	**9**	**9**
38	INDIAN JOURNAL OF FIBRE & TEXTILE RESEARCH	BRANIT Jalandhar	9	5
	Total	**1**	**9**	**5**
39	INDIAN CONCRETE JOURNAL (THE)	NIT Calicut	8	7
	Total	**1**	**8**	**7**
40	INTERNATIONAL JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES	NIT Rourkela	8	13
	Total	**1**	**8**	**13**
41	PRODUCTIVITY	NIT Kurukshetra	8	0
	Total	**1**	**8**	**0**
42	IETE JOURNAL OF RESEARCH	MNIT Jaipur	7	0
	Total	**1**	**7**	**0**
43	INDIAN CHEMICAL ENGINEER	NIT Warangal	7	0
	Total	**1**	**7**	**0**
44	INDIAN JOURNAL OF CHEMISTRY - SECTION A: INORGANIC, BIO-INORGANIC, PHYSICAL, THEORETICAL & ANALYTICAL	NIT Rourkela	7	0
	Total	**1**	**7**	**0**

SN	Journal Name	NITs	Article	Citation
45	INTERNATIONAL JOURNAL OF APPLIED MATHEMATICAL ANALYSIS AND APPLICATIONS	NIT Warangal	7	2
	Total	**1**	**7**	**2**
46	INTERNATIONAL JOURNAL OF CIVIL & STRUCTURAL ENGINEERING	SVNIT Surat	7	0
	Total	**1**	**7**	**0**
47	INTERNATIONAL REVIEW OF PURE & APPLIED MATHEMATICS	NIT Warangal	7	0
	Total	**1**	**7**	**0**
48	JOURNAL OF INDIAN ACADEMY OF MATHEMATICS (THE)	MNIT Jaipur	7	0
	Total	**1**	**7**	**0**
49	JOURNAL OF OPTICS	MNIT Jaipur	7	1
	Total	**1**	**7**	**1**
50	JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): MINING ENGINEERING DIVISION BOARD	NIT Karnataka	7	1
	Total	**1**	**7**	**1**
51	JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): SERIES C - MECHANICAL, PRODUCTION, AEROSPACE AND MARINE ENGINEERING	NIT Hamirpur	7	1
	Total	**1**	**7**	**1**
52	JOURNAL OF THE TEXTILE ASSOCIATION	BRANIT Jalandhar	7	0
	Total	**1**	**7**	**0**
53	NATIONAL ACADEMY SCIENCE LETTERS	MNNIT Allahabad	7	3
	Total	**1**	**7**	**3**
54	RESEARCH JOURNAL OF ENGINEERING AND TECHNOLOGY	NIT Hamirpur	7	0
	Total	**1**	**7**	**0**
55	THE CRITERION: AN INTERNATIONAL JOURNAL IN ENGLISH	NIT Durgapur	7	0
	Total	**1**	**7**	**0**
56	E-JOURNAL OF CHEMISTRY	NIT Hamirpur	6	9
	Total	**1**	**6**	**9**
57	JOURNAL OF POLYMER MATERIALS	MNNIT Allahabad	6	6
	Total	**1**	**6**	**6**

Table 5.2.5: Journal-wise Number of NITs Contribution								
SN	Journal	Number of NITs		Articles		Citations		Rank Citation /Paper
		Nos	Rank	Nos	Rank	Nos	Citation /Paper	
1	INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE AND TECHNOLOGY	7	1	108	1	23	0.213	26
2	INDIAN MINING & ENGINEERING JOURNAL (THE)	5	2	93	2	16	0.172	28
3	INTERNATIONAL JOURNAL OF APPLIED ENGINEERING RESEARCH	4	3	49	3	4	0.082	34
6	BULLETIN OF MATERIALS SCIENCE	4	3	41	4	11	0.268	24
8	INDIAN JOURNAL OF CHEMICAL TECHNOLOGY	4	3	40	5	9	0.225	25
11	JOURNAL OF SCIENTIFIC & INDUSTRIAL RESEARCH	4	3	39	6	28	0.718	10
12	ASIAN JOURNAL OF CHEMISTRY	4	3	38	7	1	0.026	40
4	JOURNAL OF STRUCTURAL ENGINEERING	3	8	37	8	24	0.649	13
9	INDIAN JOURNAL OF CRYOGENICS	3	8	35	9	2	0.057	37
10	JOURNAL OF MINES METALS & FUELS	3	8	35	9	14	0.400	17
5	INTERNATIONAL JOURNAL OF CHEMTECH RESEARCH	2	11	34	11	11	0.324	21
7	JOURNAL OF CENTRAL POWER RESEARCH INSTITUTE (THE)	2	11	33	12	9	0.273	23
13	INDIAN JOURNAL OF PURE & APPLIED PHYSICS	2	11	29	13	19	0.655	12
14	INDIAN FOUNDRY JOURNAL	2	11	27	14	2	0.074	35
15	INTERNATIONAL JOURNAL OF INFORMATION PROCESSING	2	11	24	15	0	0.000	41
17	INDIAN JOURNAL OF PHYSICS	2	11	24	15	1	0.042	39
18	INDIAN HIGHWAYS	2	11	22	17	15	0.682	11
20	INDIAN JOURNAL OF ENGINEERING & MATERIALS SCIENCES	2	11	21	18	8	0.381	18
21	JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): ELECTRICAL ENGINEERING DIVISION BOARD	2	11	21	18	1	0.048	38
23	INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN COMPUTER SCIENCE	2	11	19	20	7	0.368	20

SN	Journal	Number of NITs		Articles		Citations		Rank Citation /Paper
		Nos	Rank	Nos	Rank	Nos	Citation /Paper	
24	JOURNAL OF THE INDIAN CHEMICAL SOCIETY	2	11	17	21	0	0.000	41
27	INDIAN JOURNAL OF ENVIRONMENTAL PROTECTION	2	11	17	21	2	0.118	32
16	MANUFACTURING TECHNOLOGY TODAY	1	23	16	23	0	0.000	41
19	JOURNAL OF INDIAN WATER WORKS ASSOCIATION	1	23	16	23	6	0.375	19
22	W R I JOURNAL	1	23	15	25	12	0.800	9
25	JOURNAL OF ENVIRONMENTAL SCIENCE & ENGINEERING	1	23	15	25	1	0.067	36
26	NATURE ENVIRONMENT & POLLUTION TECHNOLOGY	1	23	14	27	20	1.429	4
28	JOURNAL OF METALLURGY AND MATERIALS SCIENCE	1	23	13	28	0	0.000	41
29	INTERNATIONAL JOURNAL ON COMPUTER SCIENCE AND ENGINEERING	1	23	12	29	6	0.500	15
30	PHYSICS EDUCATION	1	23	12	29	0	0.000	41
31	JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): CIVIL ENGINEERING DIVISION BOARD	1	23	11	31	2	0.182	27
32	JOURNAL ON FUTURE ENGINEERING AND TECHNOLOGY	1	23	11	31	0	0.000	41
33	INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY	1	23	10	33	9	0.900	7
34	INTERNATIONAL JOURNAL OF MATERIALS SCIENCES	1	23	10	33	0	0.000	41
35	ASIAN JOURNAL OF EXPERIMENTAL SCIENCES	1	23	9	35	29	3.222	1
36	IETE JOURNAL OF EDUCATION	1	23	9	35	1	0.111	33
37	INDIAN JOURNAL OF CHEMISTRY SECTION B - ORGANIC INCLUDING MEDICINAL	1	23	9	35	9	1.000	5
38	INDIAN JOURNAL OF FIBRE & TEXTILE RESEARCH	1	23	9	35	5	0.556	14
39	INDIAN CONCRETE JOURNAL (THE)	1	23	8	39	7	0.875	8

SN	Journal	Number of NITs		Articles		Citations		Rank Citation /Paper
		Nos	Rank	Nos	Rank	Nos	Citation /Paper	
40	INTERNATIONAL JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES	1	23	8	39	13	1.625	2
41	PRODUCTIVITY	1	23	8	39	0	0.000	41
42	IETE JOURNAL OF RESEARCH	1	23	7	42	0	0.000	41
43	INDIAN CHEMICAL ENGINEER	1	23	7	42	0	0.000	41
44	INDIAN JOURNAL OF CHEMISTRY - SECTION A: INORGANIC, BIO-INORGANIC, PHYSICAL, THEORETICAL & ANALYTICAL	1	23	7	42	0	0.000	41
45	INTERNATIONAL JOURNAL OF APPLIED MATHEMATICAL ANALYSIS AND APPLICATIONS	1	23	7	42	2	0.286	22
46	INTERNATIONAL JOURNAL OF CIVIL & STRUCTURAL ENGINEERING	1	23	7	42	0	0.000	41
47	INTERNATIONAL REVIEW OF PURE & APPLIED MATHEMATICS	1	23	7	42	0	0.000	41
48	JOURNAL OF INDIAN ACADEMY OF MATHEMATICS (THE)	1	23	7	42	0	0.000	41
49	JOURNAL OF OPTICS	1	23	7	42	1	0.143	29
50	JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): MINING ENGINEERING DIVISION BOARD	1	23	7	42	1	0.143	29
51	JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): SERIES C - MECHANICAL, PRODUCTION, AEROSPACE AND MARINE ENGINEERING	1	23	7	42	1	0.143	29
52	JOURNAL OF THE TEXTILE ASSOCIATION	1	23	7	42	0	0.000	41
53	NATIONAL ACADEMY SCIENCE LETTERS	1	23	7	42	3	0.429	16
54	RESEARCH JOURNAL OF ENGINEERING AND TECHNOLOGY	1	23	7	42	0	0.000	41
55	THE CRITERION: AN INTERNATIONAL JOURNAL IN ENGLISH	1	23	7	42	0	0.000	41
56	E-JOURNAL OF CHEMISTRY	1	23	6	56	9	1.500	3
57	JOURNAL OF POLYMER MATERIALS	1	23	6	56	6	1.000	5

Table 5.2.6: Subject-wise NITs' Contribution, Number of Papers and Citations				
SN	**Subjects**	**NITs**	**Articles**	**Citations**
1	Engineering Science and Technology	BRANIT Jalandhar	54	10
		MANIT Bhopal	156	41
		MNIT Jaipur	68	10
		MNNIT Allahabad	57	9
		NIT Agartala	21	3
		NIT Calicut	108	29
		NIT Durgapur	79	27
		NIT Hamirpur	76	9
		NIT Jamshedpur	38	3
		NIT Karnataka	139	24
		NIT Kurukshetra	133	26
		NIT Patna	11	1
		NIT Raipur	57	5
		NIT Rourkela	134	30
		NIT Silchar	26	0
		NIT Srinagar	18	2
		NIT Tiruchirappalli	163	40
		NIT Warangal	109	19
		SVNIT Surat	131	7
		VNIT Nagpur	158	23
	Total	**20**	**1736**	**318**
2	Chemistry	BRANIT Jalandhar	29	4
		MANIT Bhopal	47	10
		MNIT Jaipur	28	3
		MNNIT Allahabad	24	7
		NIT Agartala	11	0
		NIT Durgapur	41	22
		NIT Hamirpur	18	21
		NIT Karnataka	38	47
		NIT Kurukshetra	44	23
		NIT Raipur	18	1
		NIT Rourkela	35	3
		NIT Tiruchirappalli	47	28
		NIT Warangal	57	19
		SVNIT Surat	32	7
		VNIT Nagpur	14	0
	Total	**15**	**483**	**195**

SN	Subjects	NITs	Articles	Citations
3	Material Science	MANIT Bhopal	11	1
		MNNIT Allahabad	14	9
		NIT Hamirpur	19	25
		NIT Jamshedpur	15	0
		NIT Karnataka	40	8
		NIT Kurukshetra	17	0
		NIT Raipur	26	4
		NIT Rourkela	84	30
		NIT Tiruchirappalli	24	7
		NIT Warangal	21	2
		SVNIT Surat	13	7
		VNIT Nagpur	36	3
	Total	**12**	**320**	**96**
4	Computer Science and Technology	MANIT Bhopal	28	6
		MNNIT Allahabad	18	3
		NIT Durgapur	21	4
		NIT Hamirpur	15	4
		NIT Karnataka	24	0
		NIT Kurukshetra	22	7
		NIT Rourkela	16	0
		NIT Tiruchirappalli	17	0
		SVNIT Surat	11	2
	Total	**9**	**192**	**28**
5	Environmental Science	BRANIT Jalandhar	11	1
		MANIT Bhopal	21	6
		MNIT Jaipur	26	3
		MNNIT Allahabad	12	0
		NIT Durgapur	12	7
		NIT Karnataka	18	1
		NIT Kurukshetra	14	5
		NIT Rourkela	19	17
		NIT Tiruchirappalli	19	8
		SVNIT Surat	10	1
		VNIT Nagpur	21	12
	Total	**11**	**183**	**61**

SN	Subjects	NITs	Articles	Citations
6	Earth and Geological Science	NIT Karnataka	36	3
		NIT Kurukshetra	11	0
		NIT Raipur	26	5
		NIT Rourkela	63	24
		VNIT Nagpur	31	5
	Total	**5**	**167**	**37**
7	General Science and Technology	BRANIT Jalandhar	10	0
		MANIT Bhopal	30	40
		MNNIT Allahabad	19	7
		NIT Calicut	11	3
		NIT Karnataka	10	4
		NIT Kurukshetra	19	7
		NIT Rourkela	16	8
		NIT Tiruchirappalli	19	6
		SVNIT Surat	14	4
	Total	**9**	**148**	**79**
8	Physics	BRANIT Jalandhar	12	3
		MNIT Jaipur	16	1
		NIT Durgapur	29	15
		NIT Hamirpur	11	2
		NIT Kurukshetra	32	19
		NIT Rourkela	19	7
		NIT Warangal	14	1
	Total	**7**	**133**	**48**
9	Biological Science	MANIT Bhopal	12	1
		MNIT Jaipur	12	1
		MNNIT Allahabad	12	1
		NIT Durgapur	13	3
		NIT Karnataka	10	2
		NIT Rourkela	16	12
		NIT Tiruchirappalli	12	8
	Total	**7**	**87**	**28**
10	Mathematics	NIT Durgapur	11	10
		NIT Kurukshetra	14	6
		NIT Warangal	28	2
		SVNIT Surat	10	2
	Total	**4**	**63**	**20**

SN	Subjects	NITs	Articles	Citations
11	Statistics	NIT Durgapur	10	10
		NIT Kurukshetra	13	6
		NIT Warangal	28	2
		SVNIT Surat	10	2
	Total	**4**	**61**	**20**
12	Education	NIT Durgapur	15	1
		NIT Kurukshetra	10	3
		NIT Warangal	14	1
	Total	**3**	**39**	**5**
13	Energy and Fuel Science	NIT Karnataka	14	0
		NIT Rourkela	19	14
	Total	**2**	**33**	**14**
SN	**Subjects**	**NITs**	**Articles**	**Citations**
14	Management	NIT Kurukshetra	22	5
		NIT Tiruchirappalli	10	0
	Total	**2**	**32**	**5**
15	Pharmacology and Pharmaceutical Science	NIT Rourkela	32	29
	Total	**1**	**32**	**29**
16	Textile	BRANIT Jalandhar	22	5
	Total	**1**	**22**	**5**
17	Water	VNIT Nagpur	21	1
	Total	**1**	**21**	**1**
18	Library and Information Science	NIT Karnataka	17	0
	Total	**1**	**17**	**0**
19	Pollution	MNIT Jaipur	15	1
	Total	**1**	**15**	**1**
20	Health Science	NIT Rourkela	12	2
	Total	**1**	**12**	**2**
21	Arts and Humanities	NIT Tiruchirappalli	11	5
	Total	**1**	**11**	**5**

Table 5.2.7: Subject-wise Number of NITs Contribution								
SN	Subjects	Number of NITs		Articles		Citations		Rank Citation /Paper
		Nos	Rank	Nos	Rank	Nos	Citation /Paper	
1	Engineering Science and Technology	20	1	1736	1	318	0.183	14
2	Chemistry	15	2	483	2	195	0.404	5
3	Material Science	12	3	320	3	96	0.300	11
4	Environmental Science	11	4	183	5	61	0.333	7
5	Computer Science and Technology	9	5	192	4	28	0.146	17
6	General Science and Technology	9	5	148	7	79	0.534	2
7	Physics	7	7	133	8	48	0.361	6
8	Biological Science	7	7	87	9	28	0.322	9
9	Earth and Geological Science	5	9	167	6	37	0.222	13
10	Mathematics	4	10	63	10	20	0.317	10
11	Statistics	4	10	61	11	20	0.328	8
12	Education	3	12	39	12	5	0.128	18
13	Energy and Fuel Science	2	13	33	13	14	0.424	4
14	Management	2	13	32	14	5	0.156	16
15	Pharmacology and Pharmaceutical Science	1	15	32	14	29	0.906	1
16	Textile	1	15	22	16	5	0.227	12
17	Water	1	15	21	17	1	0.048	20
18	Library and Information Science	1	15	17	18	0	0.000	21
19	Pollution	1	15	15	19	1	0.067	19
20	Health Science	1	15	12	20	2	0.167	15
21	Arts and Humanities	1	15	11	21	5	0.455	3

Table 5.2.8: Name of NITs which have not Published Papers in Indian Journals		
S.No.	Name of NITs	Establishment Year
1	NIT Andhra Pradesh	2015
2	NIT Meghalaya	2010
3	NIT Mizoram	2010
4	NIT Uttarakhand	2010

5.3. Indian Institutes of Management (IIMs)

Indian Institutes of Management (IIMs) are a group of 20 institutes of management education and research in India. Primarily, they offer postgraduate and doctoral level education programmes and their level of education, teaching and learning is considered of high value and standard among the institutes of management category. The establishment of IIMs was initiated by Pt. Jawaharlal Nehru, the first Prime Minister of India based on the recommendation of the Planning Commission of India. IIMs are registered as societies under the society's registration Act 1860. Each IIM is autonomous and exercises independent control over its day-to-day operations. However, the administration of all IIMs and the overall strategy of IIMs are overseen by the IIM council. The IIM Council is headed by HRD Minister of India. IIMs are the Business schools or colleges or institutes, which are conducting courses on business administration and management. These are either autonomous or would have affiliated to a university. The prominence of a business school is purely based on the quality of education, faculty, campus placement facility etc. The top business schools in the country such as IIMs and ISB are always making headlines, campus placement and salary offers. This clearly shows that importance of excellence in education and faculty of business schools. Though business and management are integral part of our day to day involvement in various activities,out having formal education programme but in fact business and management as a predominant concept have gained importance since globalization, liberalization and open market policies are in vogue. In India business and management schools started from early 60's but their mushroom growth is from 1990's onwards. This may be due to the fact that from 1991, India opened its doors to world market and thus India's globalization began. After this, buseness establishments felt a need to have high quality managers to sustain and compete in world market which lead to surge of IIMs and other business schools in India. Basically, their emergence and growth is based on demand and supply principle. However, now many business and management schools are on the verge of their closer. The reasons thereof seem to be two, viz. low quality education, and saturation level of requirement from business establishments, which resulting unemployment for the students of business and management qualification from other than IIMs.

In order to analyze the research performance of IIMs, the required data is extracted from ICI database and organized that into Tables based on different parameters. Tablea are self-explanatory to understand the contents and interpret the data as information for a common man.

Table: 5.3.1 lists IIMs research papers productivity, Citations and Citation/Paper. IIM Ahmedabad stands at 1st position, 202 research papers followed by IIM Kolklata, 121 papers; IIM Lucknow, 104 papers; IIM Bangalore, 91 papers; IIM Kozhikode, 69 papers; IIM Indore, 63 papers; IIM Rohtak, 11 papers; IIM Ranchi,

11 papers; IIM Raipur, 9 papers and rest less than 9 papers. It seems that in India IIMs bent of mind or their field orientation is relative to other subject areas are less research papers producing.

Table: 5.3.2. Portrays the research papers productivity of top 100 authors of IIMs, and according to this table fist 4 positions in rank order are occupied by IIM Ahemedabad - namely 'Dholakia Ravindra H', 18 articles is top productive author followed by 'Singh Sukhpal, 14 articles', Sharma Vijay Paul, 10 articles; Singh Manjari, 8 articles; Pal Parthapratim, 8 articles from IIM Kolkata; Singh Shailendra, 8 articles from IIM Lucknow and so on.

Table: 5.3.3. In top 100 IIMs authors; IIM wise number of authors, 26 authors is of IIM Ahmedabad, 34.29% contribution share to the total of 100 top author's papers is at 1st position among all 13 contributing IIMs, followed by IIM Kolkata, 20 authors & 20.74% papers share; IIM Lucknow, 20 authors & 18.44% papers share; IIM Bangalore, 16 authors & 11.81% papers share; IIM Kozhikode, 12 authors & 10.08% share of papers; IIM Indore, 5 authors & 3.74% papers share; and IIM Ranchi and other 05 IIMs have 01 author from each and less than 1% papers share to total of 100 authors contribution.

Table 5.3.4 lists top 100 journals wherein IIMs have published papers, among these 100 top journals 'Economic and Political Weekly' is at number 1 position, 44 papers from IIM Ahmedabad followed by VIKALPA: Journal for Decision Makers, 41 papers from IIM Ahmedabad; Economic and Political Weekly, 30 articles from IIM Kolkata, etc.

Table: 5.3.5. Shows the number of IIMs published in top 100 journals and accordingly VIKALPA: Journal for Decision Makers stands at 1st position, 10 IIMs publications; followed by' Decision', 9 IIMs articles/publications; 'Productivity', 8 IIMs articles/publications; Indian Journal of Industrial Relations', 7 IIMs publications/articles, etc.

Table: 5.3.6. Shows subject wise quantum of research papers and accordingly focused subject areas of IIMs. As per quantum of papers published, *'Management'* as a subject stands at 1st position followed by '*Social Science';' Business and Marketing'; 'Economics'; 'Mathematics'; 'Statistic's* and rest of the subject areas shows fringe contribution. IIMs are not contributed in all subjects' categories of ICI, their area of study and research seems limited to few areas only.

Table: 5.3.7. It shows subject wise number of IIMs contribution and accordingly, 'Management' as a subject is at 1st rank, contribution from 13 IIMs and it also stands at 1st rank, 275 articles. In case of

Citations/paper, 'General Science and Technology' as a subject stands at 1st rank scoring 2.444 citations per paper, this subject category has contribution from 6 IIMs only.

Table: 5.3.8. A list of 7 IIMs names which did not produce a single paper in Indian journals. Namely they are IIM Nagpur, IIM Visakhapatnam, IIM Bodh Gaya, IIM Amritsar, IIM Sambalpur, IIM Sirmaur, and IIM Jammu.In fact relatively these IIMs are new and need gestation period to start scholarly activity of research publications. Narmally new institutions need 12 to 15 years gestation period to grow and get mature for visible scholarly output.

Table 5.3.1: Rank Order of IIMs Research Productivity: Based on Articles, Citations and C/P								
SN	**INSTITUTE**	**Estd. Year**	**Article**	**Rank A**	**Citation**	**Rank C**	**C/P**	**Rank C/P**
1	Indian Institute of Management Ahmedabad (IIM Ahmedabad)	1961	202	**1**	124	**1**	0.614	**1**
2	Indian Institute of Management Calcutta (IIM Calcutta)	1961	121	**2**	41	**3**	0.339	**6**
3	Indian Institute of Management Lucknow (IIM Lucknow)	1984	104	**3**	58	**2**	0.558	**2**
4	Indian Institute of Management Bangalore (IIM Bangalore)	1973	91	**4**	35	**4**	0.385	**5**
5	Indian Institute of Management Kozhikode (IIM Kozhikode)	1996	69	**5**	34	**5**	0.493	**4**
6	Indian Institute of Management Indore (IIM Indore)	1996	63	**6**	19	**6**	0.302	**7**
7	Indian Institute of Management Rohtak (IIM Rohtak)	2009	11	**7**	6	**7**	0.545	**3**
8	Indian Institute of Management Ranchi (IIM Ranchi)	2010	11	**7**	0	**11**	0.000	**11**
9	Indian Institute of Management Raipur (IIM Raipur)	2010	9	**9**	2	**8**	0.222	**8**
10	Indian Institute of Management Kashipur (IIM Kashipur)	2011	6	**10**	1	**9**	0.167	**9**
11	Indian Institute of Management Udaipur (IIM Udaipur)	2011	6	**10**	1	**9**	0.167	**9**
12	Indian Institute of Management Shillong (IIM Shillong)	2007	5	**12**	0	**11**	0.000	**11**
13	Indian Institute of Management Tiruchirappalli (IIM Tiruchirappalli)	2011	5	**12**	0	**11**	0.000	**11**

Legend: A = Articles; C = Citations; C/P = Citations/Paper

Table 5.3.2: Rank Order of Top 100 Authors of IIMs: Based on Number of Articles, Citations and Citations/Paper

SN	Authors	IIMs	Article	Rank A	Citation	Rank C	C/P	Rank C/P
1	Dholakia Ravindra H	IIM Ahmedabad	18	**1**	17	**2**	0.944	**40**
2	Singh Sukhpal	IIM Ahmedabad	14	**2**	9	**4**	0.643	**45**
3	Sharma Vijay Paul	IIM Ahmedabad	10	**3**	9	**4**	0.900	**41**
4	Singh Manjari	IIM Ahmedabad	8	**4**	4	**19**	0.500	**46**
5	Pal Parthapratim	IIM Calcutta	8	**4**	11	**3**	1.375	**27**
6	Singh Shailendra	IIM Lucknow	8	**4**	4	**19**	0.500	**46**
7	Ali Jabir	IIM Lucknow	7	**7**	7	**8**	1.000	**29**
8	Vohra Neharika	IIM Ahmedabad	7	**7**	2	**40**	0.286	**63**
9	Ray Sougata	IIM Calcutta	6	**9**	3	**28**	0.500	**46**
10	Thakur Manish K	IIM Calcutta	6	**9**	2	**40**	0.333	**56**
11	D'Souza Errol	IIM Ahmedabad	6	**9**	3	**28**	0.500	**46**
12	Basu Sumanta	IIM Calcutta	5	**12**	0	**70**	0.000	**70**
13	Rai Himanshu	IIM Lucknow	5	**12**	0	**70**	0.000	**70**
14	Gangopadhyay Kausik	IIM Kozhikode	5	**12**	1	**53**	0.200	**67**
15	Mohan T T Ram	IIM Ahmedabad	5	**12**	1	**53**	0.200	**67**
16	Mitra Subrata	IIM Calcutta	5	**12**	0	**70**	0.000	**70**
17	Pati Rupesh Kumar	IIM Kozhikode	5	**12**	1	**53**	0.200	**67**
18	Kapoor Sanjeev	IIM Lucknow	4	**18**	2	**40**	0.500	**46**
19	Joseph Jerome	IIM Ahmedabad	4	**18**	1	**53**	0.250	**64**
20	Sahadevan K G	IIM Lucknow	4	**18**	6	**10**	1.500	**16**
21	Chand Vijaya Sherry	IIM Ahmedabad	4	**18**	6	**10**	1.500	**16**
22	Balasubramanian N	IIM Bangalore	4	**18**	4	**19**	1.000	**29**
23	Chakrabarti Bhaskar	IIM Calcutta	4	**18**	0	**70**	0.000	**70**
24	D'Cruz Premilla	IIM Ahmedabad	4	**18**	1	**53**	0.250	**64**
25	Kumar S S S	IIM Kozhikode	4	**18**	7	**8**	1.750	**14**
26	Chandra Nirmal Kumar	IIM Calcutta	4	**18**	3	**28**	0.750	**42**
27	Salwan Prashant	IIM Indore	4	**18**	0	**70**	0.000	**70**
28	Nair Sthanu R	IIM Kozhikode	4	**18**	6	**10**	1.500	**16**
29	Ghosh Diptesh	IIM Ahmedabad	4	**18**	1	**53**	0.250	**64**
30	Banerjee Arindam	IIM Ahmedabad	3	**30**	1	**53**	0.333	**56**
31	Seshadri D V R	IIM Bangalore	3	**30**	2	**40**	0.667	**43**
32	Suchitra J Y	IIM Bangalore	3	**30**	0	**70**	0.000	**70**
33	Tomar Avantika	IIM Calcutta	3	**30**	0	**70**	0.000	**70**
34	Pande Neerja	IIM Lucknow	3	**30**	0	**70**	0.000	**70**
35	Bhattacharya Kaushik	IIM Lucknow	3	**30**	0	**70**	0.000	**70**
36	Jammulamadaka Nimruji	IIM Calcutta	3	**30**	0	**70**	0.000	**70**
37	Pati Surya Prakash	IIM Lucknow	3	**30**	8	**6**	2.667	**3**
38	Ramesh G	IIM Bangalore	3	**30**	0	**70**	0.000	**70**
39	Kumar Pankaj	IIM Lucknow	3	**30**	8	**6**	2.667	**3**

SN	Authors	IIMs	Articles	Rank A	Citations	Rank C	C/P	Rank C/P
40	Swaminathan Hema	IIM Bangalore	3	**30**	0	**70**	0.000	**70**
41	Banerjee Tathagata	IIM Ahmedabad	3	**30**	1	**53**	0.333	**56**
42	Singh Ramendra	IIM Calcutta	3	**30**	0	**70**	0.000	**70**
43	Bandyopadhyay Jayanta	IIM Calcutta	3	**30**	1	**53**	0.333	**56**
44	Khanna Sushil	IIM Calcutta	3	**30**	0	**70**	0.000	**70**
45	Mishra Bijaya	IIM Ranchi	3	**30**	0	**70**	0.000	**70**
46	Noronha Ernesto	IIM Ahmedabad	3	**30**	1	**53**	0.333	**56**
47	Kumar T Krishna	IIM Bangalore	3	**30**	5	**15**	1.667	**15**
48	Bharadwaj Apoorva	IIM Calcutta	3	**30**	0	**70**	0.000	**70**
49	Jadon Gopal Singh	IIM Indore	3	**30**	3	**28**	1.000	**29**
50	Raina R L	IIM Lucknow	3	**30**	0	**70**	0.000	**70**
51	Chattopadhyay Raghabendra	IIM Calcutta	3	**30**	0	**70**	0.000	**70**
52	Kumar Sushil	IIM Lucknow	3	**30**	0	**70**	0.000	**70**
53	Sen Gita	IIM Bangalore	3	**30**	2	**40**	0.667	**43**
54	Gandhi Vasant P	IIM Ahmedabad	3	**30**	1	**53**	0.333	**56**
55	Kaul Asha	IIM Ahmedabad	3	**30**	1	**53**	0.333	**56**
56	Chaudhuri Sudip	IIM Calcutta	3	**30**	4	**19**	1.333	**28**
57	Lahoti Rahul	IIM Bangalore	3	**30**	0	**70**	0.000	**70**
58	Eapen Leena Mary	IIM Kozhikode	3	**30**	6	**10**	2.000	**8**
59	Thaker Keyur	IIM Indore	2	**59**	0	**70**	0.000	**70**
60	Sinha Anup	IIM Calcutta	2	**59**	0	**70**	0.000	**70**
61	Banerjee Pradip	IIM Indore	2	**59**	0	**70**	0.000	**70**
62	Chaudhuri Dipayan Datta	IIM Indore	2	**59**	0	**70**	0.000	**70**
63	Pati Surya Prakash	IIM Kozhikode	2	**59**	1	**53**	0.500	**46**
64	Pillai R Radhakrishna	IIM Kozhikode	2	**59**	0	**70**	0.000	**70**
65	Sensarma Rudra	IIM Kozhikode	2	**59**	0	**70**	0.000	**70**
66	Patibandla Murali	IIM Bangalore	2	**59**	0	**70**	0.000	**70**
67	Venkataraman Madalasa	IIM Bangalore	2	**59**	1	**53**	0.500	**46**
68	Bhatta C Panduranga	IIM Calcutta	2	**59**	2	**40**	1.000	**29**
69	Thaker Hrima	IIM Ahmedabad	2	**59**	4	**19**	2.000	**8**
70	Goutam Prodyumna	IIM Bangalore	2	**59**	0	**70**	0.000	**70**
71	Chakraborty Madhumita	IIM Lucknow	2	**59**	3	**28**	1.500	**16**
72	Garg Gaurav	IIM Lucknow	2	**59**	0	**70**	0.000	**70**
73	Dhiman Amit	IIM Ahmedabad	2	**59**	1	**53**	0.500	**46**
74	Pal Debdatta	IIM Ahmedabad	2	**59**	0	**70**	0.000	**70**
75	Bhattacharya Abhijit	IIM Lucknow	2	**59**	4	**19**	2.000	**8**
76	Karmakar Madhusudan	IIM Lucknow	2	**59**	3	**28**	1.500	**16**
77	Ganguly Shantanu	IIM Lucknow	2	**59**	2	**40**	1.000	**29**
78	Srinivasan Vasanthi	IIM Bangalore	2	**59**	0	**70**	0.000	**70**

SN	Authors	IIMs	Articles	Rank A	Citations	Rank C	C/P	Rank C/P
79	Basu Debarati	IIM Calcutta	2	**59**	6	**10**	3.000	**2**
80	Dutta Goutam	IIM Ahmedabad	2	**59**	3	**28**	1.500	**16**
81	Damodaran A	IIM Bangalore	2	**59**	1	**53**	0.500	**46**
82	Mahadevan B	IIM Bangalore	2	**59**	5	**15**	2.500	**5**
83	Mandal Kalyan Sankar	IIM Calcutta	2	**59**	1	**53**	0.500	**46**
84	Ramakrishnan K	IIM Lucknow	2	**59**	3	**28**	1.500	**16**
85	Garg Ajay Kumar	IIM Lucknow	2	**59**	4	**19**	2.000	**8**
86	Sinha Sidharth	IIM Ahmedabad	2	**59**	2	**40**	1.000	**29**
87	Kaul Subhashini	IIM Ahmedabad	2	**59**	5	**15**	2.500	**5**
88	Bhattacharya Abhijit	IIM Lucknow	2	**59**	4	**19**	2.000	**8**
89	Reddy V Nagi	IIM Calcutta	2	**59**	2	**40**	1.000	**29**
90	Balooni Kulbhushan	IIM Kozhikode	2	**59**	3	**28**	1.500	**16**
91	Basu Sankarshan	IIM Bangalore	2	**59**	2	**40**	1.000	**29**
92	Shukla P R	IIM Ahmedabad	2	**59**	21	**1**	10.500	**1**
93	Sahgal Punam	IIM Lucknow	2	**59**	4	**19**	2.000	**8**
94	Basant Rakesh	IIM Ahmedabad	2	**59**	2	**40**	1.000	**29**
95	Nandakumar M K	IIM Kozhikode	2	**59**	2	**40**	1.000	**29**
96	Purkayastha Saptarshi	IIM Kozhikode	2	**59**	2	**40**	1.000	**29**
97	Desai Bhupat M	IIM Ahmedabad	2	**59**	3	**28**	1.500	**16**
98	Mahadevan B	IIM Bangalore	2	**59**	5	**15**	2.500	**5**
99	Dutta Goutam	IIM Ahmedabad	2	**59**	3	**28**	1.500	**16**
100	Balooni Kulbhushan	IIM Kozhikode	2	**59**	3	**28**	1.500	**16**

Legend: **A = Articles; C = Citations; C/P = Citation/Paper**

Table 5.3.3: IIM wise Number of Authors in Top 100 Author's of IIMs				
SN	**IIMs**	**Authors**	**Number of Authors**	**IIM wise % of Top Authors Share in 100 Authors Papers**
1	**IIM Ahmedabad**	Banerjee Arindam Banerjee Tathagata Basant Rakesh Chand Vijaya Sherry D'Cruz Premilla Desai Bhupat M Dhiman Amit Dholakia Ravindra H D'Souza Errol Dutta Goutam Gandhi Vasant P Ghosh Diptesh Joseph Jerome Kaul Asha Kaul Subhashini Mohan T T Ram Noronha Ernesto Pal Debdatta Sharma Vijay Paul Shukla P R Singh Manjari Singh Sukhpal Sinha Sidharth Thaker Hrima Vohra Neharika	26	34.29
2	**IIM Calcutta**	Bandyopadhyay Jayanta Basu Debarati Basu Sumanta Bharadwaj Apoorva Bhatta C Panduranga Chakrabarti Bhaskar Chandra Nirmal Kumar Chattopadhyay Raghabendra Chaudhuri Sudip Jammulamadaka Nimruji Khanna Sushil Mandal Kalyan Sankar Mitra Subrata Pal Parthapratim Ray Sougata Reddy V Nagi Singh Ramendra Sinha Anup Thakur Manish K Tomar Avantika	20	20.74

SN	IIMs	AUTHORS	Number of Authors	IIM wise % of Top Authors Share in 100 Authors Papers
3	**IIM Lucknow**	Ali Jabir Bhattacharya Abhijit Bhattacharya Kaushik Chakraborty Madhumita Ganguly Shantanu Garg Ajay Kumar Garg Gaurav Kapoor Sanjeev Karmakar Madhusudan Kumar Pankaj Kumar Sushil Pande Neerja Pati Surya Prakash Rai Himanshu Raina R L Ramakrishnan K Sahadevan K G Sahgal Punam Singh Shailendra	20	18.44
4	**IIM Bangalore**	Balasubramanian N Basu Sankarshan Damodaran A Goutam Prodyumna Kumar T Krishna Lahoti Rahul Mahadevan B Patibandla Murali Ramesh G Sen Gita Seshadri D V R Srinivasan Vasanthi Suchitra J Y Swaminathan Hema Venkataraman Madalasa	16	11.81
5	**IIM Kozhikode**	Balooni Kulbhushan Eapen Leena Mary Gangopadhyay Kausik Kumar S S S Nair Sthanu R Nandakumar M K Pati Rupesh Kumar Pati Surya Prakash Pillai R Radhakrishna Purkayastha Saptarshi Sensarma Rudra	12	10.08
6	**IIM Indore**	Banerjee Pradip Chaudhuri Dipayan Datta Jadon Gopal Singh Salwan Prashant Thaker Keyur	5	3.74
7	**IIM Ranchi**	Mishra Bijaya	1	0.86

Table 5.3.4: Journal-wise IIMs' Contribution, Number of Papers and Citations				
SN	**Journal Name**	**IIMs**	**Article**	**Citation**
1	ECONOMIC AND POLITICAL WEEKLY	IIM Ahmedabad	44	33
		IIM Bangalore	30	10
		IIM Calcutta	30	19
		IIM Indore	2	0
		IIM Kozhikode	9	8
		IIM Lucknow	7	6
		IIM Rohtak	2	0
	Total	**7**	**124**	**76**
2	VIKALPA: JOURNAL FOR DECISION MAKERS	IIM Ahmedabad	41	23
		IIM Bangalore	16	5
		IIM Calcutta	7	3
		IIM Indore	5	8
		IIM Lucknow	9	11
		IIM Ranchi	2	0
	Total	**6**	**80**	**50**
3	INDIAN JOURNAL OF INDUSTRIAL RELATIONS	IIM Ahmedabad	8	2
		IIM Bangalore	4	2
		IIM Calcutta	4	0
		IIM Indore	5	2
		IIM Kozhikode	4	1
		IIM Lucknow	18	14
		IIM Ranchi	3	0
	Total	**7**	**46**	**21**
4	DECISION	IIM Ahmedabad	2	0
		IIM Calcutta	19	3
		IIM Indore	4	0
		IIM Kashipur	3	1
		IIM Kozhikode	5	9
		IIM Raipur	4	1
	Total	**6**	**37**	**14**
5	IIM KOZHIKODE SOCIETY AND MANAGEMENT REVIEW	IIM Bangalore	5	0
		IIM Calcutta	3	0
		IIM Kozhikode	16	2
	Total	**3**	**24**	**2**
6	GLOBAL BUSINESS REVIEW	IIM Ahmedabad	3	1
		IIM Calcutta	4	6
		IIM Indore	5	0
		IIM Kozhikode	2	2
		IIM Lucknow	5	4
	Total	**5**	**19**	**13**

SN	Journal Name	IIMs	Article	Citation
7	OPSEARCH	IIM Ahmedabad	3	1
		IIM Calcutta	9	0
		IIM Indore	2	0
		IIM Kozhikode	3	2
		IIM Lucknow	2	0
	Total	**5**	**19**	**3**
8	INDIAN JOURNAL OF AGRICULTURAL ECONOMICS	IIM Ahmedabad	10	4
		IIM Lucknow	4	2
	Total	**2**	**14**	**6**
9	INDIAN JOURNAL OF LABOUR ECONOMICS	IIM Ahmedabad	5	1
		IIM Bangalore	2	1
		IIM Calcutta	4	0
	Total	**3**	**11**	**2**
10	JOURNAL OF HUMAN VALUES	IIM Ahmedabad	4	2
		IIM Bangalore	2	2
		IIM Calcutta	4	4
	Total	**3**	**10**	**8**
11	JOURNAL OF EMERGING MARKET FINANCE	IIM Ahmedabad	3	3
		IIM Bangalore	3	2
		IIM Lucknow	3	3
	Total	**3**	**9**	**8**
12	MANAGEMENT AND LABOUR STUDIES	IIM Ahmedabad	4	0
		IIM Indore	2	0
		IIM Lucknow	3	0
	Total	**3**	**9**	**0**
13	PRODUCTIVITY	IIM Ahmedabad	3	1
		IIM Calcutta	3	0
		IIM Indore	3	0
	Total	**3**	**9**	**1**
14	VISION: THE JOURNAL OF BUSINESS PERSPECTIVE	IIM Ahmedabad	2	0
		IIM Bangalore	2	0
		IIM Lucknow	5	0
	Total	**3**	**9**	**0**
15	GLOBAL JOURNAL OF FLEXIBLE SYSTEMS MANAGEMENT	IIM Kozhikode	3	3
		IIM Rohtak	4	6
	Total	**2**	**7**	**9**
16	JOURNAL OF ENTERPRENEURSHIP (THE)	IIM Ahmedabad	7	8
	Total	**1**	**7**	**8**
17	INDIAN JOURNAL OF MARKETING	IIM Ahmedabad	3	0
		IIM Udaipur	3	1
	Total	**1**	**6**	**1**

SN	Journal Name	IIMs	Article	Citation
18	LBS JOURNAL OF MANAGEMENT & RESEARCH	IIM Lucknow	6	0
	Total	**1**	**6**	**0**
19	AGRICULTURAL ECONOMICS RESEARCH REVIEW	IIM Ahmedabad	2	1
		IIM Lucknow	3	2
	Total	**2**	**5**	**3**
20	CURRENT SCIENCE	IIM Ahmedabad	3	21
		IIM Kozhikode	2	0
	Total	**2**	**5**	**21**
21	PSYCHOLOGICAL STUDIES	IIM Ahmedabad	2	4
		IIM Lucknow	3	4
	Total	**2**	**5**	**8**
22	CALCUTTA STATISTICAL ASSOCIATION BULLETIN	IIM Ahmedabad	5	1
	Total	**1**	**5**	**1**
23	SOCIOLOGICAL BULLETIN	IIM Calcutta	5	2
	Total	1	**5**	**2**
24	INDIAN JOURNAL OF AGRICULTURAL MARKETING	IIM Ahmedabad	2	0
		IIM Lucknow	2	0
	Total	**2**	**4**	**0**
25	PEARL: JOURNAL OF LIBRARY & INFORMATION SCIENCE	IIM Indore	2	1
		IIM Raipur	2	0
	Total	**2**	**4**	**1**
26	JOURNAL OF INCOME & WEALTH (THE)	IIM Ahmedabad	4	1
	Total	**1**	**4**	**1**
27	INFORMATION STUDIES	IIM Lucknow	3	3
	Total	**1**	**3**	**3**
28	PARADIGM	IIM Ahmedabad	3	0
	Total	**1**	**3**	**0**
29	ABHIGYAN - QUEST FOR EXCELLENCE	IIM Bangalore	2	0
	Total	**1**	**2**	**0**
30	ARTHA VIJNANA	IIM Ahmedabad	2	0
	Total	**1**	**2**	**0**
31	ASIA PACIFIC BUSINESS REVIEW	IIM Lucknow	2	1
	Total	**1**	**2**	**1**
32	ASIAN JOURNAL OF MANAGEMENT	IIM Indore	2	0
	Total	**1**	**2**	**0**
33	ASIAN JOURNAL OF RESEARCH IN BUSINESS ECONOMICS AND MANAGEMENT	IIM Calcutta	2	0
	Total	**1**	**2**	**0**

	Journal Name	IIMs	Article	Citation
34	IIMS JOURNAL OF MANAGEMENT SCIENCE	IIM Kozhikode	2	0
	Total	**1**	**2**	**0**
35	INDIAN HIGHWAYS	IIM Ranchi	2	0
	Total	**1**	**2**	**0**
36	INDIAN JOURNAL OF AGRICULTURAL SCIENCES (THE)	IIM Lucknow	2	0
	Total	**1**	**2**	**0**
37	INDIAN JOURNAL OF TRAINING & DEVELOPMENT	IIM Lucknow	2	0
	Total	1	**2**	**0**
38	INDIAN JOURNAL OF TRANSPORT MANAGEMENT	IIM Bangalore	2	1
	Total	**1**	**2**	**1**
39	INTERNATIONAL JOURNAL OF RURAL MANAGEMENT	IIM Calcutta	2	0
	Total	**1**	**2**	**0**
40	INTERNATIONAL REVIEW OF FUZZY MATHEMATICS	IIM Lucknow	2	0
	Total	1	**2**	**0**
41	JOURNAL OF INCOME & WEALTH	IIM Indore	2	0
	Total	**1**	**2**	**0**
42	JOURNAL OF RURAL DEVELOPMENT	IIM Ahmedabad	2	4
	Total	**1**	**2**	**4**
43	JOURNAL ON MANAGEMENT	IIM Indore	2	0
	Total	**1**	**2**	**0**
44	MILLENNIAL ASIA	IIM Ahmedabad	2	0
	Total	**1**	**2**	**0**
45	ASIA PACIFIC BUSINESS REVIEW	IIM Lucknow	2	1
	Total	**1**	**2**	**1**
46	PRANJANA: THE JOURNAL OF MANAGEMENT AWARENESS	IIM Ahmedabad	2	0
	Total	**1**	**2**	**0**
47	REVIEW OF MARKET INTEGRATION	IIM Ahmedabad	2	1
	Total	**1**	**2**	**1**
48	SOUTH ASIA RESEARCH	IIM Lucknow	2	4
	Total	**1**	**2**	**4**

Table 5.3.5: Journal-wise Number of IIMs Contribution								
SN	Journal	Number of IIMs		Articles		Citations		Rank Citation /Paper
		Nos	Rank	Nos	Rank	Nos	Citation /Paper	
1	ECONOMIC AND POLITICAL WEEKLY	7	1	124	1	76	0.613	12
2	INDIAN JOURNAL OF INDUSTRIAL RELATIONS	7	1	80	2	50	0.625	11
3	VIKALPA: JOURNAL FOR DECISION MAKERS	6	3	46	3	21	0.457	18
4	DECISION	6	3	37	4	14	0.378	21
5	GLOBAL BUSINESS REVIEW	5	5	24	5	2	0.083	29
6	OPSEARCH	5	5	19	6	13	0.684	10
7	IIM KOZHIKODE SOCIETY AND MANAGEMENT REVIEW	3	7	19	6	3	0.158	27
8	INDIAN JOURNAL OF LABOUR ECONOMICS	3	7	14	8	6	0.429	19
9	JOURNAL OF HUMAN VALUES	3	7	11	9	2	0.182	25
10	JOURNAL OF EMERGING MARKET FINANCE	3	7	10	10	8	0.800	9
11	MANAGEMENT AND LABOUR STUDIES	3	7	9	11	8	0.889	8
12	PRODUCTIVITY	3	7	9	11	0	0.000	30
13	VISION: THE JOURNAL OF BUSINESS PERSPECTIVE	3	7	9	11	1	0.111	28
14	INDIAN JOURNAL OF AGRICULTURAL ECONOMICS	2	14	9	11	0	0.000	30
15	GLOBAL JOURNAL OF FLEXIBLE SYSTEMS MANAGEMENT	2	14	7	15	9	1.286	5
16	INDIAN JOURNAL OF MARKETING	2	14	7	15	8	1.143	6
17	AGRICULTURAL ECONOMICS RESEARCH REVIEW	2	14	6	17	1	0.167	26
18	CURRENT SCIENCE	2	14	6	17	0	0.000	30
19	PSYCHOLOGICAL STUDIES	2	14	5	19	3	0.600	13
20	INDIAN JOURNAL OF AGRICULTURAL MARKETING	2	14	5	19	21	4.200	1
21	PEARL: JOURNAL OF LIBRARY & INFORMATION SCIENCE	2	14	5	19	8	1.600	4
22	JOURNAL OF ENTERPRENEURSHIP (THE)	1	22	5	19	1	0.200	24
23	LBS JOURNAL OF MANAGEMENT & RESEARCH	1	22	5	19	2	0.400	20
24	CALCUTTA STATISTICAL ASSOCIATION BULLETIN	1	22	4	24	0	0.000	30
25	SOCIOLOGICAL BULLETIN	1	22	4	24	1	0.250	22
26	JOURNAL OF INCOME & WEALTH (THE)	1	22	4	24	1	0.250	22
27	INFORMATION STUDIES	1	22	3	27	3	1.000	7

SN	Journal	Number of IIMs		Articles		Citations		Rank Citation /Paper
		Nos	Rank	Nos	Rank	Nos	Citation /Paper	
28	PARADIGM	1	22	3	27	0	0.000	30
29	ABHIGYAN - QUEST FOR EXCELLENCE	1	22	2	29	0	0.000	30
30	ARTHA VIJNANA	1	22	2	29	0	0.000	30
31	ASIA PACIFIC BUSINESS REVIEW	1	22	2	29	1	0.500	14
32	ASIAN JOURNAL OF MANAGEMENT	1	22	2	29	0	0.000	30
33	ASIAN JOURNAL OF RESEARCH IN BUSINESS ECONOMICS AND MANAGEMENT	1	22	2	29	0	0.000	30
34	IIMS JOURNAL OF MANAGEMENT SCIENCE	1	22	2	29	0	0.000	30
35	INDIAN HIGHWAYS	1	22	2	29	0	0.000	30
36	INDIAN JOURNAL OF AGRICULTURAL SCIENCES (THE)	1	22	2	29	0	0.000	30
37	INDIAN JOURNAL OF TRAINING & DEVELOPMENT	1	22	2	29	0	0.000	30
38	INDIAN JOURNAL OF TRANSPORT MANAGEMENT	1	22	2	29	1	0.500	14
39	INTERNATIONAL JOURNAL OF RURAL MANAGEMENT	1	22	2	29	0	0.000	30
40	INTERNATIONAL REVIEW OF FUZZY MATHEMATICS	1	22	2	29	0	0.000	30
41	JOURNAL OF INCOME & WEALTH	1	22	2	29	0	0.000	30
42	JOURNAL OF RURAL DEVELOPMENT	1	22	2	29	4	2.000	2
43	JOURNAL ON MANAGEMENT	1	22	2	29	0	0.000	30
44	MILLENNIAL ASIA	1	22	2	29	0	0.000	30
45	ASIA PACIFIC BUSINESS REVIEW	1	22	2	29	1	0.500	14
46	PRANJANA: THE JOURNAL OF MANAGEMENT AWARENESS	1	22	2	29	0	0.000	30
47	REVIEW OF MARKET INTEGRATION	1	22	2	29	1	0.500	14
48	SOUTH ASIA RESEARCH	1	22	2	29	4	2.000	2

Table 5.3.6: Subject-wise IIMs' Contribution, Number of Papers and Citations				
SN	**Subjects**	**IIMs**	**Article**	**Citation**
	Management	IIM Ahmedabad	76	31
		IIM Bangalore	41	10
		IIM Calcutta	24	3
		IIM Indore	26	10
		IIM Kashipur	2	0
		IIM Kozhikode	31	6
		IIM Lucknow	55	29
		IIM Raipur	1	0
		IIM Ranchi	6	0
		IIM Rohtak	6	6
		IIM Shillong	3	0
		IIM Tiruchirappalli	2	0
		IIM Udaipur	2	0
1	**Total**	**13**	**275**	**95**
	Social Science	IIM Ahmedabad	68	37
		IIM Bangalore	43	14
		IIM Calcutta	73	28
		IIM Indore	15	0
		IIM Kashipur	4	1
		IIM Kozhikode	23	23
		IIM Lucknow	19	11
		IIM Raipur	5	2
		IIM Ranchi	2	0
		IIM Rohtak	3	0
		IIM Shillong	1	0
		IIM Udaipur	1	0
2	**Total**	**12**	**257**	**116**
	Business and Marketing	IIM Ahmedabad	25	13
		IIM Bangalore	14	5
		IIM Calcutta	10	8
		IIM Indore	10	0
		IIM Kashipur	1	0
		IIM Kozhikode	22	4
		IIM Lucknow	19	8
		IIM Raipur	2	1
		IIM Ranchi	1	0
		IIM Shillong	3	0
		IIM Tiruchirappalli	1	0
		IIM Udaipur	3	1
3	**Total**	**12**	**111**	**40**

SN	Subjects	IIMs	Article	Citation
	Economics	IIM Ahmedabad	40	15
		IIM Bangalore	4	4
		IIM Calcutta	6	2
		IIM Indore	7	0
		IIM Kashipur	1	0
		IIM Kozhikode	5	0
		IIM Lucknow	11	4
		IIM Tiruchirappalli	1	0
		IIM Udaipur	3	1
4	**Total**	**9**	**78**	**26**
	Mathematics	IIM Ahmedabad	10	2
		IIM Bangalore	4	0
		IIM Calcutta	11	1
		IIM Indore	3	0
		IIM Kozhikode	3	2
		IIM Lucknow	4	0
5	**Total**	**6**	**35**	**5**
	Statistics	IIM Ahmedabad	10	2
		IIM Bangalore	4	0
		IIM Calcutta	11	1
		IIM Indore	2	0
		IIM Kozhikode	3	2
		IIM Lucknow	2	0
6	**Total**	**6**	**32**	**5**
	Agriculture	IIM Ahmedabad	17	6
		IIM Indore	1	0
		IIM Kozhikode	1	0
		IIM Lucknow	11	4
		IIM Rohtak	1	0
7	**Total**	**5**	**31**	**10**
	Engineering Science and Technology	IIM Ahmedabad	5	1
		IIM Bangalore	3	1
		IIM Calcutta	4	0
		IIM Indore	3	0
		IIM Kozhikode	2	0
		IIM Lucknow	2	0
		IIM Ranchi	3	0
		IIM Tiruchirappalli	1	0
8	**Total**	**8**	**23**	**2**

SN	Subjects	IIMs	Article	Citation
	Library and Information Science	IIM Ahmedabad	2	4
		IIM Bangalore	1	0
		IIM Calcutta	2	0
		IIM Indore	6	9
		IIM Kozhikode	2	1
		IIM Lucknow	7	6
		IIM Raipur	2	0
		IIM Tiruchirappalli	1	0
9	**Total**	**8**	**23**	**20**
	Health Science	IIM Ahmedabad	6	6
		IIM Bangalore	4	7
		IIM Calcutta	2	1
		IIM Kozhikode	1	0
10	**Total**	**4**	**13**	**14**
	Others	IIM Ahmedabad	2	0
		IIM Bangalore	1	0
		IIM Calcutta	1	0
		IIM Indore	2	0
		IIM Lucknow	4	4
		IIM Rohtak	1	0
		IIM Udaipur	1	0
11	**Total**	**7**	**12**	**4**
	Rural development	IIM Ahmedabad	2	4
		IIM Bangalore	1	1
		IIM Calcutta	3	0
		IIM Indore	1	0
		IIM Kozhikode	1	0
		IIM Lucknow	3	0
		IIM Ranchi	1	0
12	**Total**	**7**	**12**	**5**
	Education	IIM Ahmedabad	3	1
		IIM Bangalore	1	0
		IIM Calcutta	1	0
		IIM Indore	1	0
		IIM Kozhikode	1	0
		IIM Lucknow	2	0
		IIM Udaipur	1	0
13	**Total**	**7**	**10**	**1**

SN	Subjects	IIMs	Article	Citation
	General Science and Technology	IIM Ahmedabad	3	21
		IIM Bangalore	1	1
		IIM Calcutta	1	0
		IIM Indore	1	0
		IIM Kozhikode	2	0
		IIM Tiruchirappalli	1	0
14	**Total**	**6**	**9**	**22**
	Psychology	IIM Ahmedabad	3	4
		IIM Lucknow	3	4
		IIM Raipur	1	0
		IIM Shillong	1	0
15	**Total**	**4**	**8**	**8**
	Arts and Humanities	IIM Calcutta	1	0
		IIM Indore	2	0
		IIM Lucknow	1	0
		IIM Raipur	1	1
16	**Total**	**4**	**5**	**1**
	Biological Science	IIM Ahmedabad	3	1
17	**Total**	**1**	**3**	**1**
	Computer Science and Technology	IIM Calcutta	2	0
		IIM Kozhikode	1	0
18	**Total**	**2**	**3**	**0**
	Environmental Science	IIM Ahmedabad	1	0
		IIM Calcutta	1	0
19	**Total**	**2**	**2**	**0**
	Law	IIM Ahmedabad	1	0
		IIM Indore	1	0
20	**Total**	**2**	**2**	**0**
	Population Studies	IIM Indore	1	0
		IIM Kozhikode	1	0
21	**Total**	**2**	**2**	**0**
	Anthropology	IIM Calcutta	1	0
22	**Total**	**1**	**1**	**0**
	Energy and Fuel Science	IIM Bangalore	1	0
23	**Total**	**1**	**1**	**0**
	Forestry	IIM Ahmedabad	1	0
24	**Total**	**1**	**1**	**0**
	Telecommunication	IIM Calcutta	1	0
25	**Total**	**1**	**1**	**0**

Table 5.3.7: Subject-wise Number of IIMs Contribution								
SN	Subjects	Number of IIMs		Articles		Citations		Rank Citation /Paper
		Nos	Rank	Nos	Rank	Nos	Citation /Paper	
1	Management	13	1	275	1	95	0.345	8
2	Social Science	12	2	257	2	116	0.451	5
3	Business and Marketing	12	2	111	3	40	0.360	7
4	Economics	9	4	78	4	26	0.333	9
5	Mathematics	6	10	35	5	5	0.143	15
6	Statistics	6	10	32	6	5	0.156	14
7	Agriculture	5	13	31	7	10	0.323	12
8	Engineering Science and Technology	8	5	23	8	2	0.087	17
9	Library and Information Science	8	5	23	8	20	0.870	4
10	Health Science	4	14	13	10	14	1.077	2
11	Others	7	7	12	11	4	0.333	9
12	Rural development	7	7	12	11	5	0.417	6
13	Education	7	7	10	13	1	0.100	16
14	General Science and Technology	6	10	9	14	22	2.444	1
15	Psychology	4	14	8	15	8	1.000	3
16	Arts and Humanities	4	14	5	16	1	0.200	13
17	Biological Science	1	24	3	17	1	0.333	9
18	Computer Science and Technology	2	17	3	17	0	0.000	18
19	Environmental Science	2	17	2	19	0	0.000	18
20	Law	2	17	2	19	0	0.000	18
21	Population Studies	2	17	2	19	0	0.000	18
22	Anthropology	2	17	1	22	0	0.000	18
23	Energy and Fuel Science	2	17	1	22	0	0.000	18
24	Forestry	2	17	1	22	0	0.000	18
25	Telecommunication	1	24	1	22	0	0.000	18

Table 5.3.8: IIMs which did not Produce Any Paper		
S.No.	Institutes	Estt.Year
1	Indian Institute of Management Nagpur	2015
2	Indian Institute of Management Visakhapatnam	2015
3	Indian Institute of Management Bodh Gaya	2015
4	Indian Institute of Management Amritsar	2015
5	Indian Institute of Management, Sambalpur	2015
6	Indian Institute of Management, Sirmaur	2015
7	Indian Institute of Management, Jammu	2016

5.4. Indian Council of Agricultural Research (ICAR)

The Indian Council of Agricultural Research (ICAR) is an autonomous organization under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture and Farmers Welfare, Government of India. Formerly known as Imperial Council of Agricultural Research, it was established on 16 July 1929 as a registered society under the Societies Registration Act, 1860 in pursuance of the report of the Royal Commission on Agriculture. The ICAR has its headquarters at New Delhi.
The Council is the apex body for coordinating, guiding and managing research and education in agriculture including horticulture, fisheries and animal sciences in the entire country., 101 ICAR Institutes and 71 agricultural universities spread across the country this is one of the largest national agricultural systems in the world.

The ICAR has played a pioneering role in ushering Green Revolution and subsequent developments in agriculture in India through its research and technology development that has enabled the country to increase the production of food grains by 5 times, horticultural crops by 9.5 times, fish by 12.5 times, milk 7.8 times and eggs 39 times since 1951 to 2014, thus making a visible impact on the national food and nutritional security. It has played a major role in promoting excellence in higher education in agriculture. It is engaged in cutting edge areas of science and technology development and its scientists are internationally acknowledged in their fields.

The research productivity of ICAR system seems quite significant because the subject areas of ICAR are Agricultural Sciences as a core but it also deals, other associated subjects of applied nature being significant for country's need. In fact agriculture being applied science subject is no subject in itself; rather it is an amalgamation of almost all other sciences as well social sciences subjects. Basically India is agriculturally dominant country and accordingly its GDP is agricultural linked. Similarly, when we investigate research papers production of the country, we find agricultural sciences and its collateral subjects in front line. Probabily reason behind seems that agricultural sciences research deals, science and social science applications for solutions of localized needs or probems. Hence, agricultural sciences research primarily of localized nature; its research findings may not find space in foreign journals due to fewer relevancies to global audience or peers. That is why agricultural sciences research papers of India are more useful for internal (national) consumption and accordingly getting published more in journals of Indian origin. Briefly, ICAR system has five types of institutes in its fold namely – ICAR deemed universities, ICAR research institutes, ICARnational bureau, ICAR directorate/project directorates and national research centres. Besides ICAR has many KVKs and research stations attached, their institutes, etc. which

are producing their research findings and that have published in various journals. Based on ICI data, ICAR system research papers productivity has been put in different tables as per five categories of ICAR institutes.

Table: 5.4.1. Explains research output of four deemed universities, namely IARI, IVRI, NDRI, CIEFE and all these four stand at 1st, 2nd, 3rd and 4th ranks in terms of their research papers productivity and citations received. But while their research output is examinedon citation per paper their rank order is IARI, NDRI, IVRI, and CIFE. Citation per paper is one of the parameters which reflect quality of papers produced or published by respective institute or university.

Table: 5.4.2. It gives details of ICAR 61 institutes quantum of research papers, citations and citations per paper. As per rank order based on articles/papers, among top five are - ICAR Research Coplex for NEH Region stands at 1st position, 992 articles, followed by Indian Institute of Horticultural Research, Bangalore, 659 articles, Indian Potato Research Institute, Simla, 599 articles, Indian Grassland and Fodder Research Institute, Jhansi, 559 articles/papers and Central Arid Zone Research Institute, Jodhpur, 512 articles/papers. Whereas based on citations received, ICAR Research Coplex for NEH Region maintained its 1st position, 755 citations, followed by Central Potato Research Institute Shimla, 680 citations, Central Sheep and Wool Research Institute, 434 citations, Indian Instute of Pulses Research Kanpur, 429 citations and Indian Grassland and Fodder Research Institute, Jhansi, 414 citations and rest all are below to these top five.

Table: 5.4.3. Besides, 61 institutes as detailed out in table 5.4.2, there are three instututes, namely National Organic Farming Institute Gangtok, Indian Institute of Agricultural Biotechnology Ranchi and Indian Institute of Seed Research Mau, published no paper.

Table: 5.4.4. It gives details of 06 ICAR National Bureaux research papers details in terms of articles published, citations received and citation per paper. In terms of articles published, rank order of all 06 is: National Bureaux of Plant Genetic Resources (NBPGR), National Bureaux of Soil Survey and Land Use Planning (NBSSLUP), National Bureaux of Fish Genetic Resources (NBFGR), National Bureaux of Animal Genetic Resources (NBAGR), National Bureaux of National Bureaux of Agriculturally Important Microorganism (NBAIM) and National Bureaux of National Bureaux of Agriculturally Important Insects (NBAII). In case citations received rank order is – NBSSLUP, 492 citations, NBPGR, 409 citations, NBAGR, 309 citations, NBFGR, 162 citations, NBAIM, 52 citations, and NBAII received no citation. While on citation per paper, a quality indicator of papers, rank order of all 06 is altered as: NBAGR, 1.31 citations/paper;

NBSSLUP, 1.22 citationas/paper; NBAIM, 1.51 citations/paper; NBFGR, 0.6 citations/paper; NBPGR, 0.54 citations/per paper, and no citation/paper of NBAII.

Table: 5.4.5. It gives details of ICAR Directorates/Project Directorates research papers based analysis, respect to citations received, and citations per paper. In rank order Directorate of Rapeseed Mustered Research (DRMR) is at 1st position, 190 articles and 171 citations whereas it stands at 4th in terms of citations per paper. ICAR Directorate/Project Directorates are 13 in number and all have published research papers and receioved citations and each one holds different rank order on different paremeters.

Table: 5.4.6. It gives research papers details on different parameters of ICAR National Research Centres which are 15 in number but 14 have contributed research papers and one, i.e 'National Research Centre on Integrated Farming, Motihari Bihar has not published any paper. In this table, NCPIM is at 1st position on all three parameters, 189 articles, 195 citations and 1.03 citations per paper.

Table: 5.4.7. It gives details of top 100 journals wherein ICAR system institutes published papers. As per this table, 1st position in terms of number of papers is occupied by 'Indian Journal of Agricultural Sciences, though it stands at 2nd position in respect of Citations received and 11th position, respect to citations per paper. Similarly Advances in Plant Sciences is at 1st position, respect to citations received and 15th position in terms of citations per paper. In case citations received & citations per paer, 1st position is occupied by 'Annals of Plant Protection Sciences', though it is at5th rank in terms of papers/articles published.

Table 5.4.1: ICAR - Deemed Universities Rank Order: Based on 'Research Articles' 'Citations' and 'C/P'							
S. No.	**University Name**	**A**	**Rank A**	**C**	**Rank C**	**C/P**	**Rank C/P**
1	Indian Agricultural Research Institute (IARI)	4225	**1**	4159	**1**	0.984	**1**
2	Indian Veterinary Research Institute (IVRI)	2469	**2**	1292	**2**	0.523	**3**
3	National Dairy Research Institute (NDRI)	1807	**3**	1058	**3**	0.586	**2**
4	Central Institute of Fisheries Education (CIFE)	443	**4**	162	**4**	0.366	**4**

Legend: A = Articles; C = Citations; C/P = Citations/Paper

Table 5.4.2: Research Productivity of ICAR Institutes: Ranking based on Articles, Citations and Citations/Paper							
SN	**ICAR Institutes**	**Articles**	**Rank A**	**Citation**	**Rank C**	**Citations/ Paper**	**Rank C/P**
1	ICAR Research Complex for NEH Region, Barapani	992	1	755	1	0.761	28
2	Indian Institute of Horticultural Research, Bengaluru	659	2	353	9	0.536	42
3	Central Potato Research Institute, Shimla	599	3	680	2	1.135	3
4	Indian Grassland and Fodder Research Institute, Jhansi	559	4	414	5	0.741	30
5	Central Arid Zone Research Institute, Jodhpur	512	5	381	7	0.744	29
6	Central Marine Fisheries Research Institute, Kochi	455	6	233	19	0.512	47
7	Central Avian Research Institute, Izatnagar	430	7	207	22	0.481	52
8	National Rice Research Institute, Cuttack	426	8	339	13	0.796	24
9	Central Research Institute of Dryland Agriculture, Hyderabad	424	9	351	10	0.828	20
10	Indian Institute of Pulses Research, Kanpur	406	10	429	4	1.057	7
11	Central Sheep and Wool Research Institute, Avikanagar, Rajasthan	397	11	434	3	1.093	6
12	Central Institute of Cotton Research, Nagpur	356	12	351	10	0.986	9
13	Central Soil Salinity Research Institute, Karnal	327	13	209	21	0.639	37
14	Central Institute for Research on Goats, Makhdoom	325	14	367	8	1.129	4
15	Central Institute of Agricultural Engineering, Bhopal	299	15	141	36	0.472	53
16	Central Tuber Crops Research Institute, Trivandrum	294	16	240	18	0.816	21

SN	ICAR Institutes	Articles	Rank A	Citation	Rank C	Citations/ Paper	Rank C/P
17	Indian Institute of Vegetable Research, Varanasi	294	16	251	17	0.854	18
18	Central Institute on Post Harvest Engineering and Technology, Ludhiana	293	18	278	14	0.949	13
19	ICAR Research Complex for Eastern Region, Patna	291	19	148	34	0.509	48
20	Indian Institute of Rice Research, Hyderabad	286	20	256	15	0.895	17
21	Central Institute of Fisheries Technology, Cochin	277	21	181	26	0.653	36
22	Indian Agricultural Statistics Research Institute, New Delhi	270	22	141	36	0.522	43
23	Central Inland Fisheries Research Institute, Barrackpore	260	23	166	29	0.638	38
24	Indian Institute of Soil Sciences, Bhopal	249	24	345	12	1.386	2
25	Central Tobacco Research Institute, Rajahmundry	245	25	148	34	0.604	40
26	Central Institute of Freshwater Aquaculture, Bhubneshwar	244	26	162	30	0.664	34
27	Sugarcane Breeding Institute, Coimbatore	243	27	189	24	0.778	26
28	Central Island Agricultural Research Institute, Port Blair	234	28	214	20	0.915	16
29	Indian Institute of Sugarcane Research, Lucknow	228	29	252	16	1.105	5
30	Indian Institute of Oilseeds Research, Hyderabad	226	30	183	25	0.81	22
31	Indian Institute of Spices Research, Calicut	221	31	169	28	0.765	27
32	Central Research Institute for Jute and Allied Fibres, Barrackpore	213	32	170	27	0.798	23
33	Vivekananda Parvatiya Krishi Anusandhan Sansthan, Almora	198	33	193	23	0.975	11
34	National Institute of Agricultural Economics and Policy Research, New Delhi	190	34	385	6	2.026	1
35	National Institute of Animal Nutrition and Physiology, Bengaluru	190	34	105	42	0.553	41
36	Indian Institute of Millets Research, Hyderabad	174	36	161	31	0.925	15
37	Central Plantation Crops Research Institute, Kasargod	166	37	66	47	0.398	56
38	Indian Institute of Maize Research, New Delhi	166	37	114	40	0.687	33
39	Central Institute of Sub Tropical Horticulture, Lucknow	162	39	158	32	0.975	10

SN	ICAR Institutes	Articles	Rank A	Citation	Rank C	Citations/ Paper	Rank C/P
40	Central Institute for Arid Horticulture, Bikaner	160	40	136	38	0.85	19
41	Central Agroforestry Research Institute, Jhansi	158	41	153	33	0.968	12
42	Central Institute Brackishwater Aquaculture, Chennai	157	42	81	45	0.516	44
43	Indian Institute of Water Management, Bhubaneshwar	156	43	115	39	0.737	31
44	Indian Institute of Natural Resins and Gums, Ranchi	153	44	108	41	0.706	32
45	Central Institute of Temperate Horticulture, Srinagar	132	45	65	49	0.492	50
46	National Academy of Agricultural Research & Management, Hyderabad	132	45	82	44	0.621	39
47	Central Institute for Research on Buffaloes, Hissar	121	47	62	50	0.512	46
48	Central Citrus Research Institute, Nagpur	116	48	91	43	0.784	25
49	Central Institute of Research on Cotton Technology, Mumbai	114	49	50	52	0.439	55
50	National Institute of Research on Jute & Allied Fibre Technology, Kolkata	114	49	55	51	0.482	51
51	National Institute of Veterinary Epidemiology and Disease Informatics, Hebbal, Bengaluru	101	51	66	47	0.653	35
52	Central Institute for Research on Cattle, Meerut, Uttar Pradesh	82	52	77	46	0.939	14
53	Indian Institute of Farming Systems Research, Modipuram	79	53	39	53	0.494	49
54	National Institue of Abiotic Stress Management, Malegaon, Maharashtra	64	54	33	54	0.516	45
55	Indian Institute of Oil Palm Research, Pedavegi, West Godawari	61	55	16	55	0.262	57
56	Indian Institute of Wheat and Barley Research, Karnal	34	56	8	57	0.235	58
57	Indian Institute of Soil and Water Conservation, Dehradun	26	57	12	56	0.462	54
58	National Institute of Biotic Stresses Management, Raipur	12	58	0	59	0	59
59	National Institute of High Security Animal Diseases, Bhopal	7	59	0	59	0	59
60	Central Institute for Women in Agriculture, Bhubaneshwar	3	60	0	59	0	59
61	Central Coastal Agricultural Research Institute, Ela, Old Goa, Goa	1	61	1	58	1	8

Legend: A = Articles; C = Citations; C/P = Citation/Paper

Table 5.4.3: ICAR - Institutions Which did not Publish Any Research Paper (2006-2015)		
SN	**Institute Name**	**Est. Year**
1	National Organic Farming Research Institute,Gangtok, Sikkim	2016
2	Indian Institute of Agricultural Biotechnology, Ranchi	2013
3	Indian Institute of Seed Research, Mau	2004

Table 5.4.4: Research Productivity of ICAR – National Bureaux: Ranking based on Articles, Citations and Citations/Paper

SN	ICAR – National Bureaux	Articles	Rank A	Citations	Rank C	C/P	Rank C/P
1	National Bureau of Plant Genetic Resources (NBPGR)	749	**1**	409	**2**	0.546	**5**
2	National Bureau of Soil Survey and Land Use Planning (NBSSLUP)	403	**2**	492	**1**	1.221	**2**
3	National Bureau of Fish Genetic Resources (NBFGR)	261	**3**	162	**4**	0.621	**4**
4	National Bureau of Animal Genetic Resources (NBAGR)	235	**4**	309	**3**	1.315	**1**
5	National Bureau of Agriculturally Important Microorganisms (NBAIM)	45	**5**	52	**5**	1.156	**3**
6	National Bureau of Agriculturally Important Insects (NBAII)	2	**6**	0	**6**	0	**6**

Table 5.4.5: Research Productivity of ICAR – Directorates/Project Directorates: Ranking based on Articles, Citations and Citations/Paper							
S. N	**ICAR – DIRECTORATES/PROJECT DIRECTORATES**	**Articles**	**Rank A**	**Citations**	**Rank C**	**C/P**	**Rank C/P**
1	Directorate of Rapeseed Mustard Research (DRMR)	190	**1**	171	**1**	0.900	**4**
2	Directorate of Groundnut Research (DGR)	181	**2**	101	**5**	0.558	**8**
3	ICAR - Directorate of Poultry Research (ICARDPR)	155	**3**	113	**3**	0.729	**6**
4	Directorate of Soybean Research (DSR)	109	**4**	111	**4**	1.018	**3**
5	Directorate of Mushroom Research (DMR)	106	**5**	129	**2**	1.217	**1**
6	Directorate of Coldwater Fisheries Research (DCFR)	97	**6**	27	**8**	0.278	**12**
7	Directorate of Medicinal and Aromatic Plants Research (DMAPR)	85	**7**	45	**7**	0.529	**9**
8	Directorate of Onion and Garlic Research (DOGR)	65	**8**	71	**6**	1.092	**2**
9	Directorate of Cashew Research (DCR)	42	**9**	11	**10**	0.262	**13**
10	Project Directorate on Foot and Mouth Disease (PDFMD)	31	**10**	18	**9**	0.581	**7**
11	Directorate of Floricultural Research (DFR)	27	**11**	10	**11**	0.370	**10**
12	Directorate of Knowledge Management in Agriculture (DKMA)	26	**12**	8	**12**	0.308	**11**
13	Directorate of Weed Science Research (DWSR)	6	**13**	5	**13**	0.833	**5**

Legend: A = Article; C = Citation; C/P = Citation/Paper

Table 5.4.6: Research Productivity of ICAR – National Research Centres: Ranking based on Articles, Citations and Citations/Paper							
SN	**Institute Name**	**Article**	**Rank A**	**Citation**	**Rank C**	**C/P**	**Rank C/P**
1	National Centre for Integrated Pest Management (NCIPM)	189	**1**	195	**1**	1.032	**1**
2	National Research Centre on Yak (NRCY)	170	**2**	65	**5**	0.382	**10**
3	National Research Centre on Camel (NRCC)	149	**3**	84	**3**	0.564	**6**
4	National Research Centre on Plant Biotechnology (NRCPB)	140	**4**	85	**2**	0.607	**5**
5	National Research Centre on Seed Spices (NRCSS)	123	**5**	75	**4**	0.610	**4**
6	National Research Centre on Equines (NRCE)	122	**6**	43	**7**	0.352	**11**
7	National Research Centre on Mithun (NRCM)	113	**7**	37	**10**	0.327	**12**
8	National Research Centre for Grapes (NRCG)	83	**8**	40	**8**	0.482	**9**
9	National Research Centre for Orchids (NRCO)	72	**9**	54	**6**	0.750	**2**
10	National Research Centre on Pig (NRCP)	67	**10**	19	**13**	0.284	**13**
11	National Institute of Abiotic Stress Management (NIASM)	64	**11**	33	**11**	0.516	**7**
12	National Research Centre for Banana (NRCB)	56	**12**	39	**9**	0.696	**3**
13	National Research Centre on Meat (NRCM)	47	**13**	23	**12**	0.489	**8**
14	National Research Centre for Litchi (NRCL)	26	**14**	4	**14**	0.154	**14**

Legend: A = Article; C = Citation; C/P = Citation/Paper

Table 5.4.7: ICAR - NRCs Published No Research Paper (2006-2015)		
S. No.	**Institute Name**	**Establishment Year**
1	National Research Centre on Integrated Farming, Motihari Bihar	2016

Table 5.4.8: Top 100 Indian Journals: Ranking based on ICAR Published Articles, Citations & Citations/Paper

Indian Journals	Articles	Rank A	Citations	Rank C	C/P	Rank C/P
INDIAN JOURNAL OF AGRICULTURAL SCIENCES (THE)	2422	**1**	2763	**2**	1.141	**11**
KARNATAKA JOURNAL OF AGRICULTURAL SCIENCES	1991	**2**	2027	**4**	1.018	**15**
RESEARCH ON CROPS	1679	**3**	440	**19**	0.262	**63**
ADVANCES IN PLANT SCIENCES	1601	**4**	431	**21**	0.269	**61**
ANNALS OF PLANT PROTECTION SCIENCES	1588	**5**	4688	**1**	2.952	**1**
INTERNATIONAL JOURNAL OF AGRICULTURAL SCIENCES	1495	**6**	487	**17**	0.326	**55**
INTERNATIONAL JOURNAL OF TROPICAL AGRICULTURE	1353	**7**	113	**56**	0.084	**91**
INDIAN JOURNAL OF HORTICULTURE	1327	**8**	1540	**5**	1.161	**10**
CROP RESEARCH	1214	**9**	747	**10**	0.615	**26**
ASIAN JOURNAL OF HORTICULTURE (THE)	1174	**10**	437	**20**	0.372	**52**
JOURNAL OF MYCOLOGY AND PLANT PATHOLOGY	1140	**11**	696	**11**	0.611	**28**
ANDHRA AGRICULTURAL JOURNAL (THE)	1120	**12**	184	**38**	0.164	**79**
MADRAS AGRICULTURAL JOURNAL (THE)	1063	**13**	386	**25**	0.363	**53**
PESTOLOGY	1055	**14**	599	**13**	0.568	**33**
PROGRESSIVE AGRICULTURE	842	**15**	182	**39**	0.216	**68**
AGRICULTURAL SCIENCE DIGEST - A RESEARCH JOURNAL	832	**16**	458	**18**	0.550	**35**
INDIAN JOURNAL OF ENTOMOLOGY	790	**17**	336	**30**	0.425	**47**
LEGUME RESEARCH	775	**18**	831	**7**	1.072	**13**
INDIAN JOURNAL OF AGRONOMY	773	**19**	2238	**3**	2.895	**2**
JOURNAL OF SOILS & CROPS	746	**20**	322	**32**	0.432	**46**
VEGETOS- AN INTERNATIONAL JOURNAL OF PLANT RESEARCH	721	**21**	126	**55**	0.175	**77**
ORYZA	669	**22**	789	**8**	1.179	**9**
JOURNAL OF ENTOMOLOGICAL RESEARCH	648	**23**	271	**34**	0.418	**48**
JOURNAL OF THE INDIAN SOCIETY OF SOIL SCIENCE	633	**24**	1373	**6**	2.169	**3**
INDIAN JOURNAL OF AGRICULTURAL RESEARCH	628	**25**	418	**22**	0.666	**21**
ANNALS OF PLANT AND SOIL RESEARCH	623	**26**	384	**26**	0.616	**25**
JOURNAL OF OILSEEDS RESEARCH	618	**27**	378	**27**	0.612	**27**
ANNALS OF AGRI BIO RESEARCH	602	**28**	37	**76**	0.061	**95**
INDIAN JOURNAL OF WEED SCIENCE	601	**29**	769	**9**	1.280	**7**
INDIAN JOURNAL OF NEMATOLOGY	589	**30**	359	**29**	0.610	**29**

Indian Journals	Articles	Rank A	Citations	Rank C	C/P	Rank C/P
JOURNAL OF AGROMETEOROLOGY	587	**31**	413	**23**	0.704	**19**
JOURNAL OF RESEARCH ANGRAU (THE)	562	**32**	163	**43**	0.290	**59**
JOURNAL OF MYCOPATHOLOGICAL RESEARCH	555	**33**	113	**56**	0.204	**70**
FORAGE RESEARCH	537	**34**	324	**31**	0.603	**30**
ANNALS OF AGRICULTURAL RESEARCH	515	**35**	133	**52**	0.258	**64**
INTERNATIONAL JOURNAL OF AGRICULTURAL ENGINEERING	511	**36**	50	**73**	0.098	**87**
PESTICIDE RESEARCH JOURNAL	494	**37**	292	**33**	0.591	**31**
JOURNAL OF RESEARCH, PUNJAB AGRICULTURAL UNIVERSITY	489	**38**	99	**60**	0.202	**71**
INDIAN JOURNAL OF FERTILISERS	475	**39**	531	**15**	1.118	**12**
AGRICULTURAL ECONOMICS RESEARCH REVIEW	471	**40**	691	**12**	1.467	**6**
ANNALS OF PLANT PHYSIOLOGY	461	**41**	81	**64**	0.176	**76**
JOURNAL OF AGRICULTURAL ENGINEERING	420	**42**	196	**36**	0.467	**44**
INDIAN JOURNAL OF SOIL CONSERVATION	419	**43**	411	**24**	0.981	**16**
JOURNAL OF SOIL AND WATER CONSERVATION	416	**44**	131	**53**	0.315	**56**
HARYANA JOURNAL OF HORTICULTURAL SCIENCES	393	**45**	153	**48**	0.389	**50**
INTERNATIONAL JOURNAL OF AGRICULTURE, ENVIRONMENT AND BIOTECHNOLOGY	386	**46**	188	**37**	0.487	**41**
AGRICULTURAL REVIEWS	369	**47**	141	**50**	0.382	**51**
NEW AGRICULTURIST	366	**48**	18	**83**	0.049	**96**
INDIAN JOURNAL OF DRYLAND AGRICULTURAL RESEARCH AND DEVELOPMENT	347	**49**	174	**40**	0.501	**39**
INDIAN JOURNAL OF AGRICULTURAL ECONOMICS	343	**50**	360	**28**	1.050	**14**
INDIAN JOURNAL OF AGRICULTURAL MARKETING	335	**51**	160	**44**	0.478	**42**
ANNALS OF HORTICULTURE	333	**52**	79	**65**	0.237	**65**
BIOVED	329	**53**	12	**94**	0.036	**97**
POTATO JOURNAL	319	**54**	550	**14**	1.724	**4**
PEST MANAGEMENT IN HORTICULTURAL ECOSYSTEMS	307	**55**	135	**51**	0.440	**45**
JOURNAL OF ROOT CROPS	306	**56**	167	**42**	0.546	**37**
JOURNAL OF ORNAMENTAL HORTICULTURE	304	**57**	489	**16**	1.609	**5**
JOURNAL OF APPLIED HORTICULTURE	292	**58**	54	**71**	0.185	**74**
INDIAN JOURNAL OF SERICULTURE	291	**59**	160	**44**	0.550	**36**
JOURNAL OF SPICES AND AROMATIC CROPS	290	**60**	170	**41**	0.586	**32**
INDIAN JOURNAL OF TROPICAL BIODIVERSITY	288	**61**	53	**72**	0.184	**75**
INDIAN JOURNAL OF AGRICULTURAL BIOCHEMISTRY	277	**62**	87	**62**	0.314	**58**
AMALA - RESEARCH BULLETIN	266	**63**	18	**83**	0.068	**94**
INDIAN JOURNAL OF CROP SCIENCE (THE)	237	**64**	111	**58**	0.468	**43**
ASIAN AGRI HISTORY	226	**65**	149	**49**	0.659	**23**
JOURNAL OF RESEARCH, SKUAST-J	226	**66**	49	**74**	0.217	**67**
CROP IMPROVEMENT	224	**67**	269	**35**	1.201	**8**
INDIAN JOURNAL OF VIROLOGY	216	**68**	154	**46**	0.713	**18**
AGRICULTURAL ENGINEERING TODAY	216	**69**	68	**67**	0.315	**57**
JOURNAL OF HILL AGRICULTURE	206	**70**	85	**63**	0.413	**49**
JOURNAL OF TROPICAL AGRICULTURE	204	**71**	154	**46**	0.755	**17**
MUSHROOM RESEARCH	202	**72**	99	**60**	0.490	**40**

Indian Journals	Articles	Rank A	Citations	Rank C	C/P	Rank C/P
AGROPEDOLOGY	198	**73**	131	**53**	0.662	**22**
BULLETIN OF THE INDIAN ACADEMY OF SERICULTURE	194	**74**	17	**85**	0.088	**90**
ENTOMON	183	**75**	101	**59**	0.552	**34**
GUJARAT AGRICULTURAL UNIVERSITY RESEARCH JOURNAL	181	**76**	15	**88**	0.083	**92**
INDIAN AGRICULTURIST	170	**77**	37	**76**	0.218	**66**
INTERNATIONAL JOURNAL OF BASIC AND APPLIED AGRICULTURAL	168	**78**	3	**99**	0.018	**99**
HARYANA JOURNAL OF AGRONOMY	160	**79**	58	**70**	0.363	**54**
ANNALS OF ARID ZONE	159	**80**	32	**78**	0.201	**72**
CURRENT AGRICULTURE	147	**81**	39	**75**	0.265	**62**
ADVANCES IN POLLEN SPORE RESEARCH	146	**82**	21	**82**	0.144	**81**
INDIAN JOURNAL OF APPLIED ENTOMOLOGY	137	**83**	26	**80**	0.190	**73**
JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): SERIES A	135	**84**	4	**98**	0.030	**98**
CURRENT NEMATOLOGY	133	**85**	14	**90**	0.105	**85**
COTTON RESEARCH JOURNAL	133	**86**	15	**88**	0.113	**84**
RUBBER SCIENCE	127	**87**	22	**81**	0.173	**78**
ANNALS OF ENTOMOLOGY	124	**88**	13	**92**	0.105	**86**
NATURAL RUBBER RESEARCH	120	**89**	74	**66**	0.617	**24**
JOURNAL OF RICE RESEARCH	117	**90**	63	**68**	0.538	**38**
VIRUSDISEASE	116	**91**	17	**85**	0.147	**80**
TOBACCO RESEARCH	116	**92**	32	**78**	0.276	**60**
SOUTH INDIAN HORTICULTURE	111	**93**	14	**90**	0.126	**83**
INTERNATIONAL JOURNAL OF APPLIED AGRICULTURAL RESEARCH	101	**94**	8	**96**	0.079	**93**
INDIAN JOURNAL OF AGRICULTURAL CHEMISTRY	96	**95**	9	**95**	0.094	**89**
IAPQR TRANSACTIONS	94	**96**	13	**92**	0.138	**82**
AGRICULTURAL RESEARCH JOURNAL	92	**97**	0	**100**	0.000	**100**
JOURNAL OF THE INDIAN SOCIETY FOR COTTON IMPROVEMENT	86	**98**	60	**69**	0.698	**20**
JOURNAL OF THE INSTITUTION OF ENGINEERS (INDIA): AGRICULTURAL ENGINEERING DIVISION BOARD	83	**99**	17	**85**	0.205	**69**
INDIAN JOURNAL OF ARECANUT, SPICES & MEDICINAL PLANTS	83	**100**	8	**96**	0.096	**88**

Legend: A= Articles; C = Citations; C/P = Citation/paper

5.5 Indian Council of Medical Research (ICMR)

The Indian Council of Medical Research (ICMR), New Delhi, the apex body in India for the formulation, co-ordination and promotion of biomedical research, is one of the oldest medical research bodies in the world. In 1911, the Government of India set up the Indian Research Fund Association (IRFA), the specific objective of sponsoring and coordinating medical research in the country. After independence, several important changes were made in the organization and the activities of the IRFA. It was re-designated as the Indian Council of Medical Research (ICMR) in 1949, considerably expanded scope of function. ICMR has 26 National Institutes to do research on specific health subjects like – Tuberculosis, Leprosy, Cholera, Diarrhoeal diseases, Viral diseases, AIDS, Malaria, Kala-azar, vector control, nutrition, food & drug toxicology, reproduction, immuno-haematology, oncology, medical statistics, etc. ICMR has 6 Regional Medical Research Centres to address regional health problems, and also aim to strengthen or generate research capabilities in different geographic areas of the country

The extracted data is organized into one table and the table is self-explanatory to understand the contents and interpret the data as information for a common man.

Table: 5.5.1. The table data gives complete information & inference on each institute of ICMR, respect to institute wise research articles produced, citations received and citation per paper. Table contains data of 24 ICMR institutes. Accordingly ICMR top 05 institutes in research papers production are 'Regional Medical Research Centre (RMRC)', it is at 1st position, 182 articles and 244 citations, though in case of citation per paper it stands at 7th rank, 1.34 citations per paper; National Institute for Research in Tuberculosis, Chennai is at 2nd position, 171 articles and in receiving citatations it is at 3rd position and citatation per paper its rank is 6th, 1.38 citation per paper; National Institute of Malaria Research, Delhi produced 169 articles& holds 3rd position though it stands at 2nd position in case of citations received and citations per paper it is at 5th rank, 1.42 citation/paper; Natinal Institute of Immunohaematology Mumbai produced 165 paper and it is at 4th rank and correspondingly received 242 citations, 7th rank but in case of citation/paper, it is at 19th rank, 0.52 citations per paper; National Institute of Nutrition Hydrabad is at 5th rank, 142 research papers and received 168 citations and have 4th position, in case of citation/paper it is at 10th position, 1.18 citation/paper. Citation per paper is one of the relative indicators of quality research output of an institute. In this table 'Centre for Research in Medical Entomology Madurai is at 1st rank, 2.34 citations / paper and at 2nd rank Desert Medicine Research centre, 1.77 citations/paper. Details of rest are in below table.

Table 5.5.1: Rank Order of ICMR Research Institutes: Based on Articles, Citations and Citations/ Paper							
S. N.	**ICMR Institutes**	**Articles**	**Rank A**	**Citations**	**Rank C**	**Citations / Paper**	**Rank citations / paper**
1	Regional Medical Research Centre (RMRC)	182	**1**	244	**1**	1.341	**7**
2	National Institute for Research in Tuberculosis, Chennai	171	**2**	236	**3**	1.380	**6**
3	National Institute of Malaria Research, Delhi	169	**3**	242	**2**	1.432	**5**
4	National Institute of Immunohaematology, Mumbai	165	**4**	87	**7**	0.527	**19**
5	National Institute of Nutrition, Hyderabad	142	**5**	168	**4**	1.183	**10**
6	National JALMA Institute of Leprosy and Other Mycobacterial Diseases, Agra	104	**6**	93	**6**	0.894	**15**
7	National Institute of Virology, Pune	93	**7**	123	**5**	1.323	**8**
8	Bhopal Memorial Hospital and Research Centre, Bhopal	83	**8**	45	**17**	0.542	**18**
9	Vector Control Research Centre, Puducherry	80	**9**	74	**13**	0.925	**14**
10	National Institute for Research in Reproductive Health, Mumbai	78	**10**	45	**17**	0.577	**17**
11	National Institute of Cholera and Enteric Diseases, Kolkata	74	**11**	81	**8**	1.095	**11**
12	National Institute of Occupational Health, Ahmadabad	64	**12**	77	**10**	1.203	**9**
13	National Institute of Epidemiology, Chennai	63	**13**	59	**15**	0.937	**13**
14	National AIDS Research Institute, pune	57	**14**	57	**16**	1.000	**12**
15	National Institute of Medical Statistics, Delhi	53	**15**	77	**10**	1.453	**4**
16	National Institute of Cancer Prevention and Research, Noida	51	**16**	75	**12**	1.471	**3**
17	Desert Medicine Research Centre, Jodhpur	44	**17**	78	**9**	1.773	**2**
18	Rajendra Memorial Research Institute of Medical Sciences, Patna	40	**18**	27	**19**	0.675	**16**
19	National Institute of Pathology, Delhi	39	**19**	16	**20**	0.410	**20**
20	Centre for Research in Medical Entomology, Madurai	29	**20**	68	**14**	2.345	**1**
21	National Institute for Research in Environmental Health, Bhopal	6	**21**	0	**22**	0.000	**22**
22	Food and Drug Toxicology Research Centre, Hyderabad	5	**22**	1	**21**	0.200	**21**
23	Enterovirus Research Centre, Mumbai	1	**23**	0	**22**	0.000	**22**
24	National Centre for Disease Informatics and Research, Bangalore	1	**24**	0	**22**	0.000	**22**

Legend: A = Articles; C = Citations; citations / paper = Citation/Paper

5.6 Council of Scientific and Industrial Research (CSIR)

The Council of Scientific and Industrial Research (CSIR) was constituted by a resolution of the then Legislative Assembly in 1942. It is a premier industrial R&D autonomous organization under society's registration Act 1860. The Council of Scientific & Industrial Research (CSIR), known for its cutting edge R&D knowledge base in diverse S&T areas, is a contemporary R&D organization. Having pan-India presence, CSIR has a dynamic network of 38 national laboratories, 39 outreach centers, 3 Innovation Complexes and 5 units. CSIR's R&D expertise and experience is embodied in about 4600 active scientists supported by about 8000 scientific and technical personnel.

The extracted data is organized into one table and the table is self-explanatory to understand the contents and interpret the data as information for a common man.

Table: 5.6. In terms of articles published (564) and citations received (501), NBRI Lucknow stands at 1st position, though it is at 8th rank, 0.88 citations / paper; NGRI Hydrabad produced 517 articles and stands at 2nd rank, received 455 citations & its rank is 3rd, in case of citations/paper it stands at 9th position. Citations/paper is one of the quality indicators of research output, and in case of CSIR NISTADS stands at 1st rank, 1.66 citations / paper. It means among CSIR labs/institutes, NISTADS research papers quality is relatively superior. In category of quality research papers, IGIB is at 2nd rank, 1.48 citations/paper and 3rd rank is occupied by NISCAIR, 1.46 citations/paper. IITR Lucknow occupies 4th rank, 1.31 citations/paper, NPL Delhi, 1.05 citations/paper and CFTRI Mysore, 1.01 is at 5th& 6th ranks respectively.

In case of CSIR set up no two labs/institutes are identical in their area of research. It means CSIR research areas are heterogenous, and due to existing scientific research ecosystem of the country and CSIR and other scientific body/institutes, most of the researchers/scientists are in race of their publications in so called international foreign journals. That is why in Indian journals quantum of their publications is relatively less. In fact by and large this kind of mind set is largely prevalent in all sphere of knowledge, particularly 80's onwards and for this kind of mind set or environment, our science leaders are responsible. Many our great scientists, namely Sir CV Raman, India's Noble laeurate, published his over 70% papers in Indian journals and himself started two scientific research journals; Ramanujam published his over 80% papers in Indian journals and our world famous agricultural scientist Dr. MS Swaminathan published his most of the papers (76%+) in Indian journals.

Table 5.6: Research Productivity of CSIR Institutes: Ranking based on Articles, Citations and Citations/Paper						
CSIR Institutes	**Article**	**Rank A**	**Citation**	**Rank C**	**C/P**	**Rank C/P**
National Botanical Research Institute (NBRI)	564	**1**	501	**1**	0.888	**8**
National Geographical Research Institute (NGRI)	517	**2**	455	**3**	0.88	**9**
Central Food and Technological Research Institute (CFTRI)	453	**3**	458	**2**	1.011	**6**
Indian Institute of Chemical Technology (IICT)	442	**4**	245	**8**	0.554	**19**
National Physical Laboratory (NPL)	365	**5**	386	**4**	1.058	**5**
National Institute of Oceanography (NIO)	345	**6**	286	**5**	0.829	**10**
Central Institute of Medicinal and Aromatic Plants (CIMAP)	317	**7**	199	**9**	0.628	**16**
Central Institute for Mining and Fuel Research (CIMFR)	301	**8**	87	**20**	0.289	**29**
Central Drug Research Institute (CDRI)	268	**9**	254	**7**	0.948	**7**
Central Leather Research Institute (CLRI)	246	**10**	137	**14**	0.557	**18**
National Chemical Laboratory (NCL)	240	**11**	100	**18**	0.417	**22**
National Environmental Engineering Research Institute (NEERI)	234	**12**	147	**12**	0.628	**15**
Structural Engineering Research Centre (SERC)	224	**13**	45	**25**	0.201	**34**
Institute of Himalayan Bioresources Technology (IHBT)	204	**14**	136	**15**	0.667	**14**
Institute of Minerals and Materials Technology (IMMT)	188	**15**	126	**16**	0.67	**13**
National Institute of Science and Technology Development Studies (NISTADS)	171	**16**	284	**6**	1.661	**1**
National Metallurgical Laboratory (NML)	165	**17**	36	**27**	0.218	**33**
Indian Institute of Integrative Medicine (IIIM)	150	**18**	69	**21**	0.46	**21**
North-East Institute of Science and Technology (NEIST)	147	**19**	118	**17**	0.803	**11**
Indian Institute of Toxicological Research (IITR)	140	**20**	184	**10**	1.314	**4**
National Aerospace Laboratory (NAL)	128	**21**	30	**28**	0.234	**32**
Central Electrochemical Research Institute (CECRI)	126	**22**	49	**23**	0.389	**24**
Indian Institute of Chemical Biology (IICB)	122	**23**	97	**19**	0.795	**12**
National Institute of Interdisciplinary Science and Technology (NIIST)	122	**24**	47	**24**	0.385	**25**
Central Road Research Institute (CRRI)	121	**25**	22	**33**	0.182	**36**
Centre for Cellular and Molecular Biology (CCMB)	120	**26**	29	**30**	0.242	**31**
Central Salt and Marine Chemical Research Institute	115	**27**	66	**22**	0.574	**17**
Institute of Genomics and Integrative Biology (IGIB)	101	**28**	150	**11**	1.485	**2**
National Institute of Science Communication and Information Resources (NISCAIR)	95	**29**	139	**13**	1.463	**3**
Central Glass and Ceramics Research Institute (CGCRI)	93	**30**	43	**26**	0.462	**20**
Advanced Materials and Processes Research Institute (AMPRI)	80	**31**	30	**28**	0.375	**26**
Central Scientific Instruments Organization (CSIO)	76	**32**	28	**31**	0.368	**27**
Central Building Research Institute (CBRI)	74	**33**	27	**32**	0.365	**28**
Central Mechanical Engineering Research Institute (CMERI)	65	**34**	12	**36**	0.185	**35**
Central Electronics and Engineering Research Institute	56	**35**	16	**34**	0.286	**30**
Institute of Microbial Technology (IMTECH)	36	**36**	15	**35**	0.417	**22**
Indian Institute of Petroleum (IIP)	25	**37**	2	**37**	0.08	**37**

Legend: A = Articles; C = Citations; citations / paper = Citations / Paper

5.7 Department of Science & Technology (DST)

Department of Science & Technology (DST) was established in May 1971, the objective of promoting new areas of Science & Technology and to play the role of a nodal department for organizing, coordinating and promoting S&T activities in the country. DST has 20+ autonomous institutes. The DST mandate and major responsibilities are - formulation of policies relating to Science and Technology (S&T); matters relating to the Scientific Advisory Committee to Cabinet (SAC-C); promotion of new areas of S&T, special emphasis on emerging areas; futurology; coordination and integration of areas of S&T having cross-sectoral linkages in which a number of institutions and departments have interest and capabilities; undertaking or financially sponsoring scientific and technological surveys, research design and development, where necessary; support and Grants-in-aid to Scientific Research Institutions, Scientific Associations and Bodies; matters commonly affecting Scientific and technological departments/ organizations/ institutions e.g. financial, personnel, purchase and import policies and practices; management Information Systems for S&T and coordination thereof. Matters regarding Inter-Agency/Inter-Departmental coordination for evolving S&T missions; matters concerning domestic technology particularly the promotion of ventures involving the commercialization of such technology other than those under the Department of Scientific and Industrial Research; all other measures needed for the promotion of S&T and their application to the development and security of the nation; matters relating to institutional S&T capacity building including setting up of new institutions and institutional infrastructure; promotion of S&T at the State, District, and Village levels for grass- roots development through State S&T Councils and other mechanisms; application of S&T for weaker sections, women and other disadvantaged sections of Society, etc.

The extracted data is organized in a table and the table is self-explanatory to understand the contents and interpret the data as information for a common man. However, here we are illustrating top 5 institutes' research performance taking number of articles produced, citations received and citations per paper. In case of articles produces and citations received top five institutes are – Birbal Sahni Institute of Palaeobotany, Lucknow, 382 articles and 490 citations; Wadia Institute of Himalayan Geology, Dehradun, 302 articles and 419 citations; Indian Association for the Cultivation of Science, Kolkata, 198 articles and 176 citations; Agharkar Research Institute, Pune, 188 articles and 132 citations; Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, 145 articles, but it has 6th rank in receiving citations and at 5th rank in citations received is 'Bise Institute Kolkata, 83 citations. However, in case of citations/paper 1st to 5th rank holder institutes are – National Innovation

Foundation, 1.40 citations/paper; Wadia Institute of Himalayan Geology, 1.38 citations/paper; Birbal Sahni Institute of Palaeobotany, 1.28 citations/paper; National Accreditation Board for Testing & Calibration Laboratories, 1.00 citations/paper; and Indian Association for the cultivation of Science Kolkata, 0.88 citations/paper

Table 5.7: Rank Order of DST Institutes: Based on Research Articles, Citations and Citations/ Paper

DST Institutes	Articles	Rank A	Citations	Rank C	Citations / Paper	Rank citations / paper
Birbal Sahni Institute of Palaeobotany, Lucknow	382	**1**	490	**1**	1.283	**3**
Wadia Institute of Himalayan Geology, Dehradun	302	**2**	419	**2**	1.387	**2**
Indian Association for the Cultivation of Science, Kolkata	198	**3**	176	**3**	0.889	**5**
Agharkar Research Institute, Pune	188	**4**	132	**4**	0.702	**6**
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	145	**5**	80	**6**	0.552	**10**
Bose Institute, Kolkata	138	**6**	83	**5**	0.601	**9**
Indian Institute of Astrophysics, Bangalore	114	**7**	46	**8**	0.404	**12**
Indian Institute of Geomagnetism, Mumbai	108	**8**	69	**7**	0.639	**7**
Aryabhatta Research Institute of Observational-Sciences, Nainital	68	**9**	25	**11**	0.368	**13**
The Institute of Advanced Study in Science & Technology, Guwahati	64	**10**	39	**9**	0.609	**8**
S.N. Bose National Centre for Basic Sciences, Kolkata	51	**11**	26	**10**	0.510	**11**
Raman Research Institute, Bangalore	42	**12**	5	**13**	0.119	**14**
International Advanced Research Centre for Powder Metallurgy and New Materials, Hyderabad	16	**13**	0	**16**	0.000	**16**
National Innovation Foundation	15	**14**	21	**12**	1.400	**1**
Vigyan Prasar, New Delhi	9	**15**	1	**15**	0.111	**15**
Technology Information, Forecasting and Assessment Council (TIFAC)	6	**16**	0	**16**	0.000	**16**
Institute of Nano Science and Technology, Mohali	4	**17**	0	**16**	0.000	**16**
National Accreditation Board for Testing & Calibration Laboratories, New Delhi	2	**18**	2	**14**	1.000	**4**

Legend: A = Articles; C = Citations; citations / paper = Citations / Paper

5.8. Defence Research Development Organization (DRDO)

DRDO was formed in 1958, the amalgamation of the then functioning Technical Development Establishment (TDEs) of the Indian Army and the Directorate of Technical Development & Production (DTDP), the Defence Science Organization (DSO). DRDO was then a small organization, 10 establishments or laboratories. Over the years, it has grown multi-directionally in terms of the variety of subject disciplines, number of laboratories, achievements and stature. DRDO institutes and laboratories are working in diverse areas of research. Today, DRDO is a network of more than 50 laboratories which are deeply engaged in developing defence technologies covering various disciplines, like aeronautics, armaments, electronics, combat vehicles, engineering systems, instrumentation, missiles, advanced computing and simulation, special materials, naval systems, life sciences, training, information systems and agriculture. Presently, the Organization is backed by over 5000 scientists and about 25,000 other scientific, technical and supporting personnel. Several major projects for the development of missiles, armaments, light combat aircrafts, radars, electronic warfare systems etc are on hand and significant achievements have already been made in several such technologies.

The extracted data is organized into a table and the table is self-explanatory to understand the contents and interpret the data as information for a common man. As mentioned above, DRDO nurtures a network of over 50 + heterogeneous in nature of research institutes and laboratories. Though, all are performing well as listed in table but here we are listing top five institutes, laboratories based on articles produced, citations received and citations per paper and these are – Defence Research and Development Establishment, 181 articles is at 1st position and it is at 3rd rank in terms of number of citations and at 4th rank, 0.856 citations/paper; 2nd rank in terms of articles produced is occupied by Defence Food Research Laboratory, and it stands at 1st rank, 174 citations and in terms of citations/paper, it is at 2nd rank, 1.061 cit/pap; Institute of Nuclear Medicine and Allied Sciences, 147 articles is at 3rd rank, 2nd rank, 156 citations and 1st rank, 1.061 citations per paper; Defence Institute of Bio-Energy Research produced is at 4th rank, 106 papers, 6th rank, citations, and 12th rank, 0.46 citations/paper; and Defence Research Laboratory at 5th rank, 100 articles, 9th rank, 26 citations, and 19th rank, 0.26 citations per papers.

Table 5.8: Rank Order of DRDO Research Institutes Performance: Based on Articles produced, Citations and Citations/Paper						
DRDO Institutes	**Articles**	**Rank A**	**Citations**	**Rank C**	**Citations / Paper**	**Rank citations / paper**
Defence Research and Development Establishment (DRDE)	181	**1**	155	**3**	0.856	**4**
Defence Food Research Laboratory (DFRL)	164	**2**	174	**1**	1.061	**2**
Institute of Nuclear Medicine and Allied Sciences (INMAS)	147	**3**	156	**2**	1.061	**1**
Defence Institute of Bio Energy Research (DIBER)	106	**4**	49	**6**	0.462	**12**
Defence Research and Development Laboratory (DRDL)	100	**5**	26	**9**	0.260	**19**
Defence Research Laboratory (DRL)	93	**6**	87	**4**	0.935	**3**
Defense Institute of Advanced Technology (DIAT)	90	**7**	19	**11**	0.211	**24**
Defence Institute of High Altitude Research (DIHAR)	83	**8**	53	**5**	0.639	**7**
Defence Institute of Physiology and Allied Sciences (DIPAS)	66	**9**	34	**8**	0.515	**11**
Snow and Avalanche Study Establishment (SASE)	65	**10**	35	**7**	0.538	**9**
Defence Metallurgical Research Laboratory (DMRL)	63	**11**	7	**18**	0.111	**38**
High Energy Materials Research Laboratory (HEMRL)	61	**12**	15	**12**	0.246	**21**
Institute of Technology and Management (ITM)	50	**13**	20	**10**	0.400	**13**
Solid State Physics Laboratory (SSPL)	46	**14**	7	**18**	0.152	**34**
Centre for Military Airworthiness and Certification (CMAC)	35	**15**	5	**22**	0.143	**35**
Naval Physical and Oceanographic Laboratory (NPOL)	34	**16**	13	**14**	0.382	**15**
Defence Materials and Stores Research and Development Establishment (DMSRDE)	31	**17**	7	**18**	0.226	**22**
Research Centre Imarat (RCI)	28	**18**	6	**21**	0.214	**23**
Centre for Fire, Explosive and Environment Safety (CFEES)	24	**19**	9	**16**	0.375	**16**
Gas Turbine Research Establishment (GTRE)	24	**19**	2	**33**	0.083	**42**
Instruments Research and Development Establishment (IRDE)	24	**19**	4	**25**	0.167	**27**
Naval Materials Research Laboratory (NMRL)	24	**19**	5	**22**	0.208	**25**
Armament Research and Development Establishment (ARDE)	23	**23**	2	**33**	0.087	**41**
Defence Laboratory (DL)	22	**24**	12	**15**	0.545	**8**

DRDO Institutes	Articles	Rank A	Citations	Rank C	Citations / Paper	Rank citations / paper
Defence Scientific Information and Documentation Centre (DESIDOC)	21	**25**	14	**13**	0.667	**6**
Aeronautical Development Establishment (ADE)	19	**26**	3	**29**	0.158	**31**
Laser Science and Technology Centre (LSTC)	19	**26**	3	**29**	0.158	**31**
Defence Institute of Psychological Research (DIPR)	18	**28**	3	**29**	0.167	**27**
Proof and Experimental Establishment (PEE)	18	**28**	5	**22**	0.278	**17**
Defence Electronics Application Laboratory (DEAL)	17	**30**	9	**16**	0.529	**10**
Naval Science and Technological Laboratory (NSTL)	15	**31**	4	**25**	0.267	**18**
Aerial Delivery Research and Development Establishment (ADRDE)	13	**32**	2	**33**	0.154	**33**
Combat Vehicles Research and Development Establishment (CVRDE)	12	**33**	1	**37**	0.083	**42**
Terminal Ballistics Research Laboratory (TBRL)	12	**33**	3	**29**	0.250	**20**
Defence Avionics Research Establishment (DARE)	11	**35**	2	**33**	0.182	**26**
Defence Electronics Research Laboratory (DERL)	10	**36**	1	**37**	0.100	**40**
Institute for Systems Studies and Analyses (ISSA)	10	**36**	4	**25**	0.400	**13**
Electronics and Radar Development Establishment (ERDE)	9	**38**	1	**37**	0.111	**38**
Microwave Tube Research and Development Centre (MTRDC)	7	**39**	1	**37**	0.143	**35**
Research and Development Establishment (RDE)	7	**39**	1	**37**	0.143	**35**
Centre for Air Borne Systems (CABS)	6	**41**	0	**44**	0.000	**44**
Integrated Test Range (ITR)	6	**41**	1	**37**	0.167	**27**
Scientific Analysis Group (SAG)	6	**41**	1	**37**	0.167	**27**
Defence Terrain Research Laboratory (DTRL)	5	**44**	4	**25**	0.800	**5**
Vehicles Research and Development Establishment (VRDE)	3	**45**	0	**44**	0.000	**44**
Advanced Numerical Research and Analysis Group (ANRAG)	2	**46**	0	**44**	0.000	**44**

Legend:A = Articles; C = Citations; citations / paper = Citations / Paper

Chapter 6

Research Performance of Universities

The university system of India broadly can be categorized in four types of universities, i.e. Central Universities, Deemed Universities, States Universities, and Private Universities. These universities are not homogenous in required infrastructure, faculty, research facilities, etc. therefore, here have tried to measure and evaluate each category separately having in mind level playing field for all.

6.1. Research Performance of Central Universities

Currently, the number of Central Universities is 47 and all are good centers of teaching, learning, research and innovation, and also relatively better equipped, infrastructure. For this report, data has been extracted from ICI database and analyzed on different parameters. Analysis is done to evaluate the performance of central universities based on data of similar parameters which reveal the strengths and weaknesses of them on given parameters. Here, we are comparing the performance of central universities of the country based on their research papers, citations received, top authors, subjects, etc. The analysis reveals the relative position of a university among the comity of central universities. Based on this stakeholders can take a note to induct corrective and competitive measures. This report may not have names of few central universities due to the fact that either their contribution is not published in Indian journals or they are relatively new and yet to start scholarly activity. It has been observed that institute/university needs gestation period which may be in the range of 12 to 15 years to deliver expected scholarly output.

Table: 6.1.1. Central universities are 47 in numbers but based on ICI database we are finding research performance of 44 universities. Central universities are considered relatively good in infrastructure, academics but all are not at the same footing, they differ in age, area of focus and funding, etc. However, the table data shows university wise number of articles published, citations received and citation per paper. Table data also shows that out of 44 performing central universities, only four universities are in the range of 1000 and more articles contribution; and next 19 universities have published 900 to 100 papers and remaining 21 universities contribution is 50 to 01 articles. The first four universities which have published 1000 plus articles are University of Delhi, 1523 articles; Banaras Hindu University, 1363 articles; Aligarh Muslim University, 1287 articles and University of Allahabad, 1023 articles. The lowest

contribution, i.e. 01 article is from Nalanda University. Based on citation received, BHU is at 1strank, Dr. Harisingh Gour University is at 2nd rank, University of Delhi is at 3rd rank, AMU is at 4th rank, HNBGU is at 5th rank and so on.

Table: 6.1.2. Shows quantum of articles of 100 authors of all 44 central universities; and accordingly Singh TK of Manipur University, 66 articles stands at first rank among top contributors followed by Kumar Sanjay of BBAU Lucknow, 51 articles, Datta BK of Assam University, 47 articles, Kar Devashish of Assam University, 45 articles, and Ram RB of BBAU Lucknow, 43 articles and so on. This table data shows that in majority top contributors among 100 authors are from the universities located in remote areas and located in relatively smaller towns/cities. Among top five, there is no body from BHU, AMU, UD, JNU, etc. which are top contributors in terms of papers and larger in size and academic infrastructure.

Table: 6.1.3. It shows that University wise number of authors and according Nagaland University (NU) is 1st ranker among all, 13 authors, followed by Hemwati Nandan Bahuguna University, 12 authors, Assam University, 10 authors, Allahabad University, 10 authors, Dr. Harisingh Gour University, 10 authors, and remaining are in the range of less than 10 authors. Here, also the authors in terms of numbers are not from prominent universities like UD, BHU, AMU, JNU, UA, etc.

Table: 6.1.4. Shows university wise number of Indian journals where in respective university authors or researchers have published their articles. It shows that AMU is at 1st rank, 329 journals wherein its authors have published their articles, followed by BHU, 314 journals, UD, 302 journals, JMI, 232 journals, JNU, 211 journals HNBGU, 204 journals, and remaining universities have published their articles in less than 200 numbers of journals. Based on this, it can be concluded that relatively older, larger in size, prominent and perception wise famous universities have more numbers of journals for their publications.

Table: 6.1.5. Shows subject wise performance based on numer of universities count and rank them accordingly. Social science as subject is on top wherein 41 universities out of 44 universities have made their contribution. Business and Marketing is at 2nd rank, 35 universities contribution, followed by General Science and Technology, 34 universities contribution and so on. The table also shows that Central Universities have made their contribution almost in every subject of ICI covered. In Domestic Science, Energy and Fuel Science, Textile and Telecommunication, less than 10 numbers of universities have made contribution and in rest of the subject categories, more than 10 universities have contributed.

Table 6.1.1: Rank Order of Central Universities Research Performance: Based on Articles Published, Citations and Citations/Paper							
SN	**InstituteName**	**Article**	**Rank A**	**Citation**	**Rank C**	**C/P**	**Rank C/P**
1	University of Delhi (UD)	1523	**1**	802	**3**	0.527	**14**
2	Banaras Hindu University (BHU)	1363	**2**	869	**1**	0.638	**8**
3	Aligarh Muslim University (AMU)	1287	**3**	701	**4**	0.545	**13**
4	Jawaharlal Nehru University (JNU)	1023	**4**	597	**7**	0.584	**10**
5	University of Allahabad (UA)	891	**5**	598	**6**	0.671	**6**
6	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	746	**6**	647	**5**	0.867	**3**
7	Dr. Harisingh Gour University (HGU)	717	**7**	852	**2**	1.188	**1**
8	Jamia Millia Islamia (JMI)	609	**8**	288	**11**	0.473	**16**
9	Manipur University (MU)	584	**9**	363	**10**	0.622	**9**
10	University of Hyderabad (UH)	583	**10**	199	**16**	0.341	**26**
11	Assam University (AU)	566	**11**	365	**9**	0.645	**7**
12	Pondicherry University (PU)	556	**12**	252	**12**	0.453	**18**
13	North Eastern Hill University (NEHU)	507	**13**	399	**8**	0.787	**4**
14	Visva Bharati University (VBU)	482	**14**	218	**15**	0.452	**19**
15	Nagaland University (NU)	426	**15**	239	**13**	0.561	**11**
16	Babasaheb Bhimrao Ambedkar University (BBAU)	270	**16**	110	**19**	0.407	**21**
17	Tezpur University (TU)	259	**17**	229	**14**	0.884	**2**
18	Indira Gandhi National Open University (IGNOU)	255	**18**	94	**20**	0.369	**24**
19	Tripura University (TU)	230	**19**	117	**18**	0.509	**15**
20	Mizoram University (MU)	182	**20**	136	**17**	0.747	**5**
21	Guru Ghasidas Vishwavidyalaya (GGV)	152	**21**	54	**22**	0.355	**25**
22	Central Agricultural University (CAU)	112	**22**	37	**23**	0.330	**27**
23	Rajiv Gandhi University (RGU)	108	**23**	59	**21**	0.546	**12**
24	Maulana Azad National Urdu University (MANUU)	43	**24**	4	**30**	0.093	**37**
25	English and Foreign Languages University (EFLU)	38	**25**	2	**34**	0.053	**39**
26	Sikkim University (SU)	37	**26**	14	**24**	0.378	**23**
27	Central University of Gujarat (CUG)	34	**27**	1	**36**	0.029	**40**
28	Central University of Rajasthan (CUR)	31	**28**	3	**32**	0.097	**36**
29	Central University of Jharkhand (CUJ)	30	**29**	5	**28**	0.167	**31**
30	South Asian University (SAU)	30	**29**	14	**24**	0.467	**17**
31	Central University of Himachal Pradesh (CUHP)	28	**31**	6	**27**	0.214	**29**
32	Indira Gandhi National Tribal University (IGNTU)	27	**32**	3	**32**	0.111	**34**
33	Central University of Punjab (CUP)	27	**32**	5	**28**	0.185	**30**
34	Central University of Kerala (CUK)	24	**34**	10	**26**	0.417	**20**
35	Central University of South Bihar (CUSB)	15	**35**	4	**30**	0.267	**28**
36	Central University of Kashmir (CUK)	14	**36**	0	**41**	0.000	**41**

SN	Institute Name	Article	Rank A	Citation	Rank C	C/P	Rank C/P
37	Central University of Haryana (CUH)	14	**36**	1	**36**	0.071	**38**
38	Central University of Tamil Nadu (CUTN)	11	**38**	0	**41**	0.000	**41**
39	Central University of Orissa (CUO)	10	**39**	1	**36**	0.100	**35**
40	Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya (MGAHV)	7	**40**	1	**36**	0.143	**32**
41	Central University of Karnataka (CUK)	7	**40**	1	**36**	0.143	**32**
42	Central University of Jammu (CUJ)	5	**42**	2	**34**	0.400	**22**
43	Indian Maritime University (IMU)	2	**43**	0	**41**	0.000	**41**
44	Nalanda University (NU)	1	**44**	0	**41**	0.000	**41**

Legend: A = Articles; C = Citations; C/P = Citation/Paper

Table 6.1.2: Rank Order of Top 100 Authors ofCentral Universities: Based on Articles, Citations and Citations/Paper

SN	Authors	Institutes	Article	Rank A	Citation	Rank C	C/P	Rank C/P
1	Singh T K	Manipur University (MU)	66	**1**	50	**5**	0.76	**50**
2	Kumar Sanjay	Babasaheb Bhimrao Ambedkar University (BBAU)	51	**2**	17	**47**	0.33	**78**
3	Dutta B K	Assam University (AU)	47	**3**	48	**7**	1.02	**35**
4	Kar Devashish	Assam University (AU)	45	**4**	43	**10**	0.96	**38**
5	Ram R B	Babasaheb Bhimrao Ambedkar University (BBAU)	43	**5**	25	**29**	0.58	**61**
6	Ashfaq Ahmad	Aligarh Muslim University (AMU)	42	**6**	4	**87**	0.1	**96**
7	Chattopadhyaya M C	University of Allahabad (UA)	40	**7**	19	**41**	0.48	**68**
8	Meena M L	Babasaheb Bhimrao Ambedkar University (BBAU)	37	**8**	18	**44**	0.49	**67**
9	Singh A K	Nagaland University (NU)	35	**9**	56	**3**	1.6	**21**
10	Shukla D N	University of Allahabad (UA)	35	**9**	10	**67**	0.29	**82**
11	Singh A K	Banaras Hindu University (BHU)	32	**11**	18	**44**	0.56	**62**
12	Todaria N P	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	31	**12**	21	**36**	0.68	**57**
13	Bhasin M K	University of Delhi (UD)	30	**13**	76	**1**	2.53	**3**
14	Gambhir R K	Manipur University (MU)	29	**14**	0	**99**	0	**99**

SN	Authors	Institutes	Article	Rank A	Citation	Rank C	C/P	Rank C/P
15	Ray D C	Assam University (AU)	29	**14**	4	**87**	0.14	**93**
16	Vidyarthi V K	Nagaland University (NU)	27	**16**	9	**71**	0.33	**78**
17	Narain Satya	University of Allahabad (UA)	27	**16**	16	**49**	0.59	**60**
18	Das Ashesh Kumar	Assam University (AU)	26	**18**	23	**34**	0.89	**44**
19	Jha Alok	Banaras Hindu University (BHU)	26	**18**	8	**72**	0.31	**81**
20	Sharma Amod	Nagaland University (NU)	25	**20**	5	**83**	0.2	**88**
21	Lal Rup	University of Delhi (UD)	25	**20**	21	**36**	0.84	**49**
22	Kumar G	University of Allahabad (UA)	24	**22**	12	**62**	0.5	**65**
23	Paul S B	Assam University (AU)	24	**22**	27	**26**	1.13	**34**
24	Dasgupta Rajib	Jawaharlal Nehru University (JNU)	24	**22**	31	**21**	1.29	**25**
25	Ramanathan A L	Jawaharlal Nehru University (JNU)	24	**22**	29	**25**	1.21	**28**
26	Mohilal N	Manipur University (MU)	24	**22**	4	**87**	0.17	**91**
27	Sharma V B	Nagaland University (NU)	23	**27**	10	**67**	0.44	**75**
28	Kumar Ashok	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	23	**27**	45	**8**	1.96	**14**
29	Srivastava S D	Dr. Harisingh Gour University (HGU)	23	**27**	59	**2**	2.57	**2**
30	Singh V B	Nagaland University (NU)	23	**27**	35	**17**	1.52	**24**
31	Yadav Yogesh Chandra	Babasaheb Bhimrao Ambedkar University (BBAU)	23	**27**	5	**83**	0.22	**86**
32	Yadava R N	Dr. Harisingh Gour University (HGU)	22	**32**	7	**77**	0.32	**80**
33	Joshi S R	North Eastern Hill University (NEHU)	22	**32**	19	**41**	0.86	**48**
34	Srivastava U C	University of Allahabad (UA)	22	**32**	50	**5**	2.27	**5**
35	Abbasi S A	Pondicherry University (PU)	22	**32**	10	**67**	0.46	**72**
36	Sharma C M	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	22	**32**	21	**36**	0.96	**39**
37	Dixit V K	Dr. Harisingh Gour University (HGU)	21	**37**	36	**16**	1.71	**18**
38	Patnaik Prabhat	Jawaharlal Nehru University (JNU)	21	**37**	15	**54**	0.71	**53**

S. N	Authors	Institutes	Article	Rank A	Citation	Rank C	C/P	Rank C/P
39	Saklani Sarla	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	21	**37**	13	**59**	0.62	**59**
40	Singh Rana P	Babasaheb Bhimrao Ambedkar University (BBAU)	21	**37**	24	**32**	1.14	**32**
41	Pandey J D	University of Allahabad (UA)	21	**37**	6	**82**	0.29	**82**
42	Sachdeva M P	University of Delhi (UD)	21	**37**	5	**83**	0.24	**85**
43	Naithani U C	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	20	**43**	42	**11**	2.1	**9**
44	Saraswathy K N	University of Delhi (UD)	20	**43**	8	**72**	0.4	**76**
45	Deb Chitta Ranjan	Nagaland University (NU)	20	**43**	45	**8**	2.25	**6**
46	Singh P K	Manipur University (MU)	20	**43**	24	**32**	1.2	**29**
47	Singh K P	University of Delhi (UD)	20	**43**	14	**57**	0.7	**56**
48	Bahuguna S N	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	20	**43**	2	**95**	0.1	**95**
49	Chandra Subhash	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	20	**43**	11	**65**	0.55	**63**
50	Chourasia O P	Dr. Harisingh Gour University (HGU)	20	**43**	3	**91**	0.15	**92**
51	Sharma B K	North Eastern Hill University (NEHU)	19	**51**	30	**23**	1.58	**22**
52	Shrivastava J P	University of Delhi (UD)	19	**51**	14	**57**	0.74	**51**
53	Singh Arvind	Banaras Hindu University (BHU)	18	**53**	2	**95**	0.11	**94**
54	Choudhury M Dutta	Assam University (AU)	18	**53**	21	**36**	1.17	**31**
55	Afzal Mohammad	Aligarh Muslim University (AMU)	18	**53**	22	**35**	1.22	**27**
56	Singh P K	Nagaland University (NU)	18	**53**	18	**44**	1	**36**
57	Srivastava S K	Dr. Harisingh Gour University (HGU)	18	**53**	38	**13**	2.11	**8**
58	Tandon Pramod	North Eastern Hill University (NEHU)	18	**53**	16	**49**	0.89	**43**

S. N	Authors	Institutes	Article	Rank A	Citation	Rank C	C/P	Rank C/P
59	Sharma G D	Assam University (AU)	18	**53**	32	**19**	1.78	**17**
60	Singh N Rajmuhon	Manipur University (MU)	18	**53**	37	**14**	2.06	**11**
61	Sundriyal Y P	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	18	**53**	33	**18**	1.83	**15**
62	Kharya M D	Dr. Harisingh Gour University (HGU)	18	**53**	37	**14**	2.06	**11**
63	Singh N Irabanta	Manipur University (MU)	17	**63**	16	**49**	0.94	**40**
64	Haseeb Akhtar	Aligarh Muslim University (AMU)	17	**63**	42	**11**	2.47	**4**
65	Lata Rubee	Babasaheb Bhimrao Ambedkar University (BBAU)	17	**63**	12	**62**	0.71	**54**
66	Singh Bharat	University of Allahabad (UA)	17	**63**	8	**72**	0.47	**69**
67	Choudhury Manabendra Dutta	Assam University (AU)	17	**63**	12	**62**	0.71	**54**
68	Bhatt R P	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	17	**63**	15	**54**	0.88	**45**
69	Bakhshi A K	University of Delhi (UD)	17	**63**	15	**54**	0.88	**45**
70	Kumaria Suman	North Eastern Hill University (NEHU)	17	**63**	16	**49**	0.94	**40**
71	Gupta Susmita	Assam University (AU)	16	**71**	26	**28**	1.63	**20**
72	Khan Farid	Dr. Harisingh Gour University (HGU)	16	**71**	27	**26**	1.69	**19**
73	Nath Arun Jyoti	Assam University (AU)	16	**71**	20	**40**	1.25	**26**
74	Pal Dilipkumar	Guru Ghasidas Vishwavidyalaya (GGV)	16	**71**	8	**72**	0.5	**65**
75	Varatharajan R	Manipur University (MU)	16	**71**	10	**67**	0.63	**58**
76	Srivastava Ramesh C	Tripura University (TU)	16	**71**	16	**49**	1	**36**
77	Gohain T	Nagaland University (NU)	16	**71**	1	**97**	0.06	**98**
78	Bajpai Vikas	Jawaharlal Nehru University (JNU)	16	**71**	7	**77**	0.44	**73**
79	Joshi P C	University of Delhi (UD)	16	**71**	7	**77**	0.44	**73**

S. N	Authors	Institutes	Article	Rank A	Citation	Rank C	C/P	Rank C/P
80	Kanaujia S P	Nagaland University (NU)	16	**71**	25	**29**	1.56	**23**
81	Chauhan B S	Nagaland University (NU)	16	**71**	19	**41**	1.19	**30**
82	Prasad Sheo Mohan	University of Allahabad (UA)	15	**82**	1	**97**	0.07	**97**
83	Upadhyay Trilok Chandra	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	15	**82**	8	**72**	0.53	**64**
84	Jangwan J S	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	15	**82**	4	**87**	0.27	**84**
85	Rao J T	Dr. Harisingh Gour University (HGU)	15	**82**	3	**91**	0.2	**88**
86	Bhatt A B	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	15	**82**	32	**19**	2.13	**7**
87	Watal Geeta	University of Allahabad (UA)	15	**82**	52	**4**	3.47	**1**
88	Dutta Manoj	Nagaland University (NU)	15	**82**	17	**47**	1.13	**33**
89	Davidar Priya	Pondicherry University (PU)	15	**82**	30	**23**	2	**13**
90	Neog Pankaj	Nagaland University (NU)	15	**82**	3	**91**	0.2	**88**
91	Srivastava Krishna	University of Allahabad (UA)	15	**82**	31	**21**	2.07	**10**
92	Kidwai Mazaahir	University of Delhi (UD)	15	**82**	7	**77**	0.47	**70**
93	Laitonjam Warjeet s	Manipur University (MU)	15	**82**	7	**77**	0.47	**70**
94	Sharma R	North Eastern Hill University (NEHU)	15	**82**	11	**65**	0.73	**52**
95	Srivastava P K	Aligarh Muslim University (AMU)	15	**82**	13	**59**	0.87	**47**
96	Limaye S N	Dr. Harisingh Gour University (HGU)	14	**96**	0	**99**	0	**99**
97	Khan Jamal A	Aligarh Muslim University (AMU)	14	**96**	5	**83**	0.36	**77**
98	Mishra A P	Dr. Harisingh Gour University (HGU)	14	**96**	25	**29**	1.79	**16**
99	Chowdhury P	Visva Bharati University (VBU)	14	**96**	13	**59**	0.93	**42**
100	Singh H K	Nagaland University (NU)	14	**96**	3	**91**	0.21	**87**

Legend: A = Articles; C = Citation; C/P = Citation/Paper

Table 6.1.3: Rank Order of Central Universities: Based on University wise Number of Authors, % Share among Top 100 Author's Contribution				
SN	**University**	**Authors**	**Number of Authors**	**CU wise % of Top Authors Share in 100 Authors Papers**
1	Nagaland University (NU)	Chauhan B S Deb Chitta Ranjan Dutta Manoj Gohain T Kanaujia S P Neog Pankaj Sharma Amod Sharma V B Singh A K Singh H K Singh P K Singh V B Vidyarthi V K	13	12.015
2	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	Bahuguna S N Bhatt A B Bhatt R P Chandra Subhash Jangwan J S Kumar Ashok Naithani U C Saklani Sarla Sharma C M Sundriyal Y P Todaria N P Upadhyay Trilok Chandra	12	10.827
3	Assam University (AU)	Choudhury M Dutta Choudhury Manabendra Dutta Das Ashesh Kumar Dutta B K Gupta Susmita Kar Devashish Nath Arun Jyoti Paul S B Ray D C Sharma G D	10	11.695
4	University of Allahabad (UA)	Chattopadhyaya M C Kumar G Narain Satya Pandey J D Prasad Sheo Mohan Shukla D N Singh Bharat Srivastava Krishna Srivastava U C Watal Geeta	10	10.553

SN	University	Authors	Number of Authors	CU wise % of Top Authors Share in 100 Authors Papers
5	Dr. Harisingh Gour University (HGU)	Chourasia O P	10	8.269
		Dixit V K		
		Khan Farid		
		Kharya M D		
		Limaye S N		
		Mishra A P		
		Rao J T		
		Srivastava S D		
		Srivastava S K		
		Yadava R N		
6	University of Delhi (UD)	Bakhshi A K	9	8.360
		Bhasin M K		
		Joshi P C		
		Kidwai Mazaahir		
		Lal Rup		
		Sachdeva M P		
		Saraswathy K N		
		Shrivastava J P		
		Singh K P		
7	Manipur University (MU)	Gambhir R K	8	9.365
		Laitonjam Warjeet S		
		Mohilal N		
		Singh N Irabanta		
		Singh N Rajmuhon		
		Singh P K		
		Singh T K		
		Varatharajan R		
8	Babasaheb Bhimrao Ambedkar University (BBAU)	Kumar Sanjay	6	8.771
		Lata Rubee		
		Meena M L		
		Ram R B		
		Singh Rana P		
		Yadav Yogesh Chandra		
9	Aligarh Muslim University (AMU)	Afzal Mohammad	5	4.842
		Ashfaq Ahmad		
		Haseeb Akhtar		
		Khan Jamal A		
		Srivastava P K		
10	North Eastern Hill University (NEHU)	Joshi S R	5	4.157
		Kumaria Suman		
		Sharma B K		
		Sharma R		
		Tandon Pramod		
11	Jawaharlal Nehru University (JNU)	Bajpai Vikas	4	3.883
		Dasgupta Rajib		
		Patnaik Prabhat		
		Ramanathan A L		

SN	University	Authors	Number of Authors	CU wise % of Top Authors Share in 100 Authors Papers
12	Banaras Hindu University (BHU)	Jha Alok Singh A K Singh Arvind	3	3.472
13	Pondicherry University (PU)	Abbasi S A Davidar Priya	2	1.690
14	Guru Ghasidas Vishwavidyalaya (GGV)	Pal Dilipkumar	1	0.731
15	Tripura University (TU)	Srivastava Ramesh C	1	0.731
16	Visva Bharati University (VBU)	Chowdhury P	1	0.640

Legend: CU = Central University

Table 6.1.4: Rank Order of Central Universities: Based onNumber of Indian Journals wherein Central University have Published

SN	University	JC	Rank JC	A	Rank A	C	Rank C	A/JC	Rank A/JC	C/JC	Rank C/JC
1	Aligarh Muslim University (AMU)	329	**1**	1287	**3**	701	**3**	3.912	**8**	2.131	**9**
2	Banaras Hindu University (BHU)	314	**2**	1363	**2**	869	**2**	4.341	**4**	2.768	**5**
3	University of Delhi (UD)	302	**3**	1523	**1**	802	**1**	5.043	**1**	2.656	**6**
4	Jamia Millia Islamia (JMI)	232	**4**	609	**8**	288	**8**	2.625	**17**	1.241	**18**
5	Jawaharlal Nehru University (JNU)	211	**5**	1023	**4**	597	**4**	4.848	**3**	2.829	**4**
6	Hemwati Nandan Bahuguna Garhwal University (HNBGU)	204	**6**	746	**6**	647	**6**	3.657	**10**	3.172	**3**
7	Pondicherry University (PU)	188	**7**	556	**12**	252	**12**	2.957	**14**	1.340	**15**
8	University of Allahabad (UA)	179	**8**	891	**5**	598	**5**	4.978	**2**	3.341	**2**
9	Dr. Harisingh Gour University (HGU)	177	**9**	717	**7**	852	**7**	4.051	**5**	4.814	**1**
10	Assam University (AU)	173	**10**	566	**11**	365	**11**	3.272	**12**	2.110	**11**
11	Visva Bharati University (VBU)	171	**11**	482	**14**	218	**14**	2.819	**15**	1.275	**16**
12	North Eastern Hill University (NEHU)	168	**12**	507	**13**	399	**13**	3.018	**13**	2.375	**8**
13	Manipur University (MU)	146	**13**	584	**9**	363	**9**	4.000	**6**	2.486	**7**
14	University of Hyderabad (UH)	146	**13**	583	**10**	199	**10**	3.993	**7**	1.363	**14**
15	Indira Gandhi National Open University (IGNOU)	120	**15**	255	**18**	94	**18**	2.125	**21**	0.783	**21**
16	Nagaland University (NU)	113	**16**	426	**15**	239	**15**	3.770	**9**	2.115	**10**
17	Tezpur University (TU)	113	**16**	259	**17**	229	**17**	2.292	**19**	2.027	**12**
18	Babasaheb Bhimrao Ambedkar University (BBAU)	101	**18**	270	**16**	110	**16**	2.673	**16**	1.089	**19**
19	Tripura University (TU)	93	**19**	230	**19**	117	**19**	2.473	**18**	1.258	**17**

SN	University	JC	Rank JC	A	Rank A	C	Rank C	A/JC	Rank A/JC	C/JC	Rank C/JC
20	Mizoram University (MU)	91	**20**	182	**20**	136	**20**	2.000	**22**	1.495	**13**
21	Guru Ghasidas Vishwavidyalaya (GGV)	88	**21**	152	**21**	54	**21**	1.727	**26**	0.614	**25**
22	Rajiv Gandhi University (RGU)	64	**22**	108	**23**	59	**23**	1.688	**28**	0.922	**20**
23	Central Agricultural University (CAU)	49	**23**	112	**22**	37	**22**	2.286	**20**	0.755	**22**
24	Central University of Gujarat (CUG)	27	**24**	34	**27**	1	**27**	1.259	**34**	0.037	**40**
25	Sikkim University (SU)	27	**24**	37	**26**	14	**26**	1.370	**31**	0.519	**26**
26	Central University of Jharkhand (CUJ)	26	**26**	30	**29**	5	**29**	1.154	**38**	0.192	**32**
27	Central University of Rajasthan (CUR)	26	**26**	31	**28**	3	**28**	1.192	**37**	0.115	**37**
28	Central University of Punjab (CUP)	24	**28**	27	**32**	5	**32**	1.125	**39**	0.208	**31**
29	Maulana Azad National Urdu University (MANUU)	23	**29**	43	**24**	4	**24**	1.870	**24**	0.174	**34**
30	Central University of Himachal Pradesh (CUHP)	20	**30**	28	**31**	6	**31**	1.400	**30**	0.300	**29**
31	Indira Gandhi National Tribal University (IGNTU)	20	**30**	27	**32**	3	**32**	1.350	**32**	0.150	**35**
32	South Asian University (SAU)	20	**30**	30	**29**	14	**29**	1.500	**29**	0.700	**24**
33	Central University of Kerala (CUK)	14	**33**	24	**34**	10	**34**	1.714	**27**	0.714	**23**
34	Central University of South Bihar (CUSB)	12	**34**	15	**35**	4	**35**	1.250	**35**	0.333	**28**
35	Central University of Haryana (CUH)	11	**35**	14	**36**	1	**36**	1.273	**33**	0.091	**39**
36	English and Foreign Languages University (EFLU)	11	**35**	38	**25**	2	**25**	3.455	**11**	0.182	**33**
37	Central University of Orissa (CUO)	9	**37**	10	**39**	1	**39**	1.111	**40**	0.111	**38**
38	Central University of Tamil Nadu (CUTN)	9	**37**	11	**38**	0	**38**	1.222	**36**	0.000	**41**
39	Central University of Karnataka (CUK)	7	**39**	7	**40**	1	**40**	1.000	**41**	0.143	**36**
40	Central University of Kashmir (CUK)	7	**39**	14	**36**	0	**36**	2.000	**22**	0.000	**41**
41	Central University of Jammu (CUJ)	5	**41**	5	**42**	2	**42**	1.000	**41**	0.400	**27**
42	Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya (MGAHV)	4	**42**	7	**40**	1	**40**	1.750	**25**	0.250	**30**
43	Indian Maritime University (IMU)	2	**43**	2	**43**	0	**43**	1.000	**41**	0.000	**41**
44	Nalanda University (NU)	1	**44**	1	**44**	0	**44**	1.000	**41**	0.000	**41**

Legend: A = Articles; C = Citations; JC = Journal Count;

Table 6.1.5:Rank Order of Subjects: Based on Number of Central Universities Published their Contribution in Journals of India											
S. N	**Subject Name**	**UC**	**Rank UC**	**A**	**Rank A**	**C**	**Rank C**	**A/UC**	**Rank A/UC**	**C/UC**	**Rank C/UC**
1	Social Science	41	**1**	1831	**2**	728	**7**	44.659	**2**	17.756	**10**
2	Business and Marketing	35	**2**	300	**20**	58	**22**	8.571	**23**	1.657	**34**
3	Engineering Science and Technology	34	**3**	429	**13**	58	**22**	12.618	**16**	1.706	**33**
4	GENERAL SCIENCE & TECHNOLOGY	34	**3**	901	**7**	791	**5**	26.500	**9**	23.265	**6**
5	Biological Science	33	**5**	2437	**1**	1655	**1**	73.848	**1**	50.152	**1**
6	Education	33	**5**	276	**22**	32	**33**	8.364	**25**	0.970	**37**
7	Management	33	**5**	512	**12**	80	**20**	15.515	**13**	2.424	**28**
8	Chemistry	32	**8**	1405	**3**	817	**3**	43.906	**3**	25.531	**4**
9	Economics	30	**9**	327	**17**	121	**16**	10.900	**21**	4.033	**21**
10	Environmental Science	30	**9**	1152	**4**	765	**6**	38.400	**4**	25.500	**5**
11	Health Science	30	**9**	1064	**6**	798	**4**	35.467	**6**	26.600	**3**
12	Agriculture	29	**12**	1106	**5**	655	**8**	38.138	**5**	22.586	**7**
13	Arts and Humanities	29	**12**	243	**24**	11	**39**	8.379	**24**	0.379	**42**
14	Botany	29	**12**	875	**8**	585	**9**	30.172	**7**	20.172	**8**
15	Library and Information Science	28	**15**	407	**14**	229	**14**	14.536	**14**	8.179	**14**
16	Others	28	**15**	226	**26**	357	**12**	8.071	**27**	12.750	**13**
17	Pharmacology and Pharmaceutical Science	28	**15**	752	**9**	923	**2**	26.857	**8**	32.964	**2**
18	Physics	28	**15**	630	**10**	537	**10**	22.500	**10**	19.179	**9**
19	Computer Science and Technology	27	**19**	179	**27**	29	**34**	6.630	**28**	1.074	**36**
20	Mathematics	27	**19**	324	**18**	57	**24**	12.000	**18**	2.111	**31**
21	Statistics	27	**19**	314	**19**	55	**25**	11.630	**19**	2.037	**32**
22	Anthropology	26	**22**	370	**15**	120	**17**	14.231	**15**	4.615	**16**
23	Earth and Geological Science	26	**22**	540	**11**	391	**11**	20.769	**11**	15.038	**11**
24	Biotechnology	25	**24**	233	**25**	115	**18**	9.320	**22**	4.600	**17**
25	Forestry	24	**25**	292	**21**	78	**21**	12.167	**17**	3.250	**24**
26	History and Philosophy of Science and Knowledge	24	**25**	153	**28**	319	**13**	6.375	**29**	13.292	**12**
27	Psychology	23	**27**	256	**23**	96	**19**	11.130	**20**	4.174	**20**
28	Zoology	22	**28**	367	**16**	124	**15**	16.682	**12**	5.636	**15**
29	Material Science	20	**29**	125	**29**	43	**28**	6.250	**30**	2.150	**30**
30	Population Studies	19	**30**	50	**35**	17	**37**	2.632	**39**	0.895	**38**
31	Rural development	18	**31**	47	**37**	7	**40**	2.611	**40**	0.389	**41**
32	Toxicology	17	**32**	37	**38**	5	**43**	2.176	**43**	0.294	**43**
33	Pollution	16	**33**	78	**32**	40	**30**	4.875	**35**	2.500	**27**
34	Veterinary Science	15	**34**	89	**31**	38	**32**	5.933	**32**	2.533	**26**
35	Astronomy, Astrophysics, Space and Geodesy	12	**35**	32	**40**	7	**40**	2.667	**38**	0.583	**40**
36	Food and Beverage Science	12	**35**	99	**30**	51	**26**	8.250	**26**	4.250	**19**

S. N	Subject Name	UC	Rank UC	A	Rank A	C	Rank C	A/UC	Rank A/UC	C/UC	Rank C/UC
37	Remote Sensing	12	**35**	26	**44**	42	**29**	2.167	**44**	3.500	**23**
38	Water	12	**35**	18	**45**	1	**45**	1.500	**45**	0.083	**46**
39	Dairying, Dairy, Animals and Animals Produce	11	**39**	66	**33**	25	**35**	6.000	**31**	2.273	**29**
40	Fishery	11	**39**	49	**36**	48	**27**	4.455	**36**	4.364	**18**
41	Law	11	**39**	27	**42**	3	**44**	2.455	**41**	0.273	**44**
42	Meteorology	11	**39**	27	**42**	7	**40**	2.455	**41**	0.636	**39**
43	Oceanography and Marine Science	11	**39**	54	**34**	39	**31**	4.909	**34**	3.545	**22**
44	Domestic Science	9	**44**	34	**39**	13	**38**	3.778	**37**	1.444	**35**
45	Energy and Fuel Science	7	**45**	7	**46**	1	**45**	1.000	**46**	0.143	**45**
46	Textile	6	**46**	32	**40**	19	**36**	5.333	**33**	3.167	**25**
47	Telecommunication	3	**47**	3	**47**	0	**47**	1.000	**46**	0.000	**47**

Legend: A = Articles; C = Citation; UC = University Count

6.2. Research Performance of State Universities

The data of State Universities is extracted from ICI database and analyzed to evaluate the performance based on the retrieved data to explore the strengths and weaknesses of these universities for various reasons. Here we are comparing performance of State Universities of the country based on their research papers in journals published from India. Based on research papers and citations received to them, a relative position of state universities has been computed and shown in Tables below. The analysis reveals the relative position of a university among the comity of State Universities. Based on this, all stakeholders can take a note to induct corrective and competitive measures. This report may not have names of few State Universities due to the fact that either their contribution is not published in Indian journals or they are relatively new and yet to start scholarly activity. It has been observed that institute/university needs gestation period which may be in the range of 12 to 15 years to deliver expected scholarly output. All State Universities are funded and governed by the state governments in India.

Table: 6.2.1. This table data ranks state universities based on articles produced, citations received and citation/paper. Accordingly, PAU is at rank 1st in terms of articles produced & citations received, contributed 4106 articles and received 2567 citations. However, PAU is at 17th rank, 0.62 citations/paper; AU is at 2nd rank in both, articles produced (3519) & citations (2378) received, and 11th rank, 0.67 citations/paper, TNAU is at 3rd rank, 3400 articles & 1937 citations, and 26th rank, 0.57 citations/paper; CCSHAU is at 4th rank, 2587 articles and at 5th rank in terms of citations received, ie. 1569, and 22nd rank, 0.60 citations/paper; UAS Dharwad is at 5th rank in case of articles contribution, i.e. 2288 articles, and 4th rank in citation received, i.e. 1763 citations, and 3rd rank, 0.77 citations/paper. The data of this table indicates that in majority better performers are state agricultural universities relative to general universities.

Table: 6.2.2. It gives an account of top 100 authours of all state universities based on papers produced, citations received and citations/paper. Accordingly, Manavalan of AU is at 1st rank, 155 articles, and stands at 3rd rank in receiving citations i.e. 160 citations and 34th rank in terms of citations/paper i.e. 1.03 citatations/paper; Acharya Krishnendu of university of Calcutta is at first rank, 248 citation of his 61 articles published in Indian journals and received 4.066 citations/paper. However, a ranking of authors of top 100 authors also reveals that state agricultural universities are leading in on all three parameters of ranking.

Table: 6.2.3. It provides information on university wise author numbers and share of them to total of 100 authors contribution. Accordingly, PAU is at top, 17 authors, have 16.70% share in 100 authors work. UAS Dharwad is at 2nd rank, 12 authors, have 13.30% share; TNAU is at 3rd rank, 9 authors contribution and have 9.368% share to total of 100 authors work. This table too reveals that relatively more number of authors & share to 100 authors work are from agricultural universities than general universities.

Table: 6.2.4. It gives information on top 50 journals based on number of state universities published their research papers. Accordingly, Current Science is at 1st rank, publications from 132 state universities and Journal of Environmental Biology is at 1st rank on citations received and citation/paper though this journals stands at 9th rank based on number of articles published. Citation received and citations/paper is the indicators of quality of work and journal.

Table 6.2.1: Research Productivity of Top 50 State Universities: Ranking based on Articles, Citations and Citations/Paper							
SN	**University Name**	**Article**	**Rank A**	**Citation**	**Rank C**	**C/P**	**Rank C/P**
1	Punjab Agricultural University (PAU)	4106	**1**	2567	**1**	0.625	**17**
2	Annamalai University (AU)	3519	**2**	2378	**2**	0.676	**11**
3	Tamil Nadu Agricultural University (TNAU)	3400	**3**	1937	**3**	0.570	**26**
4	Chaudhary Charan Singh Haryana Agricultural University (CCSHAU)	2587	**4**	1569	**5**	0.606	**22**
5	University of Agricultural Sciences Dharwad (UAS Dharwad)	2288	**5**	1763	**4**	0.771	**3**
6	University of Agricultural Sciences Bangalore (UAS Bangalore)	1914	**6**	796	**14**	0.416	**45**
7	Bidhan Chandra Krishi Viswavidyalaya (BCKV)	1798	**7**	934	**10**	0.519	**33**
8	Acharya N G Ranga Agricultural University (ANGRAU)	1596	**8**	989	**8**	0.620	**18**
9	Jadavpur University (JU)	1593	**9**	1005	**7**	0.631	**16**
10	University of Calcutta (UC)	1476	**10**	938	**9**	0.636	**14**
11	University of Mysore (UM)	1411	**11**	852	**13**	0.604	**23**
12	Andhra University (AU)	1407	**12**	781	**15**	0.555	**27**
13	University of Rajasthan (UR)	1405	**13**	1058	**6**	0.753	**4**
14	King George's Medical University (KGMU)	1391	**14**	929	**11**	0.668	**12**
15	Anna University (AU)	1352	**15**	480	**32**	0.355	**47**
16	Dr. Yashwant Singh Parmar University of Horticulture and Forestry (YSPUHF)	1270	**16**	687	**18**	0.541	**29**
17	Govind Ballabh Pant University of Agriculture and Technology (GBPUAT)	1205	**17**	903	**12**	0.749	**6**
18	Sri Venkateswara University (SVU)	1103	**18**	528	**24**	0.479	**38**
19	Chandra Shekhar Azad University of Agriculture and Technology (CSAUAT)	1090	**19**	781	**15**	0.717	**7**
20	Dr. Panjabrao Deshmukh Krishi Vidyapeeth (PDKV)	1080	**20**	481	**31**	0.445	**40**
21	Panjab University (PU)	1068	**21**	465	**33**	0.435	**41**
22	Mahatma Phule Krishi Vidyapeeth (MPKV)	1053	**22**	507	**29**	0.481	**37**
23	Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir (SKUASTK)	986	**23**	605	**21**	0.614	**19**
24	Gauhati University (GU)	936	**24**	549	**22**	0.587	**25**
25	Sardar Vallabhbhai Patel University of Agriculture and Technology (SVPUAT)	931	**25**	548	**23**	0.589	**24**
26	Chaudhary Sarwan Kumar Himachal Pradesh Krishi Vishvavidyalaya (CSKHPKV)	916	**26**	637	**20**	0.695	**9**
27	University of Lucknow (UL)	881	**27**	662	**19**	0.751	**5**
28	West Bengal University of Animal and Fishery Sciences (WBUAFS)	874	**28**	243	**49**	0.278	**50**
29	University of Pune (UP)	854	**29**	519	**26**	0.608	**20**
30	Punjabi University (PU)	843	**30**	265	**48**	0.314	**49**
31	Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu (SKUASTJ)	829	**31**	410	**37**	0.495	**35**
32	Acharya Nagarjuna University (ANU)	815	**32**	428	**35**	0.525	**32**
33	Assam Agricultural University (AAU)	803	**33**	508	**28**	0.633	**15**
34	Kakatiya University (KU)	800	**34**	378	**42**	0.473	**39**

SN	University Name	Article	Rank A	Citation	Rank C	C/P	Rank C/P
35	University of Burdwan (UB)	792	**35**	395	**39**	0.499	**34**
36	Guru Nanak Dev University (GNDU)	783	**36**	412	**36**	0.526	**30**
37	Kurukshetra University (KU)	745	**37**	392	**40**	0.526	**31**
38	Bharathiar University (BU)	740	**38**	299	**45**	0.404	**46**
39	Narendra Deva University of Agriculture and Technology (NDUAT)	737	**39**	502	**30**	0.681	**10**
40	Shivaji University (SU)	736	**40**	355	**43**	0.482	**36**
41	Maharana Pratap University of Agriculture and Technology (MPUAT)	724	**41**	514	**27**	0.710	**8**
42	University of Jammu (UJ)	711	**42**	306	**44**	0.430	**43**
43	Kuvempu University (KU)	710	**43**	729	**17**	1.027	**1**
44	Jawaharlal Nehru Technological University Hyderabad (JNTUH)	699	**44**	221	**50**	0.316	**48**
45	Maharshi Dayanand University (MDU)	695	**45**	380	**41**	0.547	**28**
46	Indira Gandhi Krishi Vishwavidyalaya (IGKV)	679	**46**	290	**46**	0.427	**44**
47	Dr. Babasaheb Ambedkar Marathwada University (BAMU)	677	**47**	440	**34**	0.650	**13**
48	University of Kalyani (UK)	670	**48**	290	**46**	0.433	**42**
49	University of Kerala (UK)	657	**49**	399	**38**	0.607	**21**
50	Rashtrasant Tukadoji Maharaj Nagpur University (RTMNU)	644	**50**	527	**25**	0.818	**2**

Legend: A= Article; C = Citation; C/P = Citation/paper

Table 6.2.2: Top 100 State Universities Authors Research Productivity: Ranking based on Articles, Citations and Citations/Paper								
SN	**Authors**	**Institutes**	**A**	**Rank A**	**C**	**Rank C**	**C/P**	**Rank C/P**
1	Manavalan R	Annamalai University (AU)	155	**1**	160	**3**	1.032	**34**
2	Salimath P M	University of Agricultural Sciences Dharwad (UAS Dharwad)	131	**2**	151	**4**	1.153	**30**
3	Singh B	Sardar Vallabhbhai Patel University of Agriculture and Technology (SVPUAT)	111	**3**	34	**51**	0.306	**87**
4	Kuttalam S	Tamil Nadu Agricultural University (TNAU)	96	**4**	126	**7**	1.313	**18**
5	Dhawan A K	Punjab Agricultural University (PAU)	89	**5**	162	**2**	1.820	**9**
6	Puttaiah E T	Kuvempu University (KU)	75	**6**	87	**11**	1.160	**29**
7	Singh S K	Sardar Vallabhbhai Patel University of Agriculture and Technology (SVPUAT)	73	**7**	47	**37**	0.644	**56**
8	Manivannan N	Tamil Nadu Agricultural University	70	**8**	58	**22**	0.829	**44**
9	Rambabu C	Acharya Nagarjuna University (ANU)	70	**8**	54	**28**	0.771	**47**
10	Yadav Ashok	Chaudhary Charan Singh Haryana Agricultural University (CCSHAU)	67	**10**	103	**9**	1.537	**13**
11	Mogilaiah K	Kakatiya University (KU)	65	**11**	45	**38**	0.692	**51**
12	Hiremath S M	University of Agricultural Sciences Dharwad (UAS Dharwad)	65	**11**	37	**48**	0.569	**62**
13	Mukhopadhaya y S K	West Bengal University of Animal and Fishery Sciences (WBUAFS)	63	**13**	17	**79**	0.270	**90**
14	Brar K S	Punjab Agricultural University (PAU)	62	**14**	42	**44**	0.677	**52**
15	Acharya Krishnendu	University of Calcutta (UC)	61	**15**	248	**1**	4.066	**1**
16	Chetti M B	University of Agricultural Sciences Dharwad (UAS Dharwad)	61	**15**	17	**79**	0.279	**89**
17	Kumar Mukesh	Sardar Vallabhbhai Patel University of Agriculture and Technology (SVPUAT)	60	**17**	14	**89**	0.233	**94**
18	Joshi V K	Dr. Yashwant Singh Parmar University of Horticulture and Forestry (YSPUHF)	59	**18**	28	**60**	0.475	**71**
19	Patil R K	University of Agricultural Sciences Dharwad (UAS Dharwad)	58	**19**	50	**32**	0.862	**41**
20	Vaidya V P	Kuvempu University (KU)	58	**19**	146	**5**	2.517	**5**
21	Nadaf H L	University of Agricultural Sciences Dharwad (UAS Dharwad)	58	**19**	27	**64**	0.466	**74**
22	Walia U S	Punjab Agricultural University (PAU)	56	**22**	70	**16**	1.250	**24**
23	Dhaliwal S S	Punjab Agricultural University (PAU)	54	**23**	33	**53**	0.611	**57**
24	Balikai R A	University of Agricultural Sciences Dharwad (UAS Dharwad)	53	**24**	59	**21**	1.113	**31**

SN	Authors	Institutes	A	Rank A	C	Rank C	C/P	Rank C/P
25	Gupta O D	University of Rajasthan (UR)	52	**25**	28	**60**	0.538	**65**
26	Shivani D	Acharya N G Ranga Agricultural University (ANGRAU)	51	**26**	24	**69**	0.471	**73**
27	Lokhande R S	University of Mumbai (UM)	50	**27**	16	**84**	0.320	**85**
28	Manrao M R	Punjab Agricultural University (PAU)	50	**27**	80	**12**	1.600	**12**
29	Pathak A K	Barkatullah University (BU)	50	**27**	29	**57**	0.580	**59**
30	Singh Avtar	Punjab Agricultural University (PAU)	50	**27**	8	**95**	0.160	**96**
31	Amanullah M Mohamed	Tamil Nadu Agricultural University (TNAU)	49	**31**	26	**65**	0.531	**68**
32	Singh Guriqbal	Punjab Agricultural University (PAU)	48	**32**	58	**22**	1.208	**26**
33	Srimathi P	Tamil Nadu Agricultural University (TNAU)	48	**32**	28	**60**	0.583	**58**
34	Gill M S	Punjab Agricultural University (PAU)	48	**32**	56	**26**	1.167	**27**
35	Singh Pritpal	Punjab Agricultural University (PAU)	47	**35**	40	**45**	0.851	**42**
36	Sreelakshmi Ch	Acharya N G Ranga Agricultural University (ANGRAU)	47	**35**	14	**89**	0.298	**88**
37	Borthakur S K	Gauhati University (GU)	47	**35**	38	**47**	0.809	**45**
38	Jethva D M	Junagadh Agricultural University	47	**35**	36	**49**	0.766	**48**
39	Rajanarendar E	Kakatiya University (KU)	47	**35**	25	**67**	0.532	**67**
40	Walia S S	Punjab Agricultural University (PAU)	47	**35**	31	**54**	0.660	**53**
41	Basavaiah K	University of Mysore (UM)	47	**35**	48	**35**	1.021	**35**
42	Singh A K	Narendra Deva University of Agriculture and Technology (NDUAT)	46	**42**	40	**45**	0.870	**40**
43	Chinnusamy C	Tamil Nadu Agricultural University (TNAU)	46	**42**	15	**86**	0.326	**84**
44	Goel Apul	King George's Medical University (KGMU)	46	**42**	5	**97**	0.109	**98**
45	Sharma S K	Maharana Pratap University of Agriculture and Technology (MPUAT)	46	**42**	44	**39**	0.957	**37**
46	Pan Sitansu	Bidhan Chandra Krishi Viswavidyalaya (BCKV)	45	**46**	61	**20**	1.356	**16**
47	Jayaveera K N	Jawaharlal Nehru Technological University Anantapur (JNTUA)	45	**46**	24	**69**	0.533	**66**
48	Buttar G S	Punjab Agricultural University (PAU)	45	**46**	25	**67**	0.556	**63**
49	Kannan K	Annamalai University (AU)	45	**46**	44	**39**	0.978	**36**
50	Singh Paramjit	Punjab Agricultural University (PAU)	45	**46**	29	**57**	0.644	**55**
51	Thiyagarajan K	Tamil Nadu Agricultural University (TNAU)	45	**46**	17	**79**	0.378	**81**
52	Khadi B M	University of Agricultural Sciences Dharwad (UAS Dharwad)	45	**46**	26	**65**	0.578	**60**
53	Sarma H P	Gauhati University (GU)	45	**46**	43	**41**	0.956	**38**
54	Gill B S	Punjab Agricultural University (PAU)	45	**46**	19	**75**	0.422	**78**
55	Giraddi R S	University of Agricultural Sciences Dharwad (UAS Dharwad)	45	**46**	64	**18**	1.422	**14**

SN	Authors	Institutes	A	Rank A	C	Rank C	C/P	Rank C/P
56	Prasad C S	Sardar Vallabhbhai Patel University of Agriculture and Technology (SVPUAT)	45	**46**	134	**6**	2.978	**2**
57	Malik R K	Chaudhary Charan Singh Haryana Agricultural University (CCSHAU)	44	**57**	57	**24**	1.295	**20**
58	Kumar Anil	Chaudhary Charan Singh Haryana Agricultural University (CCSHAU)	44	**57**	15	**86**	0.341	**83**
59	Reddy S M	Kakatiya University (KU)	44	**57**	11	**92**	0.250	**92**
60	Sharma S K	Chaudhary Charan Singh Haryana Agricultural University (CCSHAU)	44	**57**	29	**57**	0.659	**54**
61	Jat M L	Maharana Pratap University of Agriculture and Technology (MPUAT)	43	**61**	19	**75**	0.442	**76**
62	Raguchander T	Tamil Nadu Agricultural University (TNAU)	43	**61**	11	**92**	0.256	**91**
63	Sharma P C	Dr. Yashwant Singh Parmar University of Horticulture and Forestry (YSPUHF)	43	**61**	50	**32**	1.163	**28**
64	Malik R S	Chaudhary Charan Singh Haryana Agricultural University (CCSHAU)	42	**64**	24	**69**	0.571	**61**
65	Biswas S K	Chandra Shekhar Azad University of Agriculture and Technology (CSAUAT)	42	**64**	52	**31**	1.238	**25**
66	Kumar Padma	University of Rajasthan (UR)	42	**64**	68	**17**	1.619	**11**
67	Mane U H	Dr. Babasaheb Ambedkar Marathwada University (BAMU)	42	**64**	55	**27**	1.310	**19**
68	Sivakumar K	Annamalai University (AU)	42	**64**	53	**30**	1.262	**23**
69	Punia S S	Chaudhary Charan Singh Haryana Agricultural University (CCSHAU)	42	**64**	106	**8**	2.524	**4**
70	Qureshi T A	Barkatullah University (BU)	42	**64**	23	**72**	0.548	**64**
71	Kumar Ashok	Sardar Vallabhbhai Patel University of Agriculture and Technology (SVPUAT)	42	**64**	16	**84**	0.381	**80**
72	Brar J S	Punjab Agricultural University (PAU)	42	**64**	17	**79**	0.405	**79**
73	Balasubramanian T	Annamalai University (AU)	42	**64**	31	**54**	0.738	**49**
74	Dora K C	West Bengal University of Animal and Fishery Sciences (WBUAFS)	42	**64**	5	**97**	0.119	**97**
75	Verma P S	University of Rajasthan (UR)	41	**75**	21	**73**	0.512	**70**
76	Rao B Ravi Prasad	Sri Krishnadevaraya University (SKU)	41	**75**	19	**75**	0.463	**75**
77	Palled Y B	University of Agricultural Sciences Dharwad (UAS Dharwad)	41	**75**	57	**24**	1.390	**15**

SN	Authors	Institutes	A	Rank A	C	Rank C	C/P	Rank C/P
78	Prakash Satya	Sardar Vallabhbhai Patel University of Agriculture and Technology (SVPUAT)	41	**75**	15	**86**	0.366	**82**
79	Sharma J R	Punjab Agricultural University (PAU)	40	**79**	103	**9**	2.575	**3**
80	Balagurunatha n R	Periyar University (PU)	40	**79**	54	**28**	1.350	**17**
81	Kajjidoni S T	University of Agricultural Sciences Dharwad (UAS Dharwad)	40	**79**	28	**60**	0.700	**50**
82	Mahadevan K M	Kuvempu University (KU)	40	**79**	74	**14**	1.850	**7**
83	Mukherjee Ambarish	University of Burdwan (UB)	40	**79**	43	**41**	1.075	**33**
84	Rao G Nageswara	Andhra University (AU)	40	**79**	34	**51**	0.850	**43**
85	Raju A J Solomon	Andhra University (AU)	39	**85**	36	**49**	0.923	**39**
86	Kathiresan K	Annamalai University (AU)	39	**85**	72	**15**	1.846	**8**
87	Jonathan E I	Tamil Nadu Agricultural University (TNAU)	39	**85**	43	**41**	1.103	**32**
88	Bansal Neelam	Guru Angad Dev Veterinary and Animal Sciences University	39	**85**	2	**100**	0.051	**100**
89	Singh Ram	Chaudhary Charan Singh Haryana Agricultural University (CCSHAU)	39	**85**	31	**54**	0.795	**46**
90	Pandey V P	Annamalai University (AU)	39	**85**	8	**95**	0.205	**95**
91	Singh Sarvjeet	Punjab Agricultural University (PAU)	39	**85**	17	**79**	0.436	**77**
92	Mehta D R	Junagadh Agricultural University (JAU)	38	**92**	48	**35**	1.263	**22**
93	Hundal S S	Punjab Agricultural University (PAU)	38	**92**	62	**19**	1.632	**10**
94	Mallapur C P	University of Agricultural Sciences Dharwad (UAS Dharwad)	38	**92**	75	**13**	1.974	**6**
95	Manonmani S	Tamil Nadu Agricultural University (TNAU)	38	**92**	20	**74**	0.526	**69**
96	Deokule S S	University of Pune (UP)	38	**92**	12	**91**	0.316	**86**
97	Lingappa S	University of Agricultural Sciences Dharwad (UAS Dharwad)	38	**92**	9	**94**	0.237	**93**
98	Yadav S R	Shivaji University (SU)	38	**92**	49	**34**	1.289	**21**
99	Pahuja S K	Chaudhary Charan Singh Haryana Agricultural University (CCSHAU)	38	**92**	18	**78**	0.474	**72**
100	Sathe T V	Shivaji University (SU)	38	**92**	4	**99**	0.105	**99**

Legend: A= Article; C = Citation; C/P = Citation/Paper

Table 6.2.3: Top 100 Author's productivity of State University				
SN	**Institutes**	**Authors**	**Number of Authors**	**SU wise % of Top Authors Share in 100 Authors Papers**
1	Punjab Agricultural University (PAU)	Brar J S	17	16.700
		Brar K S		
		Buttar G S		
		Dhaliwal S S		
		Dhawan A K		
		Gill B S		
		Gill M S		
		Hundal S S		
		Manrao M R		
		Sharma J R		
		Singh Avtar		
		Singh Guriqbal		
		Singh Paramjit		
		Singh Pritpal		
		Singh Sarvjeet		
		Walia S S		
		Walia U S		
2	University of Agricultural Sciences Dharwad (UAS Dharwad)	Balikai R A	12	13.300
		Chetti M B		
		Giraddi R S		
		Hiremath S M		
		Kajjidoni S T		
		Khadi B M		
		Lingappa S		
		Mallapur C P		
		Nadaf H L		
		Palled Y B		
		Patil R K		
		Salimath P M		
3	Tamil Nadu Agricultural University (TNAU)	Amanullah M Mohamed	9	9.368
		Chinnusamy C		
		Jonathan E I		
		Kuttalam S		
		Manivannan N		
		Manonmani S		
		Raguchander T		
		Srimathi P		
		Thiyagarajan K		
4	Chaudhary Charan Singh Haryana Agricultural University (CCSHAU)	Kumar Anil	8	7.115
		Malik R K		
		Malik R S		
		Pahuja S K		
		Punia S S		
		Sharma S K		
		Singh Ram		
		Yadav Ashok		

SN	Institutes	Authors	Number of Authors	SU wise % of Top Authors Share in 100 Authors Papers
5	Annamalai University (AU)	Balasubramanian T Kannan K Kathiresan K Manavalan R Pandey V P Sivakumar K	6	7.154
6	Sardar Vallabhbhai Patel University of Agriculture and Technology (SVPUAT)	Kumar Ashok Kumar Mukesh Prakash Satya Prasad C S Singh B Singh S K	6	7.352
7	University of Rajasthan (UR)	Gupta O D Kumar Padma Verma P S	3	2.668
8	Kuvempu University (KU)	Mahadevan K M Puttaiah E T Vaidya V P	3	3.41897233
9	Kakatiya University (KU)	Mogilaiah K Rajanarendar E Reddy S M	3	3.083
10	Andhra University (AU)	Raju A J Solomon Rao G Nageswara	2	1.561
11	Shivaji University (SU)	Sathe T V Yadav S R	2	1.502
12	Acharya N G Ranga Agricultural University (ANGRAU)	Shivani D Sreelakshmi Ch	2	1.937
13	Barkatullah University (BU)	Pathak A K Qureshi T A	2	1.818
14	Dr. Yashwant Singh Parmar University of Horticulture and Forestry (YSPUHF)	Joshi V K Sharma P C	2	2.016
15	Maharana Pratap University of Agriculture and Technology (MPUAT)	Jat M L Sharma S K	2	1.759
16	Junagadh Agricultural University (JAU)	Jethva D M Mehta D R	2	1.680
17	Gauhati University (GU)	Borthakur S K Sarma H P	2	1.818
18	West Bengal University of Animal and Fishery Sciences (WBUAFS)	Dora K C Mukhopadhayay S K	2	2.075
19	Narendra Deva University of Agriculture and Technology (NDUAT)	Singh A K	1	0.909
20	Periyar University (PU)	Balagurunathan R	1	0.791
21	University of Burdwan (UB)	Mukherjee Ambarish	1	0.791
22	University of Calcutta (UC)	Acharya Krishnendu	1	1.206
23	University of Mumbai (UM)	Lokhande R S	1	0.988

SN	Institutes	Authors	Number of Authors	SU wise % of Top Authors Share in 100 Authors Papers
24	University of Mysore (UM)	Basavaiah K	1	0.929
25	University of Pune (UP)	Deokule S S	1	0.751
26	Acharya Nagarjuna University (ANU)	Rambabu C	1	1.383
27	Bidhan Chandra Krishi Viswavidyalaya (BCKV)	Pan Sitansu	1	0.889
28	Chandra Shekhar Azad University of Agriculture and Technology (CSAUAT)	Biswas S K	1	0.830
29	Guru Angad Dev Veterinary and Animal Sciences University (GADVASU)	Bansal Neelam	1	0.771
30	Jawaharlal Nehru Technological University Anantapur (JNTUA)	Jayaveera K N	1	0.889
31	Dr. Babasaheb Ambedkar Marathwada University (BAMU)	Mane U H	1	0.830
32	Sri Krishnadevaraya University (SKU)	Rao B Ravi Prasad	1	0.810
33	King George's Medical University (KGMU)	Goel Apul	1	0.909

Legend: SU = State University

Table 6.2.4 Ranking of top 50 Journals based on number of State Universities published Papers

S. N	Journal Name	UC	Rank UC	A	Rank A	C	Rank C	A/UC	Rank A/UC	C/UC	Rank A/UC
1	CURRENT SCIENCE	132	1	1060	4	1346	2	8.030	11	10.197	4
2	JOURNAL OF CHEMICAL AND PHARMACEUTICAL RESEARCH	122	2	879	8	999	5	7.205	14	8.189	7
3	INTERNATIONAL JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES	118	3	1020	7	1339	3	8.644	8	11.347	3
4	ASIAN JOURNAL OF MICROBIOLOGY BIOTECHNOLOGY & ENVIRONMENTAL SCIENCES	115	4	565	16	129	35	4.913	27	1.122	41
5	ASIAN JOURNAL OF CHEMISTRY	114	5	1027	6	489	12	9.009	6	4.289	16
6	RESEARCH JOURNAL OF PHARMACEUTICAL, BIOLOGICAL, AND CHEMICAL SCIENCES	112	6	542	19	157	31	4.839	29	1.402	40

S. N	Journal Name	UC	Rank UC	A	Rank A	C	Rank C	A/UC	Rank A/UC	C/UC	Rank A/UC
7	ECOLOGY ENVIRONMENT & CONSERVATION	109	7	761	9	102	41	6.982	15	0.936	43
8	INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN COMPUTER SCIENCE	107	8	462	23	22	47	4.318	33	0.206	47
9	JOURNAL OF ENVIRONMENTAL BIOLOGY	102	9	515	21	1587	1	5.049	26	15.559	1
10	JOURNAL OF PHARMACY RESEARCH	101	10	1057	5	587	10	10.465	4	5.812	11
11	INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE AND TECHNOLOGY	101	10	599	15	146	33	5.931	18	1.446	36
12	ENVIRONMENT AND ECOLOGY	99	12	2719	1	580	11	27.465	1	5.859	10
13	JOURNAL OF THE INDIAN CHEMICAL SOCIETY	97	13	1091	3	594	9	11.247	3	6.124	9
14	INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY	97	13	413	28	403	16	4.258	36	4.155	17
15	INDIAN JOURNAL OF BIOTECHNOLOGY	95	15	309	39	366	17	3.253	45	3.853	19
16	POLLUTION RESEARCH	91	16	405	30	165	29	4.451	31	1.813	32
17	INDIAN JOURNAL OF PHYSICS	90	17	490	22	769	6	5.444	24	8.544	6
18	INTERNATIONAL JOURNAL OF CHEMTECH RESEARCH	89	18	746	10	343	19	8.382	9	3.854	18
19	INDIAN JOURNAL OF PURE & APPLIED PHYSICS	89	18	518	20	419	13	5.820	19	4.708	15
20	INDIAN FORESTER (THE)	89	18	433	25	220	23	4.865	28	2.472	27
21	INTERNATIONAL JOURNAL OF CHEMICAL SCIENCES	88	21	563	17	161	30	6.398	16	1.830	31
22	INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES: REVIEW AND RESEARCH	88	21	458	24	198	24	5.205	25	2.250	28

S. N	Journal Name	UC	Rank UC	A	Rank A	C	Rank C	A/UC	Rank A/UC	C/UC	Rank A/UC
23	THE CRITERION: AN INTERNATIONAL JOURNAL IN ENGLISH	87	23	348	35	2	49	4.000	38	0.023	50
24	INDIAN JOURNAL OF EXPERIMENTAL BIOLOGY	86	24	342	36	608	8	3.977	39	7.070	8
25	PLANT ARCHIVES	85	25	1228	2	295	21	14.447	2	3.471	21
26	ASIAN JOURNAL OF PHARMACEUTICAL AND CLINICAL RESEARCH	85	25	367	33	317	20	4.318	34	3.729	20
27	BULLETIN OF MATERIALS SCIENCE	81	27	354	34	156	32	4.370	32	1.926	30
28	INTERNATIONAL JOURNAL OF ENVIRONMENTAL SCIENCES	81	27	272	44	116	37	3.358	44	1.432	37
29	ASIAN JOURNAL OF RESEARCH IN SOCIAL SCIENCES AND HUMANITIES	80	29	308	40	5	48	3.850	42	0.063	48
30	INDIAN JOURNAL OF CHEMISTRY SECTION B - ORGANIC INCLUDING MEDICINAL	79	30	623	14	412	14	7.886	12	5.215	13
31	INTERNATIONAL JOURNAL ON COMPUTER SCIENCE AND ENGINEERING	78	31	308	40	67	44	3.949	40	0.859	44
32	JOURNAL OF FOOD SCIENCE AND TECHNOLOGY	77	32	431	26	660	7	5.597	22	8.571	5
33	JOURNAL OF CELL AND TISSUE RESEARCH	76	33	326	38	120	36	4.289	35	1.579	33
34	ASIAN JOURNAL OF RESEARCH IN CHEMISTRY	76	33	295	43	47	45	3.882	41	0.618	45
35	ASIAN JOURNAL OF RESEARCH IN BUSINESS ECONOMICS AND MANAGEMENT	76	33	246	46	2	49	3.237	46	0.026	49
36	JOURNAL OF MYCOLOGY AND PLANT PATHOLOGY	75	36	624	13	362	18	8.320	10	4.827	14
37	PRAMANA- JOURNAL OF PHYSICS	75	36	335	37	107	39	4.467	30	1.427	39
38	JOURNAL OF EXPERIMENTAL ZOOLOGY INDIA	74	38	410	29	116	37	5.541	23	1.568	34

S. N	Journal Name	UC	Rank UC	A	Rank A	C	Rank C	A/UC	Rank A/UC	C/UC	Rank A/UC
39	ORIENTAL JOURNAL OF CHEMISTRY	74	38	298	42	146	33	4.027	37	1.973	29
40	ADVANCES IN PLANT SCIENCES	73	40	638	12	181	26	8.740	7	2.479	26
41	JOURNAL OF SCIENTIFIC & INDUSTRIAL RESEARCH	73	40	235	47	188	25	3.219	47	2.575	24
42	INDIAN JOURNAL OF PHARMACEUTICAL SCIENCES	73	40	234	48	1053	4	3.205	48	14.425	2
43	NATIONAL ACADEMY SCIENCE LETTERS	72	43	195	49	76	43	2.708	49	1.056	42
44	INTERNATIONAL JOURNAL OF PLANT SCIENCES	71	44	555	18	178	28	7.817	13	2.507	25
45	INDIAN PHYTOPATHOLOGY	71	44	428	27	412	14	6.028	17	5.803	12
46	ASIAN JOURNAL OF EXPERIMENTAL BIOLOGICAL SCIENCES	71	44	185	50	104	40	2.606	50	1.465	35
47	PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, INDIA, SECTION B - BIOLOGICAL SCIENCES	70	47	255	45	100	42	3.643	43	1.429	38
48	INTERNATIONAL JOURNAL OF TROPICAL AGRICULTURE	69	48	647	11	40	46	9.377	5	0.580	46
49	INDIAN JOURNAL OF CHEMISTRY - SECTION A: INORGANIC, BIO-INORGANIC, PHYSICAL, THEORETICAL & ANALYTICAL	69	48	396	31	228	22	5.739	21	3.304	22
50	NATURE ENVIRONMENT & POLLUTION TECHNOLOGY	68	50	395	32	180	27	5.809	20	2.647	23

Legend: A= Article; C = Citation; UC = University Count

Table 6.2.5 Ranking of Subjects based on number of State Universities have contributed											
S. N	**Subjects**	**UC**	**Rank UC**	**A**	**Rank A**	**C**	**Rank C**	**A/UC**	**Rank A/UC**	**C/UC**	**Rank C/UC**
1	Biological Science	223	1	17863	2	8292	2	80.103	2	37.184	2
2	Health Science	213	2	6218	7	4370	6	29.192	8	20.516	7
3	Environmental Science	200	3	9983	3	4271	7	49.915	4	21.355	6
4	Pharmacology and Pharmaceutical Science	200	3	8061	6	7094	3	40.305	6	35.470	4
5	Chemistry	197	5	8839	5	4718	5	44.868	5	23.949	5
6	GENERAL SCIENCE & TECHNOLOGY	197	5	3178	10	2389	8	16.132	13	12.127	11
7	Social Science	195	7	3045	11	671	18	15.615	14	3.441	23
8	Engineering Science and Technology	189	8	4608	8	1275	12	24.381	10	6.746	16
9	Agriculture	182	9	22423	1	15603	1	123.203	1	85.731	1
10	Botany	178	10	9333	4	6443	4	52.433	3	36.197	3
11	Management	173	11	1492	20	179	32	8.624	24	1.035	40
12	Biotechnology	169	12	2017	14	902	16	11.935	19	5.337	19
13	Education	155	13	1274	25	175	34	8.219	26	1.129	39
14	Zoology	152	14	4551	9	1964	9	29.941	7	12.921	8
15	Computer Science and Technology	148	15	1504	19	224	30	10.162	23	1.514	37
16	Economics	148	15	1065	26	486	23	7.196	29	3.284	24
17	Library and Information Science	143	17	1647	17	940	15	11.517	21	6.573	17
18	Physics	142	18	2445	13	1730	10	17.218	11	12.183	10
19	Business and Marketing	140	19	865	29	254	27	6.179	34	1.814	35
20	Forestry	134	20	1742	16	643	19	13.000	17	4.799	22
21	Earth and Geological Science	129	21	1803	15	1186	14	13.977	15	9.194	13
22	Toxicology	123	22	1296	24	641	20	10.537	22	5.211	20
23	Pollution	119	23	891	28	368	24	7.487	28	3.092	25
24	Mathematics	118	24	1423	22	256	26	12.059	18	2.169	30
25	Others	116	25	997	27	635	21	8.595	25	5.474	18
26	Statistics	114	26	1345	23	238	29	11.798	20	2.088	32
27	Material Science	110	27	768	30	253	28	6.982	30	2.300	28
28	Food and Beverage Science	105	28	1433	21	1256	13	13.648	16	11.962	12
29	Veterinary Science	102	29	2870	12	1301	11	28.137	9	12.755	9
30	Psychology	99	30	634	31	209	31	6.404	33	2.111	31
31	Arts and Humanities	98	31	434	35	5	46	4.429	38	0.051	48
32	Dairying, Dairy, Animals and Animals Produce	97	32	1582	18	866	17	16.309	12	8.928	14
33	Fishery	80	33	435	34	141	36	5.438	35	1.763	36
34	History and Philosophy of Science and Knowledge	77	34	230	38	541	22	2.987	41	7.026	15

S. N	Subjects	UC	Rank UC	A	Rank A	C	Rank C	A/UC	Rank A/UC	C/UC	Rank C/UC
35	Domestic Science	76	35	492	33	153	35	6.474	32	2.013	33
36	Anthropology	70	36	567	32	179	32	8.100	27	2.557	26
37	Astronomy, Astrophysics, Space and Geodesy	59	37	209	40	86	40	3.542	39	1.458	38
38	Meteorology	57	38	390	36	290	25	6.842	31	5.088	21
39	Remote Sensing	57	38	124	42	113	38	2.175	45	1.982	34
40	Water	50	40	131	41	38	41	2.620	42	0.760	41
41	Rural development	49	41	85	44	32	42	1.735	47	0.653	43
42	Oceanography and Marine Science	48	42	229	39	121	37	4.771	37	2.521	27
43	Textile	45	43	237	37	103	39	5.267	36	2.289	29
44	Law	37	44	85	44	12	45	2.297	44	0.324	46
45	Energy and Fuel Science	35	45	87	43	25	43	2.486	43	0.714	42
46	Population Studies	24	46	40	47	15	44	1.667	48	0.625	44
47	Telecommunication	22	47	43	46	1	49	1.955	46	0.045	49
48	Nanoscience and Nanotechnology	13	48	20	49	3	48	1.538	49	0.231	47
49	Apiculture	8	49	27	48	5	46	3.375	40	0.625	44

Legend: *A= Article; C = Citation; UC = University Count*

Table: 6.2.5. It gives information on subject wise contribution by number of state universities. Accordingly, Biological Science as subject is at 1st rank and have contribution from 223 state universities, followed by Health Science by having contribution from 213 state universities, Environmental Science, have contribution from 200 universities, Pharmacology and Pharmaceutical Science, have contribution from 200 state universities, Chemistry, have contribution 197 universities, General Science and Technology, have contribution from 197 universities, and so on. However, based subject wise citations received and citations/paper, Agriculture as a subject stands at 1st rank, though its rank in terms of number of state universities contribution is 9th and hace 182 state universities.

Based on above tables data it can be concluded that state universities have contributed in all subjects of ICI, i.e. 49 subject categories. Of course some of the state universities are subjects specific, like Agricultural universities, Health universities, etc. All tables are self explanatory to understand and take out inference of given data.

Research Performance of Deemed Universities

Deemed Universities are centrally funded institutions and have relatively better infrastructure facilities to cater teaching, learning, research and innovation. For this report data has been extracted from ICI database to measure and evaluate the strengths and weaknesses of the Deemed Universities. Here we are comparing performance of Deemed Universities of the country based on their research papers in journals published from India. Based on research papers and citations received counts, a relative position of Deemed Universities have been determined and shown in Tables. The analysis reveals the relative position of a university among the comity of Deemed Universities. Based on this, all stakeholders can take a note to induct corrective and competitive measures. This report may not have names of few Deemed Universities due to the fact that either their contribution is not published in Indian journals or they are relatively new and yet to start scholarly activity. It has been observed that institute/university needs gestation period which may be in the range of 12 to 15 years to deliver expected scholarly output.

The analyzed data is put into tables taking different parameters of evaluation, like articles produced, citations received and citation/paper.

Table: 6.3.1. The Deemed Universities of India are better equipped and some of them are discipline specific and focusing in their define area of discipline for teaching, learning, innovation, and research. This table provides information of top 50 Deemed Universities based on articles, citations received, and citation/paper. Accordingly, first five top Deemed Universities are – IARI, IVRI, NDRI, Indian iInstitute of Science, and Jamia Hamdard University. Out of these five, three are fron agricultural sector and supported by ICAR. Among all Deemed universities, IARI is 1st ranker in terms of articles published and citations received, i.e. 4241, and 4201 respectively. In terms of citations/paper, 'Swami Vivekananda Yoga Anusandhana Samasthana' as institute stands at 1st rank.

Table: 6.3.2. It gives data on top 100 authors of Deemed Universities contribution based on author wise number of articles, citations received to that author and citation/paper. Accordingly, Singh AK of IARI is at 1st rank in terms of number of articles i.e. 107 articles contribution and Sinha SR of IARI is at 1st rank in terms of citatations received and citations/paper. It indicates that Sinha SR work is more qualitative that other 99 top authors of Deemed Universities.

Table: 6.3.3. It gives Deemed University wise number of authors' contribution and their % share in total contribution of 100 top authors work. Accordingly, IVRI is at 1st rank, 35 authors and have 34.62% share in top 100 authors' work of Deemed Universities, followed by IARI, 30 authors and their share is 28.57% to total of 100 auithors work, NDRI, 10 authors, 12.186% share to total of 100 top authors work of Deemed Universities. These top three and followed two others Deemed Universities are from Agricultural sector.

As per this table data, among top 100 authors of 12 Deemed Universities, six (50%) are of agricultural sector.

Table: 6.3.4. It provides journal wise contribution in Indian journals by number of Deemed Universities. Accordingly, 'Current Science' as a journal stands at rank number 1st at all four parameters, 45 Deemed Universities publications, 705 articles 762 citations and 16.933 citations/Paper, followed by 'Journal of Chemical and Pharmaceutical Research' 45 Deemed Universities publications. Based on and articles, Citations and citations/paper, it is at 8th, 7th& 9th rank respectively. For all other remaining journals, details can be referred from the table.

Table: 6.3.5. It gives rank order based on subject wise contribution by number of Deemed Universities. Accordingly, Health Science' as a subject has contribution from 82 Deemed Universities, followed by Biological Science, 77 Deemed Universities contribution, General Science and Technology, 77 Deemed Universities contribution. Agriculture' as a subject is at rank number 1st as per number of articles published and citations received. However, citation per paper, 1st rank is of Veterinary Science, 88.824 citations/paper followed by 'Agricultulture, 77.422 ciatations/paper' and Dairying, Dairy, Animals and Animal Produce, 70.87 citations/paper. It is clearly visible that 'Agricultural Sciences' subjects have domination in subject wise contribution of Deemed Universities.

Table 6.3.1 Research Productivity of Top 50 Deemed Universities: Ranking based on Articles, Citations and Citations/Paper							
SN	**Institute Name**	**A**	**Rank A**	**C**	**Rank C**	**C/P**	**Rank C/P**
1	Indian Agricultural Research Institute (IARI)	4231	**1**	4201	**1**	0.993	**2**
2	Indian Veterinary Research Institute (IVRI)	2473	**2**	1315	**2**	0.532	**21**
3	National Dairy Research Institute (NDRI)	1807	**3**	1076	**3**	0.595	**12**
4	Indian Institute of Science (IIS)	1254	**4**	698	**4**	0.557	**18**
5	Jamia Hamdard University (JHU)	876	**5**	621	**5**	0.709	**4**
6	Sam Higginbottom Institute of Agriculture, Technology and Sciences	815	**6**	314	**9**	0.385	**27**
7	Forest Research Institute (FRI)	745	**7**	408	**6**	0.548	**20**
8	Banasthali University (BU)	526	**8**	342	**7**	0.650	**7**
9	Birla Institute of Technology (BIT)	504	**9**	325	**8**	0.645	**8**
10	Central Institute of Fisheries Education (CIFE)	443	**10**	168	**13**	0.379	**30**
11	Institute of Chemical Technology (ICT)	422	**11**	239	**11**	0.566	**16**
12	Indian School of Mines (ISM)	406	**12**	135	**14**	0.333	**33**
13	Gurukula Kangri Vishwavidyalaya (GKV)	397	**13**	259	**10**	0.652	**6**
14	Birla Institute of Technology and Science (BITS)	327	**14**	108	**19**	0.330	**34**
15	Tata Institute of Social Sciences (TISS)	302	**15**	116	**17**	0.384	**28**
16	K L University (KLU)	296	**16**	95	**22**	0.321	**38**
17	PRIST University (PRISTU)	291	**17**	200	**12**	0.687	**5**
18	Dayalbagh Educational Institute (DEI)	260	**18**	96	**21**	0.369	**31**
19	Tata Institute of Fundamental Research (TIFR)	260	**18**	70	**27**	0.269	**43**
20	Manipal University (MU)	258	**20**	99	**20**	0.384	**29**
21	GITAM University (GITAMU)	252	**21**	68	**28**	0.270	**42**
22	The Gandhigram Rural Institute (GRI)	252	**21**	76	**25**	0.302	**41**
23	Karunya University (KU)	221	**23**	68	**28**	0.308	**39**
24	Dr. M G R Educational and Research Institute University (MGRERIU)	203	**24**	118	**16**	0.581	**15**
25	Maharishi Markandeshwar University (MMU)	197	**25**	64	**31**	0.325	**37**
26	Sant Longowal Institute of Engineering and Technology (SLIET)	185	**26**	63	**32**	0.341	**32**
27	North Eastern Regional Institute of Science and Technology (NERIST)	180	**27**	129	**15**	0.717	**3**
28	International Institute for Population Sciences (IIPS)	173	**28**	57	**35**	0.329	**36**
29	Jaypee Institute of Information Technology (JIIT)	162	**29**	78	**24**	0.481	**24**
30	Avinashilingam Institute for Home Science and Higher Education for Women (AIHSHEW)	146	**30**	15	**50**	0.103	**50**
31	Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)	145	**31**	81	**23**	0.559	**17**
32	Jain University (JU)	138	**32**	26	**44**	0.188	**47**
33	Padmashree Dr. D Y Patil Vidyapeeth (PDYPV)	135	**33**	22	**46**	0.163	**49**
34	Siksha 'O' Anusandhan University (SOAU)	124	**34**	73	**26**	0.589	**13**
35	Institute of Liver and Biliary Sciences (ILBS)	117	**35**	36	**42**	0.308	**39**
36	Sumandeep Vidyapeeth (SV)	117	**35**	65	**30**	0.556	**19**
37	Indira Gandhi Institute of Development Research (IGIDR)	109	**37**	51	**37**	0.468	**25**

S.N	Institute Name	A	Rank A	C	Rank C	C/P	Rank C/P
38	PEC University of Technology (PECUT)	107	**38**	21	**48**	0.196	**46**
39	Graphic Era University (GEU)	104	**39**	63	**32**	0.606	**11**
40	Kalasalingam University (KU)	103	**40**	34	**43**	0.330	**35**
41	Narsee Monjee Institute of Management Studies (NMIMS)	102	**41**	60	**34**	0.588	**14**
42	Datta Meghe Institute of Medical Sciences (DMIMS)	100	**42**	44	**41**	0.440	**26**
43	Amrita Vishwa Vidyapeetham (AVV)	97	**43**	49	**40**	0.505	**23**
44	Periyar Maniammai University (PMU)	96	**44**	22	**46**	0.229	**45**
45	Sri Ramachandra Medical College and Research Institute (SRMCRI)	96	**44**	50	**38**	0.521	**22**
46	Gokhale Institute of Politics and Economics (GIPE)	92	**46**	24	**45**	0.261	**44**
47	Thapar Institute of Engineering and Technology (TIET)	91	**47**	17	**49**	0.187	**48**
48	Vinayaka Missions University (VMU)	91	**47**	56	**36**	0.615	**9**
49	Swami Vivekananda Yoga Anusandhana Samsthana (SVYAS)	90	**49**	112	**18**	1.244	**1**
50	Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya (SCSVM)	82	**50**	50	**38**	0.610	**10**

Legend: A = Article; C = Citation; C/P = Citation/Paper

Table 6.3.2 Top 100 Deemed University's Authors Research Productivity: Ranking based on Articles, Citations and Citations/Paper

SN	Authors	Institutes	A	Rank A	C	Rank C	C/P	Rank C/P
1	Singh A K	Indian Agricultural Research Institute (IARI)	107	1	115	3	1.075	33
2	Pawde A M	Indian Veterinary Research Institute (IVRI)	85	2	32	43	0.376	79
3	Sharma A K	Indian Veterinary Research Institute (IVRI)	77	3	40	28	0.519	62
4	Seth A K	Sumandeep Vidyapeeth (SV)	77	3	28	53	0.364	81
5	Singh S K	Indian Agricultural Research Institute (IARI)	74	5	71	9	0.959	39
6	Aithal H P	Indian Veterinary Research Institute (IVRI)	71	6	24	58	0.338	87
7	Singh Avtar	National Dairy Research Institute (NDRI)	68	7	58	17	0.853	43
8	Kinjavdekar P	Indian Veterinary Research Institute (IVRI)	65	8	22	60	0.338	86
9	Amarpal	Indian Veterinary Research Institute (IVRI)	64	9	20	66	0.313	91
10	Gupta A K	National Dairy Research Institute (NDRI)	63	10	32	43	0.508	67
11	Sharma R K	Indian Agricultural Research Institute (IARI)	62	11	122	2	1.968	7
12	Gandhi R S	National Dairy Research Institute (NDRI)	61	12	65	12	1.066	34
13	Chakravarty A K	National Dairy Research Institute (NDRI)	60	13	27	54	0.450	72
14	Simon Sobita	Sam Higginbottom Institute of Agriculture, Technology and Sciences (SHIATS)	57	14	31	48	0.544	59
15	Mohanty T K	National Dairy Research Institute (NDRI)	54	15	21	64	0.389	78
16	Kundu S S	National Dairy Research Institute (NDRI)	54	15	59	15	1.093	32
17	Sekar N	Institute of Chemical Technology (ICT)	53	17	5	98	0.094	98
18	Chakraborty S K	Central Institute of Fisheries Education	53	17	17	72	0.321	90
19	Sharma Veena	Banasthali University (BU)	50	19	96	5	1.920	9
20	Maiti S K	Indian Veterinary Research Institute (IVRI)	48	20	26	56	0.542	61
21	Rana D S	Indian Agricultural Research Institute (IARI)	47	21	54	22	1.149	25
22	Prabhu K V	Indian Agricultural Research Institute (IARI)	47	21	59	15	1.255	18

SN	Authors	Institutes	A	Rank A	C	Rank C	C/P	Rank C/P
23	Gupta M K	Forest Research Institute (FRI)	45	23	38	35	0.844	44
24	Pankaj	Indian Agricultural Research Institute (IARI)	45	23	55	21	1.222	19
25	Srivastava S K	Indian Veterinary Research Institute (IVRI)	44	25	16	75	0.364	81
26	Chander Mahesh	Indian Veterinary Research Institute (IVRI)	43	26	22	60	0.512	66
27	Sharma Vinay	Banasthali University (BU)	43	26	29	50	0.674	52
28	Mendiratta S K	Indian Veterinary Research Institute (IVRI)	43	26	10	91	0.233	96
29	Kumar Naveen	Indian Veterinary Research Institute (IVRI)	42	29	14	84	0.333	88
30	Singh Gurdeep	Indian School of Mines (ISM)	42	29	15	79	0.357	83
31	Agrawal Amit	Datta Meghe Institute of Medical Sciences (DMIMS)	41	31	14	84	0.341	85
32	Ahmad Sayeed	Jamia Hamdard University (JHU)	41	31	10	91	0.244	94
33	Sharma R R	Indian Agricultural Research Institute (IARI)	41	31	45	23	1.098	31
34	Dutt Triveni	Indian Veterinary Research Institute (IVRI)	40	34	16	75	0.400	75
35	Sharma K	Indian Veterinary Research Institute (IVRI)	40	34	56	20	1.400	16
36	Singh A K	National Dairy Research Institute (NDRI)	40	34	16	75	0.400	75
37	Shivay Y S	Indian Agricultural Research Institute (IARI)	39	37	81	7	2.077	5
38	Ansari S H	Jamia Hamdard University (JHU)	39	37	44	26	1.128	28
39	Dutta Narayan	Indian Veterinary Research Institute (IVRI)	39	37	39	31	1.000	36
40	Pattanaik A K	Indian Veterinary Research Institute (IVRI)	39	37	39	31	1.000	36
41	Srivastava Chitra	Indian Agricultural Research Institute (IARI)	38	41	32	43	0.842	45
42	Dhama K	Indian Veterinary Research Institute (IVRI)	38	41	22	60	0.579	57
43	Naithani H B	Forest Research Institute (FRI)	38	41	34	38	0.895	41
44	Jaiswar A K	Central Institute of Fisheries Education (CIFE)	38	41	9	95	0.237	95
45	Singh B P	Indian Veterinary Research Institute (IVRI)	38	41	14	84	0.368	80
46	Prasad V M	Sam Higginbottom Institute of Agriculture, Technology and Sciences (SHIATS)	38	41	8	97	0.211	97
47	Gautam R D	Indian Agricultural Research Institute (IARI)	38	41	57	18	1.500	13
48	Kumar Dinesh	Indian Agricultural Research Institute (IARI)	37	48	57	18	1.541	12
49	Rao J R	Indian Veterinary Research Institute (IVRI)	37	48	43	27	1.162	23
50	Nagendra H R	Swami Vivekananda Yoga Anusandhana Samsthana (SVYAS)	37	48	71	9	1.919	10
51	Sachdeva G K	National Dairy Research Institute (NDRI)	37	48	30	49	0.811	48
52	Dass R S	Indian Veterinary Research Institute (IVRI)	37	48	33	41	0.892	42
53	Sharma M C	Indian Veterinary Research Institute (IVRI)	36	53	40	28	1.111	29
54	Thakur S S	National Dairy Research Institute (NDRI)	36	53	65	12	1.806	11
55	Yardi Sujata	Padmashree Dr. D Y Patil Vidyapeeth (PDYPV)	36	53	1	100	0.028	100
56	Patnaik L M	Indian Institute of Science (IIS)	36	53	2	99	0.056	99
57	Rana K S	Indian Agricultural Research Institute (IARI)	36	53	72	8	2.000	6
58	Joshi B D	Gurukula Kangri Vishwavidyalaya (GKV)	35	58	15	79	0.429	74
59	Das T K	Indian Agricultural Research Institute (IARI)	35	58	29	50	0.829	47
60	Verma A K	Indian Veterinary Research Institute (IVRI)	35	58	19	68	0.543	60
61	Sahoo R N	Indian Agricultural Research Institute (IARI)	35	58	18	69	0.514	65
62	Garg A K	Indian Veterinary Research Institute (IVRI)	35	58	32	43	0.914	40
63	Singh R K	Indian Veterinary Research Institute (IVRI)	34	63	27	54	0.794	49

SN	Authors	Institutes	A	Rank A	C	Rank C	C/P	Rank C/P
64	Nautiyal S	Forest Research Institute (FRI)	34	63	23	59	0.676	51
65	Sharma B D	Indian Veterinary Research Institute (IVRI)	34	63	9	95	0.265	93
66	Singh G P	Indian Agricultural Research Institute (IARI)	34	63	21	64	0.618	54
67	Behera T K	Indian Agricultural Research Institute (IARI)	33	67	39	31	1.182	22
68	Singh D K	Indian Agricultural Research Institute (IARI)	33	67	15	79	0.455	70
69	Laddha K S	Institute of Chemical Technology (ICT)	33	67	15	79	0.455	70
70	Kumar Amit	Indian Veterinary Research Institute (IVRI)	33	67	17	72	0.515	64
71	Deshmukh P S	Indian Agricultural Research Institute (IARI)	33	67	40	28	1.212	20
72	Teli M D	Institute of Chemical Technology (ICT)	32	72	15	79	0.469	68
73	Raina O K	Indian Veterinary Research Institute (IVRI)	32	72	10	91	0.313	91
74	Datta S C	Indian Agricultural Research Institute (IARI)	32	72	18	69	0.563	58
75	Ramamurthy V V	Indian Agricultural Research Institute (IARI)	32	72	37	36	1.156	24
76	Singh P	Indian Veterinary Research Institute (IVRI)	32	72	20	66	0.625	53
77	Sagar V R	Indian Agricultural Research Institute (IARI)	31	77	87	6	2.806	3
78	Banerjee P S	Indian Veterinary Research Institute (IVRI)	31	77	32	43	1.032	35
79	Sirohi S K	National Dairy Research Institute (NDRI)	31	77	11	90	0.355	84
80	Agarwal D K	Indian Agricultural Research Institute (IARI)	31	77	16	75	0.516	63
81	Chander Subhash	Indian Agricultural Research Institute (IARI)	31	77	69	11	2.226	4
82	Chauhan R S	Indian Veterinary Research Institute (IVRI)	31	77	37	36	1.194	21
83	Kumar Jitendra	Indian Agricultural Research Institute (IARI)	31	77	18	69	0.581	56
84	Lavanya G Roopa	Sam Higginbottom Institute of Agriculture, Technology and Sciences (SHIATS)	31	77	26	56	0.839	46
85	Jain R K	Indian Agricultural Research Institute (IARI)	31	77	60	14	1.935	8
86	Singh S K	Indian Veterinary Research Institute (IVRI)	30	86	13	88	0.433	73
87	Lal Abhilasha A	Sam Higginbottom Institute of Agriculture, Technology and Sciences (SHIATS)	30	86	34	38	1.133	26
88	Munshi A D	Indian Agricultural Research Institute (IARI)	30	86	45	23	1.500	13
89	Sinha S R	Indian Agricultural Research Institute (IARI)	30	86	173	1	5.767	1
90	Kumar Ashok	Indian Veterinary Research Institute (IVRI)	30	86	10	91	0.333	88
91	Tiwari A K	Indian Veterinary Research Institute (IVRI)	30	86	14	84	0.467	69
92	Prasad K V	Indian Agricultural Research Institute (IARI)	30	86	45	23	1.500	13
93	Mishra A K	Indian Veterinary Research Institute (IVRI)	30	86	39	31	1.300	17
94	Tewari A K	Indian Veterinary Research Institute (IVRI)	30	86	33	41	1.100	30
95	Bhushan Bharat	Indian Veterinary Research Institute (IVRI)	30	86	12	89	0.400	75
96	Prasad Rajendra	Indian Agricultural Research Institute (IARI)	30	86	105	4	3.500	2
97	Joshi P C	Gurukula Kangri Vishwavidyalaya (GKV)	30	86	34	38	1.133	26
98	Kumar Pramod	Indian Agricultural Research Institute (IARI)	29	98	17	72	0.586	55
99	Bahar Nawa	Forest Research Institute (FRI)	29	98	29	50	1.000	36
100	Singh R	Indian Veterinary Research Institute (IVRI)	29	98	22	60	0.759	50

Legend: A = Article; C = Citation; C/P = Citation/Paper

Table 6.3.3 Top 100 Author's productivity of Deemed University				
SN	**University**	**Authors**	**Number of Authors**	**DU wise % of Top Authors Share in 100 Authors Papers**
1	Indian Veterinary Research Institute (IVRI)	Aithal H P	35	34.623
		Amarpal		
		Banerjee P S		
		Bhushan Bharat		
		Chander Mahesh		
		Chauhan R S		
		Dass R S		
		Dhama K		
		Dutt Triveni		
		Dutta Narayan		
		Garg A K		
		Kinjavdekar P		
		Kumar Amit		
		Kumar Ashok		
		Kumar Naveen		
		Maiti S K		
		Mendiratta S K		
		Mishra A K		
		Pattanaik A K		
		Pawde A M		
		Raina O K		
		Rao J R		
		Sharma A K		
		Sharma B D		
		Sharma K		
		Sharma M C		
		Singh B P		
		Singh P		
		Singh R		
		Singh R K		
		Singh S K		
		Srivastava S K		
		Tewari A K		
		Tiwari A K		
		Verma A K		

SN	University	Authors	Number of Authors	DU wise % of Top Authors Share in 100 Authors Papers
2	Indian Agricultural Research Institute (IARI)	Agarwal D K	30	28.578
		Behera T K		
		Chander Subhash		
		Das T K		
		Datta S C		
		Deshmukh P S		
		Gautam R D		
		Jain R K		
		Kumar Dinesh		
		Kumar Jitendra		
		Kumar Pramod		
		Munshi A D		
		Pankaj		
		Prabhu K V		
		Prasad K V		
		Prasad Rajendra		
		Ramamurthy V V		
		Rana D S		
		Rana K S		
		Sagar V R		
		Sahoo R N		
		Sharma R K		
		Sharma R R		
		Shivay Y S		
		Singh A K		
		Singh D K		
		Singh G P		
		Singh S K		
		Sinha S R		
		Srivastava Chitra		
3	National Dairy Research Institute (NDRI)	Chakravarty A K	10	12.186
		Gandhi R S		
		Gupta A K		
		Kundu S S		
		Mohanty T K		
		Sachdeva G K		
		Singh A K		
		Singh Avtar		
		Sirohi S K		
		Thakur S S		

SN	University	Authors	Number of Authors	DU wise % of Top Authors Share in 100 Authors Papers
4	Sam Higginbottom Institute of Agriculture, Technology and Sciences (SHIATS)	Lal Abhilasha A	4	3.772
		Lavanya G Roopa		
		Prasad V M		
		Simon Sobita		
5	Forest Research Institute (FRI)	Bahar Nawa	4	3.530
		Gupta M K		
		Naithani H B		
		Nautiyal S		
6	Institute of Chemical Technology (ICT)	Laddha K S	3	2.853
		Sekar N		
		Teli M D		
7	Banasthali University (BU)	Sharma Veena	2	2.249
		Sharma Vinay		
8	Central Institute of Fisheries Education (CIFE)	Chakraborty S K	2	2.200
		Jaiswar A K		
9	Jamia Hamdard University (JHU)	Ahmad Sayeed	2	1.934
		Ansari S H		
	Gurukula Kangri Vishwavidyalaya (GKV)	Joshi B D	2	1.572
		Joshi P C		
10	Datta Meghe Institute of Medical Sciences (DMIMS)	Agrawal Amit	1	0.991
		Seth A K	1	1.862
11	Swami Vivekananda Yoga Anusandhana Samsthana (SVYAS)	Nagendra H R	1	0.895
		Patnaik L M	1	0.870
12	Indian School of Mines (ISM)	Singh Gurdeep	1	1.015
		Yardi Sujata	1	0.870

Legend: DU = Deemed University

Table 6.3.4 Top 50Indian Journals:Ranking based on Number of Deemed University											
SN	**Journal Name**	**UC**	**Rank UC**	**A**	**Rank A**	**C**	**Rank C**	**A/UC**	**Rank A/UC**	**C/UC**	**Rank C/UC**
1	CURRENT SCIENCE	45	**1**	705	**1**	762	**1**	15.667	**1**	16.933	**1**
2	JOURNAL OF CHEMICAL AND PHARMACEUTICAL RESEARCH	45	**1**	191	**8**	166	**7**	4.244	**16**	3.689	**9**
3	RESEARCH JOURNAL OF PHARMACEUTICAL, BIOLOGICAL, AND CHEMICAL SCIENCES	44	**3**	165	**10**	46	**20**	3.750	**22**	1.045	**34**
4	INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY	42	**4**	174	**9**	173	**6**	4.143	**18**	4.119	**7**
5	INTERNATIONAL JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES	42	**4**	307	**2**	268	**2**	7.310	**5**	6.381	**6**
6	INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE AND TECHNOLOGY	41	**6**	252	**3**	57	**16**	6.146	**7**	1.390	**27**
7	INTERNATIONAL JOURNAL OF CHEMTECH RESEARCH	40	**7**	198	**7**	55	**18**	4.950	**13**	1.375	**28**
8	INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN COMPUTER SCIENCE	37	**8**	138	**14**	0	**49**	3.730	**24**	0.000	**49**
9	INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES: REVIEW AND RESEARCH	37	**8**	138	**14**	58	**14**	3.730	**24**	1.568	**23**
10	JOURNAL OF PHARMACY RESEARCH	37	**8**	209	**6**	111	**9**	5.649	**9**	3.000	**12**
11	ASIAN JOURNAL OF CHEMISTRY	36	**11**	214	**5**	95	**11**	5.944	**8**	2.639	**14**
12	INTERNATIONAL JOURNAL ON COMPUTER SCIENCE AND ENGINEERING	34	**12**	129	**17**	35	**23**	3.794	**21**	1.029	**35**
13	ASIAN JOURNAL OF PHARMACEUTICAL AND CLINICAL RESEARCH	32	**13**	96	**18**	68	**13**	3.000	**31**	2.125	**17**

SN	Journal Name	UC	Rank UC	A	Rank A	C	Rank C	A/UC	Rank A/UC	C/UC	Rank C/UC
14	ASIAN JOURNAL OF MICROBIOLOGY BIOTECHNOLOGY & ENVIRONMENTAL SCIENCES	28	**14**	63	**33**	8	**44**	2.250	**43**	0.286	**44**
15	INTERNATIONAL JOURNAL OF PHARMTECH RESEARCH	28	**14**	88	**23**	99	**10**	3.143	**28**	3.536	**10**
16	JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH	27	**16**	70	**30**	15	**36**	2.593	**37**	0.556	**40**
17	INDIAN JOURNAL OF EXPERIMENTAL BIOLOGY	26	**17**	142	**13**	177	**5**	5.462	**10**	6.808	**4**
18	INTERNATIONAL JOURNAL OF CHEMICAL SCIENCES	26	**17**	88	**23**	33	**25**	3.385	**27**	1.269	**31**
19	POLLUTION RESEARCH	25	**19**	47	**41**	14	**37**	1.880	**48**	0.560	**39**
20	JOURNAL OF SCIENTIFIC & INDUSTRIAL RESEARCH	24	**20**	74	**26**	43	**21**	3.083	**29**	1.792	**18**
21	ASIAN JOURNAL OF RESEARCH IN CHEMISTRY	23	**21**	60	**36**	10	**41**	2.609	**36**	0.435	**43**
22	INTERNATIONAL JOURNAL OF CURRENT RESEARCH AND REVIEW	23	**21**	68	**32**	1	**47**	2.957	**32**	0.043	**47**
23	THE CRITERION: AN INTERNATIONAL JOURNAL IN ENGLISH	23	**21**	57	**37**	1	**47**	2.478	**40**	0.043	**47**
24	ASIAN JOURNAL OF RESEARCH IN BUSINESS ECONOMICS AND MANAGEMENT	22	**24**	63	**33**	0	**49**	2.864	**33**	0.000	**49**
25	JOURNAL OF CHEMICAL SCIENCE	22	**24**	162	**11**	34	**24**	7.364	**4**	1.545	**24**
26	JOURNAL OF FOOD SCIENCE AND TECHNOLOGY	22	**24**	224	**4**	245	**3**	10.182	**2**	11.136	**3**
27	BULLETIN OF MATERIALS SCIENCE	21	**27**	135	**16**	58	**14**	6.429	**6**	2.762	**13**
28	ADVANCED BIOTECH	20	**28**	51	**39**	13	**39**	2.550	**38**	0.650	**37**
29	INDIAN JOURNAL OF BIOTECHNOLOGY	20	**28**	92	**21**	49	**19**	4.600	**15**	2.450	**15**

SN	Journal Name	UC	Rank UC	A	Rank A	C	Rank C	A/UC	Rank A/UC	C/UC	Rank C/UC
30	INDIAN JOURNAL OF ENVIRONMENTAL PROTECTION	20	**28**	61	**35**	12	**40**	3.050	**30**	0.600	**38**
31	INDIAN JOURNAL OF MEDICAL RESEARCH (THE)	20	**28**	53	**38**	78	**12**	2.650	**35**	3.900	**8**
32	INTERNATIONAL JOURNAL OF ENVIRONMENTAL SCIENCES	20	**28**	46	**42**	33	**25**	2.300	**41**	1.650	**19**
33	JOURNAL OF THE INDIAN CHEMICAL SOCIETY	20	**28**	72	**27**	26	**31**	3.600	**26**	1.300	**30**
34	PRAMANA- JOURNAL OF PHYSICS	20	**28**	151	**12**	29	**28**	7.550	**3**	1.450	**25**
35	ECOLOGY ENVIRONMENT & CONSERVATION	19	**35**	77	**25**	10	**41**	4.053	**19**	0.526	**41**
36	E-JOURNAL OF CHEMISTRY	19	**35**	40	**45**	41	**22**	2.105	**45**	2.158	**16**
37	INDIAN JOURNAL OF MARKETING	19	**35**	41	**44**	22	**34**	2.158	**44**	1.158	**33**
38	JOURNAL OF ENVIRONMENTAL SCIENCE & ENGINEERING	19	**35**	31	**49**	10	**41**	1.632	**49**	0.526	**41**
39	PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, INDIA, SECTION B - BIOLOGICAL SCIENCES	19	**35**	71	**29**	31	**27**	3.737	**23**	1.632	**21**
40	SADHANA - ACADEMY PROCEEDINGS IN ENGINEERING SCIENCES	19	**35**	95	**19**	14	**37**	5.000	**12**	0.737	**36**
41	INDIAN JOURNAL OF PHARMACEUTICAL SCIENCES	18	**41**	94	**20**	236	**4**	5.222	**11**	13.111	**2**
42	INDIAN JOURNAL OF PHYSICS	18	**41**	51	**39**	56	**17**	2.833	**34**	3.111	**11**
43	INDIAN JOURNAL OF TRADITIONAL KNOWLEDGE	18	**41**	89	**22**	121	**8**	4.944	**14**	6.722	**5**
44	ORIENTAL JOURNAL OF CHEMISTRY	18	**41**	45	**43**	21	**35**	2.500	**39**	1.167	**32**

SN	Journal Name	UC	Rank UC	A	Rank A	C	Rank C	A/UC	Rank A/UC	C/UC	Rank C/UC
45	PROCEEDINGS OF THE INDIAN NATIONAL SCIENCES ACADEMY - PART A: PHYSICAL SCIENCES	18	**41**	69	**31**	29	**28**	3.833	**20**	1.611	**22**
46	DESIDOC JOURNAL OF LIBRARY & INFORMATION TECHNOLOGY	17	**46**	33	**48**	24	**32**	1.941	**47**	1.412	**26**
47	INDIAN JOURNAL OF PURE & APPLIED PHYSICS	17	**46**	39	**46**	23	**33**	2.294	**42**	1.353	**29**
48	INDIAN JOURNAL OF TECHNICAL EDUCATION (THE)	17	**46**	25	**50**	2	**46**	1.471	**50**	0.118	**46**
49	INTERNATIONAL JOURNAL OF APPLIED ENGINEERING RESEARCH	17	**46**	35	**47**	3	**45**	2.059	**46**	0.176	**45**
50	INTERNATIONAL JOURNAL OF DRUG DEVELOPMENT & RESEARCH	17	**46**	72	**27**	28	**30**	4.235	**17**	1.647	**20**

Legend: ***UC = University Counts;*** ***A = Article;*** ***C = Citation***

Table 6.3.5 Ranking of Subjects based on Deemed University Published in Journals from India											
S.N	**Subjects**	**UC**	**Rank UC**	**A**	**Rank A**	**C**	**Rank C**	**A/UC**	**Rank A/UC**	**C/UC**	**Rank C/UC**
1	Health Science	82	**1**	2127	**5**	1004	**9**	25.939	**10**	12.244	**10**
2	Biological Science	77	**2**	2778	**2**	1490	**4**	36.078	**6**	19.351	**7**
3	General Science and Technology	77	**2**	1267	**11**	1046	**8**	16.455	**15**	13.584	**9**
4	Pharmacology and Pharmaceutical Science	74	**4**	2275	**4**	1680	**2**	30.743	**7**	22.703	**6**
5	Engineering Science and Technology	69	**5**	1708	**8**	398	**12**	24.754	**11**	5.768	**17**
6	Chemistry	66	**6**	1771	**7**	778	**10**	26.833	**9**	11.788	**11**
7	Environmental Science	61	**7**	1097	**12**	402	**11**	17.984	**14**	6.590	**15**
8	Management	61	**7**	434	**19**	66	**28**	7.115	**26**	1.082	**38**
9	Social Science	57	**9**	735	**13**	209	**17**	12.895	**16**	3.667	**23**
10	Education	55	**10**	242	**25**	38	**31**	4.400	**37**	0.691	**40**
11	Computer Science and Technology	51	**11**	551	**15**	87	**25**	10.804	**19**	1.706	**32**
12	Biotechnology	50	**12**	459	**17**	227	**15**	9.180	**22**	4.540	**22**
13	Physics	50	**12**	441	**18**	179	**18**	8.820	**23**	3.580	**24**
14	Library and Information Science	46	**14**	231	**26**	115	**22**	5.022	**33**	2.500	**26**
15	Mathematics	46	**14**	271	**23**	82	**26**	5.891	**29**	1.783	**29**
16	Agriculture	45	**16**	3659	**1**	3484	**1**	81.311	**4**	77.422	**2**
17	Statistics	45	**16**	243	**24**	77	**27**	5.400	**31**	1.711	**31**
18	Business and Marketing	42	**18**	224	**27**	55	**29**	5.333	**32**	1.310	**34**
19	Economics	38	**19**	377	**20**	226	**16**	9.921	**20**	5.947	**16**
20	Botany	37	**20**	1412	**10**	1429	**5**	38.162	**5**	38.622	**5**
21	Material Science	33	**21**	311	**21**	100	**24**	9.424	**21**	3.030	**25**
22	Others	33	**21**	215	**29**	158	**19**	6.515	**27**	4.788	**21**
23	Pollution	31	**23**	92	**33**	26	**35**	2.968	**41**	0.839	**39**
24	Arts and Humanities	28	**24**	68	**37**	3	**43**	2.429	**45**	0.107	**44**
25	Food and Beverage Science	27	**25**	489	**16**	292	**14**	18.111	**13**	10.815	**12**
26	Psychology	27	**25**	80	**35**	36	**32**	2.963	**42**	1.333	**33**
27	History and Philosophy of Science and Knowledge	26	**27**	110	**31**	133	**21**	4.231	**38**	5.115	**19**
28	Earth and Geological Science	22	**28**	281	**22**	154	**20**	12.773	**17**	7.000	**14**
29	Forestry	22	**28**	665	**14**	326	**13**	30.227	**8**	14.818	**8**
30	Zoology	22	**28**	1815	**6**	1349	**6**	82.500	**3**	61.318	**4**
31	Textile	19	**31**	110	**31**	23	**36**	5.789	**30**	1.211	**36**
32	Toxicology	19	**31**	217	**28**	103	**23**	11.421	**18**	5.421	**18**

S.N	Subjects	UC	Rank UC	A	Rank A	C	Rank C	A/UC	Rank A/UC	C/UC	Rank C/UC
33	Veterinary Science	17	**33**	2487	**3**	1510	**3**	146.294	**1**	88.824	**1**
34	Dairying, Dairy, Animals and Animals Produce	16	**34**	1704	**9**	1134	**7**	106.500	**2**	70.875	**3**
35	Oceanography and Marine Science	16	**34**	42	**40**	11	**41**	2.625	**44**	0.688	**41**
36	Astronomy, Astrophysics, Space and Geodesy	15	**36**	73	**36**	19	**38**	4.867	**35**	1.267	**35**
37	Remote Sensing	14	**37**	41	**41**	30	**33**	2.929	**43**	2.143	**27**
38	Energy and Fuel Science	13	**38**	64	**38**	23	**36**	4.923	**34**	1.769	**30**
39	Domestic Science	12	**39**	92	**33**	14	**39**	7.667	**24**	1.167	**37**
40	Rural development	12	**39**	27	**45**	1	**44**	2.250	**46**	0.083	**45**
41	Anthropology	9	**41**	28	**44**	1	**44**	3.111	**40**	0.111	**43**
42	Water	8	**42**	38	**42**	5	**42**	4.750	**36**	0.625	**42**
43	Fishery	7	**43**	152	**30**	51	**30**	21.714	**12**	7.286	**13**
44	Law	6	**44**	11	**47**	0	**46**	1.833	**47**	0.000	**46**
45	Meteorology	6	**44**	36	**43**	29	**34**	6.000	**28**	4.833	**20**
46	Population Studies	6	**44**	46	**39**	12	**40**	7.667	**24**	2.000	**28**
47	Telecommunication	5	**47**	16	**46**	0	**46**	3.200	**39**	0.000	**46**
48	Nanoscience and Nanotechnology	1	**48**	1	**48**	0	**46**	1.000	**48**	0.000	**46**

Legend: ***UC = University Counts;*** ***A = Article;*** ***C = Citation;***

Research Performance of Private Universities

In last three decades, establishment of private universities has gained momentum, and their number as in 2016 is 349. Aprivate university is a university established through a State/Central Act by a sponsoring body viz. A Society registered under the Societies Registration Act 1860, or any other corresponding law for the time being in force in a State or a Public Trust or a Company registered under Section 25 of the Companies Act, 1956. . For this report, data has been extracted from ICI database to measure and evaluate the strengths and weaknesses of PrivateUniversities. Here we are comparing performance of private universitiesof the country based on their research papers in journals published from India. Based on research papers and citations received counts, a relative position of private universitieshave been computed and shown in Tables. The analysis reveals the relative position of a university among the comity of private universities. Based on this, all stakeholders can take a note to induct corrective and competitive measures. This report may not have names of few private universitiesdue to the fact that either their contribution is not published in Indian journals or they are relatively new and yet to start scholarly activity. It has been observed that institute/university needs gestation period which may be in the range of 12 to 15 years to deliver expected scholarly output.

Table: 6.4.1. It gives data of 'Private Universities' research performance based on number of articles, citations received and citations/paper and accordingly on each parameters rank order has been given in respective column of the table. As per this table, 'SRM University' is at 1st rank, 519 articles, second rank, citations received, 165 citations, and 23rd rank as per citations/paper, 0.318 citations/paper; Jaipur National Universty is at 1st rank in citations received, i.e. 232 citations and it stands at 2nd rank in citations/paper, i.e. 0.756 citations/paper; Shobhit University is at 1st rank in citations/paper.

Table: 6.4.2. It gives data of top 100 authors of 'Private Universities' contribution. Accordingly, 'Bhandari Anil' as author of Jodhpur National University is at 1st rank, 32 articles, followed by Singh Ranjit of Shobhit University, 22 articles, Subbarao D of Maharishi Markandeshwar University, 20 articles. Based on citations & citations/paper received 'Singh R' of Shobhit University is at rank 1st, 40 citations and 4.00 citations/paper.

Table: 6.4.3. It gives data with respect to 100 numbers of top authors of Private Universities. Accordingly, Jaipur National University is at 1st rank, 16 authors and their share is 16.85% to the total of 100 top authors work, followed by SRM University, 14 authors and have 12.71% share to the total of top 100 authors work, Lovely Professional University, 9 Authors and have 8.18% share to the total of top 100 authors work,

Presidency University, 9 authors and have 8.96% share to the total of top 100 authors work. Rests of the Private Universities have less than 9 authors' contribution in top 100 authors.

Table: 6.4.4. It gives journal wise account of number of universities contribution. Based on this table, 'International Journal of Advanced Research in Computer Science' is at 1st rank, 56 private universities contribution, and 1st rank, 203 articles. 'Journal of Chemical and Pharmaceutical Research' is at 1st rank as per citations received & citations/paper having 4.838 citations/paper.

Table: 6.4.5. It gives subject wise details of contribution by 'Private Universities'. Pharmacology and Pharmaceutical Science as Subject is at 1st position based on contribution from 91 universities, 1572 articles, 931 citations received and 10.23 citations/paper. It indicates that 'Private Universities' relative focus is on 'Pharnaceutical Science' and also, they are running more courses in this subject area, followed by 'Computer Science and Technology', 78 private universities contribution', Health Science, 77 private universities contribution, Engineering Science and Technology, 74 private universities contribution, Management, 72 private universities contribution, Chemistry, 70 private universities contribution.

Table 6.4.1 Research Productivity of Top 50 Private Universities : Ranking based on Articles, Citations and Citations/Paper							
S.N.	**Institute Name**	**Article**	**Rank A**	**Citation**	**Rank C**	**C/P**	**Rank C/P**
1	S R M University (SRMU)	519	**1**	165	**2**	0.318	**23**
2	Lovely Professional University (LPU)	390	**2**	100	**6**	0.256	**25**
3	Jaipur National University (JNU)	307	**3**	232	**1**	0.756	**2**
4	Presidency University (PU)	264	**4**	143	**3**	0.542	**8**
5	Manipal University (MU)	258	**5**	99	**7**	0.384	**16**
6	Shri Jagdishprasad Jhabarmal Tibrewala University (SJJTU)	241	**6**	49	**12**	0.203	**31**
7	Singhania University (SU)	213	**7**	46	**15**	0.216	**28**
8	Maharishi Markandeshwar University (MMU)	197	**8**	64	**11**	0.325	**21**
9	Mahatma Gandhi University (MGU)	190	**9**	91	**8**	0.479	**9**
10	Integral University (IU)	174	**10**	102	**5**	0.586	**6**
11	Amity University (AU)	166	**11**	48	**14**	0.289	**24**
12	Suresh Gyan Vihar University (SGVU)	124	**12**	75	**9**	0.605	**5**
13	Shobhit University (SU)	118	**13**	119	**4**	1.008	**1**
14	Mewar University (MU)	107	**14**	15	**25**	0.140	**37**
15	Jodhpur National University (JNU)	106	**15**	49	**12**	0.462	**11**
16	Indian Institute of Public Health (IIPH)	99	**16**	65	**10**	0.657	**4**
17	NIMS University (NIMSU)	88	**17**	28	**18**	0.318	**22**
18	University of Petroleum and Energy Studies (UPES)	80	**18**	18	**22**	0.225	**27**
19	I C F A I University (ICFAIU)	77	**19**	36	**16**	0.468	**10**
20	Manav Rachna International University (MRIU)	76	**20**	11	**28**	0.145	**36**
21	Shoolini University (SU)	70	**21**	31	**17**	0.443	**13**
22	I F T M University (IFTMU)	57	**22**	26	**19**	0.456	**12**
23	Pacific University (PU)	56	**23**	3	**39**	0.054	**44**
24	Jaypee University of Information Technology (JUIT)	55	**24**	19	**21**	0.345	**18**
25	The Northcap University (NU)	53	**25**	11	**28**	0.208	**29**
26	Jaypee University of Engineering and Technology (JUET)	52	**26**	5	**37**	0.096	**41**
27	Bhagwant University (BU)	51	**27**	21	**20**	0.412	**15**
28	Manav Bharti University (MBU)	49	**28**	16	**24**	0.327	**20**
29	I T M University (ITMU)	47	**29**	9	**31**	0.191	**32**
30	R K University (RKU)	47	**29**	0	**48**	0.000	**48**
31	Maulana Azad National Urdu University (MANUU)	43	**31**	4	**38**	0.093	**42**
32	C M J University (CMJU)	39	**32**	6	**35**	0.154	**35**
33	Sharda University (SU)	38	**33**	7	**33**	0.184	**33**
34	Centre for Environmental Planning and Technology University (CEPTU)	36	**34**	13	**26**	0.361	**17**
35	M S Ramaiah University of Applied Sciences (MSRUAS)	34	**35**	7	**33**	0.206	**30**
36	Azim Premji University (APU)	33	**36**	1	**45**	0.030	**46**
37	Dr. C V Raman University (CVRU)	33	**36**	1	**45**	0.030	**46**
38	Jayoti Vidyapeeth Women's University (JVWU)	30	**38**	13	**26**	0.433	**14**
39	Teerthanker Mahaveer University (TMU)	29	**39**	3	**39**	0.103	**40**

S.N.	Institute Name	Articles	Rank A	Citations	Rank C	C/P	Rank C/P
40	Galgotias University (GU)	26	**40**	0	**48**	0.000	**48**
41	Mahatma Jyoti Rao Phoole University (MJRPU)	26	**40**	6	**35**	0.231	**26**
42	Sir Padampat Singhania University (SPSU)	26	**40**	3	**39**	0.115	**38**
43	Shri Venkateshwara University (SVU)	25	**43**	2	**43**	0.080	**43**
44	Swami Vivekanand Subharti University (SVSU)	25	**43**	17	**23**	0.680	**3**
45	Sikkim Manipal University (SMU)	24	**45**	8	**32**	0.333	**19**
46	MATS University (MATSU)	21	**46**	0	**48**	0.000	**48**
47	G L A University (GLAU)	20	**47**	1	**45**	0.050	**45**
48	Mangalayatan University (MU)	20	**47**	11	**28**	0.550	**7**
49	Kadi Sarva Vishwavidyalaya (KSV)	19	**49**	2	**43**	0.105	**39**
50	Sunrise University (SU)	19	**49**	3	**39**	0.158	**34**

Legend: A = Article; C= Citation; C/P = Citation/paper

Table 6.4.2 Top 100 Private University's Authors Research Productivity: Ranking based on Articles, Citations and Citations/Paper

SN	Authors	Institutes	A	Rank A	C	Rank C	C/P	Rank C/P
1	Bhandari Anil	Jodhpur National University (JNU)	32	**1**	19	**3**	0.594	**30**
2	Singh Ranjit	Shobhit University (SU)	22	**2**	34	**2**	1.545	**4**
3	Subbarao D	Maharishi Markandeshwar University (MMU)	20	**3**	0	**86**	0.000	**86**
4	Patil Shankargouda	M S Ramaiah University of Applied Sciences (MSRUAS)	20	**3**	3	**48**	0.150	**70**
5	Malik C P	Jaipur National University (JNU)	18	**5**	10	**14**	0.556	**33**
6	Bhandari Anil	Jaipur National University (JNU)	17	**6**	8	**22**	0.471	**38**
7	Ghosh S N	Presidency University (PU)	16	**7**	4	**40**	0.250	**57**
8	Hegde B M	Manipal University (MU)	16	**7**	2	**58**	0.125	**74**
9	Shrivastava B	Jaipur National University (JNU)	16	**7**	9	**18**	0.563	**32**
10	Rai S Padmalatha	Manipal University (MU)	15	**10**	8	**22**	0.533	**36**
11	Prasad Dwarika	Lovely Professional University (LPU)	15	**10**	3	**48**	0.200	**67**
12	Shrivastava Birendra	Jaipur National University (JNU)	15	**10**	8	**22**	0.533	**36**

SN	Authors	Institutes	A	Rank A	C	Rank C	C/P	Rank C/P
13	Arunachalam Kantha D	S R M University (SRMU)	14	**13**	13	**5**	0.929	**16**
14	Merugu Ramchander	Mahatma Gandhi University (MGU)	14	**13**	9	**18**	0.643	**27**
15	Gupta Stuti	Jaipur National University (JNU)	14	**13**	10	**14**	0.714	**26**
16	Ponnusamy S	S R M University (SRMU)	14	**13**	0	**86**	0.000	**86**
17	Gupta Deepak	Maharishi Markandeshwar University (MMU)	13	**17**	13	**5**	1.000	**11**
18	Siddiqui N A	University of Petroleum and Energy Studies (UPES)	13	**17**	6	**32**	0.462	**39**
19	Prasad Kantipudi MVV	R K University (RKU)	13	**17**	0	**86**	0.000	**86**
20	Parashar Bharat	Manav Bharti University (MBU)	13	**17**	2	**58**	0.154	**69**
21	Gopinath P M	Manipal University (MU)	13	**17**	12	**7**	0.923	**17**
22	Kumar Ashish	Lovely Professional University (LPU)	13	**17**	5	**37**	0.385	**47**
23	Gupta Ritu	Shri Venkateshwara University (SVU)	12	**23**	0	**86**	0.000	**86**
24	Harsoliya M S	Shri Jagdishprasad Jhabarmal Tibrewala University (SJJTU)	11	**24**	4	**40**	0.364	**48**
25	Lokhande R S	Jaipur National University (JNU)	11	**24**	4	**40**	0.364	**48**
26	Roy A B	Presidency University (PU)	11	**24**	18	**4**	1.636	**2**
27	Yadav A K	Shobhit University (SU)	11	**24**	10	**14**	0.909	**18**
28	Ramamurthi K	S R M University (SRMU)	11	**24**	0	**86**	0.000	**86**
29	Sarker Debnarayan	Presidency University (PU)	11	**24**	8	**22**	0.727	**25**
30	Nithya T G	S R M University (SRMU)	11	**24**	12	**7**	1.091	**10**
31	Bhattacharya H N	Presidency University (PU)	11	**24**	7	**30**	0.636	**28**
32	Sharma C K	Teerthanker Mahaveer University (TMU)	11	**24**	0	**86**	0.000	**86**
33	Thomas A P	Mahatma Gandhi University (MGU)	11	**24**	6	**32**	0.545	**35**
34	Singh Brijendra	Shobhit University (SU)	11	**24**	10	**14**	0.909	**18**
35	Singhal Manmohan	Jaipur National University (JNU)	11	**24**	9	**18**	0.818	**22**

SN	Authors	Institutes	A	Rank A	C	Rank C	C/P	Rank C/P
36	Muthamizhchelvan C	S R M University (SRMU)	10	**36**	0	**86**	0.000	**86**
37	Singh R	Shobhit University (SU)	10	**36**	40	**1**	4.000	**1**
38	Hussain Arshad	Integral University (IU)	10	**36**	4	**40**	0.400	**45**
39	Jana T K	Presidency University (PU)	10	**36**	3	**48**	0.300	**53**
40	Ram Shri	Jaypee University of Information Technology (JUIT)	10	**36**	3	**48**	0.300	**53**
41	Mathew Beena	Mahatma Gandhi University (MGU)	10	**36**	2	**58**	0.200	**67**
42	Nithiyanantham S	S R M University (SRMU)	10	**36**	4	**40**	0.400	**45**
43	Mohan Mahesh	Mahatma Gandhi University (MGU)	9	**43**	2	**58**	0.222	**63**
44	Gupta Monika	Lovely Professional University (LPU)	9	**43**	2	**58**	0.222	**63**
45	Thiruvadigal D John	S R M University (SRMU)	9	**43**	1	**72**	0.111	**81**
46	Rao Roopa S	M S Ramaiah University of Applied Sciences (MSRUAS)	9	**43**	3	**48**	0.333	**50**
47	Lokhande Rama	Jaipur National University (JNU)	9	**43**	2	**58**	0.222	**63**
48	Chakrabarti S	Presidency University (PU)	9	**43**	1	**72**	0.111	**81**
49	Thakur R C	Lovely Professional University (LPU)	9	**43**	1	**72**	0.111	**81**
50	Arora Avnish Kumar	Maharishi Markandeshwar University (MMU)	9	**43**	2	**58**	0.222	**63**
51	Kamal Mehnaz	Integral University (IU)	9	**43**	0	**86**	0.000	**86**
52	Kumar Arun	Lovely Professional University (LPU)	9	**43**	1	**72**	0.111	**81**
53	Sharma Ganesh N	Jaipur National University (JNU)	9	**43**	12	**7**	1.333	**8**
54	Satyamoorthy K	Manipal University (MU)	9	**43**	4	**40**	0.444	**40**
55	Saxena Deepak	Indian Institute of Public Health (IIPH)	9	**43**	4	**40**	0.444	**40**
56	Palit Sukanchan	University of Petroleum and Energy Studies (UPES)	9	**43**	0	**86**	0.000	**86**
57	Sharma P C	Shoolini University (SU)	9	**43**	0	**86**	0.000	**86**

SN	Authors	Institutes	A	Rank A	C	Rank C	C/P	Rank C/P
58	Sen Ranen	Presidency University (PU)	9	**43**	3	**48**	0.333	**50**
59	Songara Rajendra K	Jaipur National University (JNU)	9	**43**	0	**86**	0.000	**86**
60	Pathak Neelam	Integral University (IU)	9	**43**	5	**37**	0.556	**33**
61	Panwar Vinay	Monad University (MU)	9	**43**	1	**72**	0.111	**81**
62	Rajamane N P	S R M University (SRMU)	9	**43**	3	**48**	0.333	**50**
63	Patil Rajan R	S R M University (SRMU)	8	**63**	1	**72**	0.125	**74**
64	Binu V S	Manipal University (MU)	8	**63**	11	**11**	1.375	**6**
65	Vrat Prem	The Northcap University (NU)	8	**63**	6	**32**	0.750	**23**
66	Zodpey Sanjay	Indian Institute of Public Health (IIPH)	8	**63**	8	**22**	1.000	**11**
67	Ahmad Iffat Zareen	Integral University (IU)	8	**63**	12	**7**	1.500	**5**
68	Ramesh D	Mahatma Gandhi University (MGU)	8	**63**	1	**72**	0.125	**74**
69	Srivastava B	Jaipur National University (JNU)	8	**63**	11	**11**	1.375	**6**
70	Verma H N	Jaipur National University (JNU)	8	**63**	5	**37**	0.625	**29**
71	Ray Rina Rani	Presidency University (PU)	8	**63**	2	**58**	0.250	**57**
72	Rao Nidhi	Suresh Gyan Vihar University (SGVU)	8	**63**	2	**58**	0.250	**57**
73	Kolhal Surekha	Jaipur National University (JNU)	8	**63**	2	**58**	0.250	**57**
74	Fareed Sheeba	Integral University (IU)	8	**63**	7	**30**	0.875	**20**
75	Singh Joginder	Lovely Professional University (LPU)	8	**63**	1	**72**	0.125	**74**
76	Sudhanshu	Suresh Gyan Vihar University (SGVU)	8	**63**	2	**58**	0.250	**57**
77	Mittal Sandhya	Suresh Gyan Vihar University (SGVU)	8	**63**	2	**58**	0.250	**57**
78	Lokwani Priyanka	Jaipur National University (JNU)	8	**63**	6	**32**	0.750	**23**
79	Chatterjee A	Presidency University (PU)	8	**63**	8	**22**	1.000	**11**
80	Zeeshan Mohd	Integral University (IU)	8	**63**	8	**22**	1.000	**11**
81	Patil Sandip	Shoolini University (SU)	8	**63**	1	**72**	0.125	**74**
82	Pal Bhavana	Shobhit University (SU)	8	**63**	8	**22**	1.000	**11**
83	Kamaraj P	S R M University (SRMU)	8	**63**	1	**72**	0.125	**74**

SN	Authors	Institutes	A	Rank A	C	Rank C	C/P	Rank C/P
84	Singh Harminder	Lovely Professional University (LPU)	8	**63**	1	**72**	0.125	**74**
85	Kiruthika S	S R M University (SRMU)	7	**85**	11	**11**	1.571	**3**
86	Singh Uttam	Shobhit University (SU)	7	**85**	4	**40**	0.571	**31**
87	Gahlot Alka	Mahatma Gandhi University of Medical Sciences and Technology (MGUMST)	7	**85**	0	**86**	0.000	**86**
88	Juneja Dimple	Maharishi Markandeshwar University (MMU)	7	**85**	3	**48**	0.429	**42**
89	Kalyanwat Renu	Jaipur National University (JNU)	7	**85**	9	**18**	1.286	**9**
90	Kamath Ramachandra	Manipal University (MU)	7	**85**	2	**58**	0.286	**55**
91	Gupta Sudhakar	Lovely Professional University (LPU)	7	**85**	1	**72**	0.143	**71**
92	Krishnaraj R	S R M University (SRMU)	7	**85**	0	**86**	0.000	**86**
93	Sharma Pankaj	Jaipur National University (JNU)	7	**85**	1	**72**	0.143	**71**
94	Ramamurthy V	S R M University (SRMU)	7	**85**	0	**86**	0.000	**86**
95	Raja R Balaji	S R M University (SRMU)	7	**85**	3	**48**	0.429	**42**
96	Hooda D S	Jaypee University of Engineering and Technology (JUET)	7	**85**	2	**58**	0.286	**55**
97	Bhandari A	Jodhpur National University (JNU)	7	**85**	1	**72**	0.143	**71**
98	Velmurugan Sellappan	Sunrise University (SU)	7	**85**	3	**48**	0.429	**42**
99	Venkadesan R	Lovely Professional University (LPU)	7	**85**	0	**86**	0.000	**86**
100	Satyamoorthy Kapaettu	Manipal University (MU)	7	**85**	6	**32**	0.857	**21**

Legend: A= Articles; C = Citations; C/P = Citation/Paper

Table 6.4.3 Top 100 Author's productivity of Private University				
SN	**Institutes**	**Authors**	**Number of Authors**	**PU wise % of Top Authors Share in 100 Authors Papers**
1	Jaipur National University (JNU)	Bhandari Anil Gupta Stuti Kalyanwat Renu Kolhal Surekha Lokhande R S Lokhande Rama Lokwani Priyanka Malik C P Sharma Ganesh N Sharma Pankaj Shrivastava B Shrivastava Birendra Singhal Manmohan Songara Rajendra K Srivastava B Verma H N	**16**	**16.859**
2	S R M University (SRMU)	Arunachalam Kantha D Kamaraj P Kiruthika S Krishnaraj R Muthamizhchelvan C Nithiyanantham S Nithya T G Patil Rajan R Ponnusamy S Raja R Balaji Rajamane N P Ramamurthi K Ramamurthy V Thiruvadigal D John	**14**	**12.717**
3	Lovely Professional University (LPU)	Gupta Monika Gupta Sudhakar Kumar Arun Kumar Ashish Prasad Dwarika Singh Harminder Singh Joginder Thakur R C Venkadesan R	**9**	**8.189**

SN	Institutes	Authors	Number of Authors	PU wise % of Top Authors Share in 100 Authors Papers
4	Presidency University (PU)	Bhattacharya H N	**9**	**8.960**
		Chakrabarti S		
		Chatterjee A		
		Ghosh S N		
		Jana T K		
		Ray Rina Rani		
		Roy A B		
		Sarker Debnarayan		
		Sen Ranen		
5	Manipal University (MU)	Binu V S	**7**	**7.225**
		Gopinath P M		
		Hegde B M		
		Kamath Ramachandra		
		Rai S Padmalatha		
		Satyamoorthy K		
		Satyamoorthy Kapaettu		
6	Shobhit University (SU)	Pal Bhavana	**6**	**6.647**
		Singh Brijendra		
		Singh R		
		Singh Ranjit		
		Singh Uttam		
		Yadav A K		
7	Integral University (IU)	Ahmad Iffat Zareen	**6**	**5.010**
		Fareed Sheeba		
		Hussain Arshad		
		Kamal Mehnaz		
		Pathak Neelam		
		Zeeshan Mohd		
8	Mahatma Gandhi University (MGU)	Mathew Beena	**5**	**5.010**
		Merugu Ramchander		
		Mohan Mahesh		
		Ramesh D		
		Thomas A P		
9	Maharishi Markandeshwar University (MMU)	Arora Avnish Kumar	**4**	**4.721**
		Gupta Deepak		
		Juneja Dimple		
		Subbarao D		
10	Suresh Gyan Vihar University (SGVU)	Mittal Sandhya	**3**	**2.312**
		Rao Nidhi		
		Sudhanshu		
11	University of Petroleum and Energy Studies (UPES)	Palit Sukanchan	**2**	**2.119**
		Siddiqui N A		

SN	Institutes	Authors	Number of Authors	PU wise % of Top Authors Share in 100 Authors Papers
12	Jodhpur National University (JNU)	Bhandari A Bhandari Anil	**2**	**3.757**
13	M S Ramaiah University of Applied Sciences (MSRUAS)	Patil Shankargouda Rao Roopa S	**2**	**2.794**
14	Indian Institute of Public Health (IIPH)	Saxena Deepak Zodpey Sanjay	**2**	**1.638**
15	Shoolini University (SU)	Patil Sandip Sharma P C	**2**	**1.638**
16	Manav Bharti University (MBU)	Parashar Bharat	**1**	**1.252**
17	R K University (RKU)	Prasad Kantipudi MVV	**1**	**1.252**
18	Shri Venkateshwara University (SVU)	Gupta Ritu	**1**	**1.156**
19	Shri Jagdishprasad Jhabarmal Tibrewala University (SJJTU)	Harsoliya M S	**1**	**1.060**
20	Teerthanker Mahaveer University (TMU)	Sharma C K	**1**	**1.060**
21	Jaypee University of Information Technology (JUIT)	Ram Shri	**1**	**0.963**
22	Monad University (MU)	Panwar Vinay	**1**	**0.867**
23	The Northcap University (NU)	Vrat Prem	**1**	**0.771**
24	Jaypee University of Engineering and Technology (JUET)	Hooda D S	**1**	**0.674**
25	Mahatma Gandhi University of Medical Sciences and Technology (MGUMST)	Gahlot Alka	**1**	**0.674**
26	Sunrise University (SU)	Velmurugan Sellappan	**1**	**0.674**

Legend: PU = Private University

Table 6.4. 4 Top 50Indian Journals wherein Private University have Published their Research											
SN	**JournalName**	**UC**	**Rank UC**	**A**	**Rank A**	**C**	**Rank C**	**A/UC**	**Rank A/UC**	**C/UC**	**Rank C/UC**
1	INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN COMPUTER SCIENCE	56	**1**	203	**1**	5	**32**	3.625	**10**	0.089	**40**
2	INTERNATIONAL JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES	41	**2**	183	**2**	160	**2**	4.463	**7**	3.902	**2**
3	JOURNAL OF CHEMICAL AND PHARMACEUTICAL RESEARCH	37	**3**	171	**3**	179	**1**	4.622	**4**	4.838	**1**
4	INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE AND TECHNOLOGY	36	**4**	144	**4**	27	**13**	4.000	**9**	0.750	**23**
5	ASIAN JOURNAL OF RESEARCH IN BUSINESS ECONOMICS AND MANAGEMENT	31	**5**	57	**16**	0	**45**	1.839	**34**	0.000	**45**
6	RESEARCH JOURNAL OF PHARMACEUTICAL, BIOLOGICAL, AND CHEMICAL SCIENCES	30	**6**	138	**6**	27	**13**	4.600	**6**	0.900	**22**
7	THE CRITERION: AN INTERNATIONAL JOURNAL IN ENGLISH	30	**6**	79	**12**	1	**41**	2.633	**22**	0.033	**44**
8	ASIAN JOURNAL OF PHARMACEUTICAL AND CLINICAL RESEARCH	29	**8**	75	**13**	41	**6**	2.586	**23**	1.414	**15**
9	INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES: REVIEW AND RESEARCH	28	**9**	135	**7**	37	**9**	4.821	**3**	1.321	**16**
10	INTERNATIONAL JOURNAL ON COMPUTER SCIENCE AND ENGINEERING	28	**9**	82	**10**	9	**27**	2.929	**16**	0.321	**34**
11	JOURNAL OF PHARMACY RESEARCH	28	**9**	129	**8**	52	**5**	4.607	**5**	1.857	**9**
12	RESEARCH JOURNAL OF PHARMACY AND TECHNOLOGY	27	**12**	81	**11**	11	**25**	3.000	**14**	0.407	**30**
13	INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY	25	**13**	67	**14**	66	**4**	2.680	**20**	2.640	**6**
14	INTERNATIONAL JOURNAL OF CHEMTECH RESEARCH	24	**14**	144	**4**	39	**7**	6.000	**2**	1.625	**12**
15	ASIAN JOURNAL OF RESEARCH IN SOCIAL SCIENCES AND HUMANITIES	22	**15**	36	**27**	0	**45**	1.636	**39**	0.000	**45**
16	PACIFIC BUSINESS REVIEW INTERNATIONAL	22	**15**	50	**20**	1	**41**	2.273	**28**	0.045	**43**
17	INTERNATIONAL JOURNAL OF DRUG DEVELOPMENT	20	**17**	53	**19**	22	**16**	2.650	**21**	1.100	**20**

SN	JournalName	UC	Rank UC	A	Rank A	C	Rank C	A/UC	Rank A/UC	C/UC	Rank C/UC
18	INTERNATIONAL JOURNAL OF PHARMACY AND TECHNOLOGY	20	**17**	37	**25**	12	**24**	1.850	**33**	0.600	**25**
19	INTERNATIONAL JOURNAL OF PHARMTECH RESEARCH	20	**17**	56	**17**	70	**3**	2.800	**18**	3.500	**3**
20	ASIAN JOURNAL OF CHEMISTRY	19	**20**	115	**9**	27	**13**	6.053	**1**	1.421	**14**
21	CURRENT SCIENCE	19	**20**	59	**15**	37	**9**	3.105	**13**	1.947	**8**
22	INTERNATIONAL JOURNAL OF CHEMICAL SCIENCES	19	**20**	49	**21**	2	**38**	2.579	**25**	0.105	**39**
23	INTERNATIONAL JOURNAL OF CURRENT RESEARCH AND REVIEW	19	**20**	49	**21**	1	**41**	2.579	**25**	0.053	**42**
24	ASIAN JOURNAL OF RESEARCH IN CHEMISTRY	17	**24**	55	**18**	6	**30**	3.235	**12**	0.353	**33**
25	INDIAN JOURNAL OF PURE & APPLIED PHYSICS	17	**24**	26	**35**	21	**18**	1.529	**42**	1.235	**18**
26	INTERNATIONAL JOURNAL OF PHARMACEUTICAL RESEARCH AND DEVELOPMENT	17	**24**	37	**25**	22	**16**	2.176	**30**	1.294	**17**
27	BVICAM'S INTERNATIONAL JOURNAL OF INFORMATION TECHNOLOGY	16	**27**	20	**40**	9	**27**	1.250	**47**	0.563	**26**
28	INDIAN JOURNAL OF COMPUTER SCIENCE AND ENGINEERING	15	**28**	22	**38**	2	**38**	1.467	**45**	0.133	**38**
29	INDIAN JOURNAL OF MARKETING	15	**28**	33	**30**	14	**23**	2.200	**29**	0.933	**21**
30	INTERNATIONAL JOURNAL OF ENVIRONMENTAL SCIENCES	15	**28**	26	**35**	11	**25**	1.733	**36**	0.733	**24**
31	JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH	14	**31**	34	**29**	7	**29**	2.429	**27**	0.500	**28**
32	ARYA BHATTA JOURNAL OF MATHEMATICS AND INFORMATICS	13	**32**	35	**28**	39	**7**	2.692	**19**	3.000	**4**
33	INDIAN JOURNAL OF EXPERIMENTAL BIOLOGY	13	**32**	15	**48**	16	**22**	1.154	**50**	1.231	**19**
34	INDIAN JOURNAL OF PHYSIOTHERAPY AND OCCUPATIONAL THERAPY	13	**32**	46	**24**	1	**41**	3.538	**11**	0.077	**41**
35	PHARMA SCIENCE MONITOR: AN INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES	13	**32**	28	**34**	5	**32**	2.154	**31**	0.385	**31**
36	RESEARCHERS WORLD - JOURNAL OF ARTS SCIENCE AND COMMERCE	13	**32**	17	**47**	2	**38**	1.308	**46**	0.154	**37**
37	BULLETIN OF MATERIALS	12	**37**	18	**45**	5	**32**	1.500	**43**	0.417	**29**

SN	JournalName	UC	Rank UC	A	Rank A	C	Rank C	A/UC	Rank A/UC	C/UC	Rank C/UC
38	INDIAN JOURNAL OF COMMERCE & MANAGEMENT STUDIES	12	**37**	21	**39**	3	**36**	1.750	**35**	0.250	**35**
39	INDIAN JOURNAL OF PHARMACEUTICAL SCIENCES	12	**37**	14	**49**	19	**21**	1.167	**49**	1.583	**13**
40	INTERNATIONAL JOURNAL OF PHARMA SCIENCES AND RESEARCH	12	**37**	18	**45**	0	**45**	1.500	**43**	0.000	**45**
41	INTERNATIONAL JOURNAL OF PHARMACEUTICAL AND BIOLOGICAL ARCHIVE	12	**37**	31	**32**	31	**12**	2.583	**24**	2.583	**7**
42	JOURNAL OF YOUNG PHARMACISTS	12	**37**	20	**40**	21	**18**	1.667	**38**	1.750	**11**
43	ORIENTAL JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY	12	**37**	19	**42**	0	**45**	1.583	**40**	0.000	**45**
44	PRAMANA- JOURNAL OF PHYSICS	12	**37**	19	**42**	3	**36**	1.583	**40**	0.250	**35**
45	ASIAN JOURNAL OF MICROBIOLOGY BIOTECHNOLOGY & ENVIRONMENTAL SCIENCES	11	**45**	31	**32**	0	**45**	2.818	**17**	0.000	**45**
46	DRUG INVENTION TODAY	11	**45**	23	**37**	33	**11**	2.091	**32**	3.000	**4**
47	ECONOMIC AND POLITICAL WEEKLY	11	**45**	49	**21**	20	**20**	4.455	**8**	1.818	**10**
48	INTERNATIONAL JOURNAL OF DRUG FORMULATION AND RESEARCH	11	**45**	33	**30**	6	**30**	3.000	**14**	0.545	**27**
49	JOURNAL OF SCIENTIFIC & INDUSTRIAL RESEARCH	11	**45**	13	**50**	0	**45**	1.182	**48**	0.000	**45**
50	JOURNAL OF THE INDIAN CHEMICAL SOCIETY	11	**45**	19	**42**	4	**35**	1.727	**37**	0.364	**32**

Legend:A = Article; C = Citation; UC = University Count

Table 6.4.5 Subject wise Number of Private Universities Contribution											
S. N	**Subject**	**UC**	**Rank UC**	**A**	**Rank A**	**C**	**Rank C**	**A/UC**	**Rank A/UC**	**C/UC**	**Rank C/UC**
1	Pharmacology and Pharmaceutical Science	91	**1**	1572	**1**	931	**1**	17.275	**1**	10.231	**1**
2	Computer Science and Technology	78	**2**	435	**6**	33	**14**	5.577	**7**	0.423	**26**
3	Health Science	77	**3**	825	**2**	339	**2**	10.714	**2**	4.403	**2**
4	Engineering Science and Technology	74	**4**	655	**4**	105	**6**	8.851	**5**	1.419	**10**
5	Management	72	**5**	281	**7**	19	**19**	3.903	**12**	0.264	**32**
6	Chemistry	70	**6**	741	**3**	188	**3**	10.586	**3**	2.686	**5**
7	Biological Science	62	**7**	566	**5**	170	**4**	9.129	**4**	2.742	**4**
8	GENERAL SCIENCE & TECHNOLOGY	57	**8**	245	**10**	110	**5**	4.298	**11**	1.930	**8**
9	Social Science	53	**9**	256	**8**	52	**8**	4.830	**8**	0.981	**16**
10	Business and Marketing	51	**10**	158	**11**	25	**16**	3.098	**17**	0.490	**24**
11	Agriculture	46	**11**	131	**13**	38	**11**	2.848	**21**	0.826	**17**
12	Education	43	**12**	122	**14**	16	**21**	2.837	**22**	0.372	**28**
13	Environmental Science	42	**13**	255	**9**	31	**15**	6.071	**6**	0.738	**20**
14	Physics	34	**14**	99	**18**	37	**12**	2.912	**20**	1.088	**15**
15	Arts and Humanities	33	**15**	92	**19**	1	**36**	2.788	**23**	0.030	**37**
16	Botany	31	**16**	102	**17**	24	**17**	3.290	**15**	0.774	**19**
17	Library and Information Science	31	**16**	143	**12**	37	**12**	4.613	**10**	1.194	**14**
18	Mathematics	30	**18**	116	**15**	41	**9**	3.867	**13**	1.367	**12**
19	Statistics	29	**19**	111	**16**	41	**9**	3.828	**14**	1.414	**11**
20	Biotechnology	28	**20**	87	**20**	16	**21**	3.107	**16**	0.571	**22**
21	Others	26	**21**	47	**23**	21	**18**	1.808	**27**	0.808	**18**
22	Economics	25	**22**	75	**22**	17	**20**	3.000	**18**	0.680	**21**
23	Material Science	22	**23**	44	**24**	6	**25**	2.000	**25**	0.273	**31**
24	Psychology	19	**24**	31	**25**	5	**27**	1.632	**30**	0.263	**33**
25	Earth and Geological Science	17	**25**	82	**21**	58	**7**	4.824	**9**	3.412	**3**
26	Zoology	16	**26**	22	**27**	6	**25**	1.375	**35**	0.375	**27**
27	Toxicology	15	**27**	19	**29**	3	**31**	1.267	**39**	0.200	**36**
28	Forestry	10	**28**	15	**30**	3	**31**	1.500	**33**	0.300	**29**
29	Pollution	10	**28**	30	**26**	0	**38**	3.000	**18**	0.000	**38**
30	Food and Beverage Science	9	**30**	21	**28**	4	**28**	2.333	**24**	0.444	**25**
31	Dairying, Dairy, Animals and Animals Produce	8	**31**	11	**31**	2	**33**	1.375	**35**	0.250	**34**
32	Energy and Fuel Science	7	**32**	7	**36**	4	**28**	1.000	**42**	0.571	**22**
33	Rural development	7	**32**	8	**33**	2	**33**	1.143	**41**	0.286	**30**
34	Astronomy, Astrophysics, Space and Geodesy	6	**34**	6	**38**	0	**38**	1.000	**42**	0.000	**38**
35	Domestic Science	6	**34**	7	**36**	0	**38**	1.167	**40**	0.000	**38**
36	Remote Sensing	6	**34**	11	**31**	16	**21**	1.833	**26**	2.667	**6**
37	Textile	6	**34**	6	**38**	0	**38**	1.000	**42**	0.000	**38**

S. N	Subject_L1	UC	Rank UC	A	Rank A	C	Rank C	A/UC	Rank A/UC	C/UC	Rank C/UC
38	History and Philosophy of Science and Knowledge	5	**38**	8	**33**	9	**24**	1.600	**31**	1.800	**9**
39	Telecommunication	5	**38**	8	**33**	0	**38**	1.600	**31**	0.000	**38**
40	Veterinary Science	5	**38**	5	**41**	0	**38**	1.000	**42**	0.000	**38**
41	Anthropology	4	**41**	4	**44**	0	**38**	1.000	**42**	0.000	**38**
42	Oceanography and Marine Science	4	**41**	4	**44**	0	**38**	1.000	**42**	0.000	**38**
43	Water	4	**41**	6	**38**	1	**36**	1.500	**33**	0.250	**34**
44	Fishery	3	**44**	5	**41**	0	**38**	1.667	**28**	0.000	**38**
45	Law	3	**44**	4	**44**	0	**38**	1.333	**37**	0.000	**38**
46	Nanoscience and Nanotechnology	3	**44**	4	**44**	0	**38**	1.333	**37**	0.000	**38**
47	Population Studies	3	**44**	5	**41**	4	**28**	1.667	**28**	1.333	**13**
48	Meteorology	1	**48**	1	**48**	2	**33**	1.000	**42**	2.000	**7**

Legend: A = Article; C= Citation; UC = University Count

Chapter 7
Findings

- In India, the first journal 'Asiatick Researches' was published in 1788, now over 8,000+ journals in various forms and styles are being published from India.
- 'Indian Citation Index (ICI)', indexes 940 + journals covering all subjects, data depth of 2004 onwards.
- Defines 'Index Journal', 'International Journal', 'National Journal' 'IF' and how to make selection of quality journals.
- Analysis shows that among top 50 foreign countries, China has produced 14986 articles and received 3387 citations, USA produced 11918 articles and received 5655 citations, Iran produced 11755 articles and received 3673 citations. Details of productivity of rest of the countries are in Table 3.1.
- China's, USA's, and Iran's productivity in terms of number of papers stands at rank 1, 2, 3 respectively whereas as per citations / paper, Peru stands at rank 1, Kyrgyzstan is at rank 2, China stands at 29th rank, US stands at 30 and Iran rank is beyond top 50 countries.
- Ranking on papers and citation per paper in journals from India, China's rank is 1 (Nos. papers) and 113 (citations / paper), US is 2nd. and 30th (citations / paper), Iran is at 3rd and 80th (citations per paper).
- Out of top 50 journals, 'Asian Journal of Chemistry, stands at rank number 1, 10262 articles, 2621 citations and these articles contributed by 93 countries.
- Among top journals of foreign publications, 'Journal of Chemical and Pharmaceutical Research, is at 1st rank, 4301 articles, 1513 citations and these articles are from 85 countries.
- In subject-wise contribution by foreign countries, first position is occupied by 'health science' (Table 3.7) and based on citations per paper the first position is occupied by 'history and philosophy of science and knowledge' (Table 3.8).
- In subject-wise contribution of top 50 foreign countries, first three positions are occupied by - Health Science, contribution from 160 countries; Biological Science, 146 countries; Social science, 141 countries (Table 3.9).
- Islamic Azad University of Iran got the first rank among top 50 foreign research institutes/universities (Table 3.10).
- In contributions based on citations per paper 'College of Pharmacy and Pharmaceutical Sciences' got the first rank (Table 3.11).

- Based on number of foreign institutes/universities contribution, first three positions are occupied by - China, 10,228 institutes; United States of America (USA), 6,946 institutes; Iran, 5,218 institutes (Table 3.11).
- Based on number of authors of foreign countries, China, 35,659 authors stands at first position; Iran, 25,063 authors at 2nd; US, 19,853 authors is at 3rd; Turkey, 14,802 authors is at 4th position.
- In state-wise research productivity, Tamil Nadu stands at first position based on 'Articles' produced, second position in terms of 'Citations received to their produced articles and 22 positions in 'Citations / Paper' and Lakshadweep (UT) got the lowest rank (Table 4.1).
- In state-wise contributions of number of institutes based on 'Articles', 'Citations', 'citations / paper' and Article/Institute, top five positions are held by Maharashtra, Tamil Nadu, Karnataka, Uttar Pradesh and Delhi (Table 4.2).
- State wise research output as per number of journals wherein state wise publications published, Uttar Pradesh, Maharashtra, Karnataka, Tamil Nadu and Delhi is in rank order as given in table (Table 4.3).
- State wise number of 'Authors' contribution based on articles, citations, citation per paper. The rank order is - Maharashtra, Tamil Nadu, Karnataka, Uttar Pradesh and Delhi (Table 4.4).
- Subject wise contribution from number of States 'Health Science' is at rank 1st top subject category where in all 36 States of India have made contribution. Subject wise first five top positions are: Health Science (all 36 subjects), and Biological Science, Pharmacology and Pharmaceutical Science, Environmental Science, and Engineering, contribution from 35 States. At the lowest is 'Apiculture' subject category, research contribution from 10 States (Table 4.5).
- State-wise Research Productivity in terms of Journals produced counts; Delhi as state is at 1st rank followed by Maharashtra, Uttar Pradesh, Tamil Nadu and West Bengal, and Puducherry (UT) is at the lowest rank (Table 4.6). Similarly, city-wise number of journals produced, New Delhi is at 1st. rank, followed by Mumbai, Kolkata, Chennai and Bengaluru.
- The discipline specific institutes/universities are performing in their area of research.
- The publication volume in journals published from India is higher in applied science than pure science subjects.
- 52% research output of India is published in Indian journals and 48% is published in foreign journals.
- In few of the subject areas, the number of journals published from India is insignificant and it needs attention of stake holders.

- There are twenty two (22) IITs in India but none and even all of them do not have a single well visible quality journal. Among IITs, top five IITs in terms of articles produced are - IIT Kharagpur, IIT Delhi, IIT Roorkee, IIT Madras and IIT Bombay (Table 5.1.2).
- In subject-wise research productivity of IITs, top five subjects are Engineering Science and Technology, Chemistry, General Science & Technology, Earth and Geological Science and Physics (Table 5.1.3).
- Lists top 100 authors of IITs, who have published papers in Indian journals. Accordingly, Singh, Gurdeep, 42 articles is the top contributor from IISM Dhanbad, followed by Viswanthan, B., 30 articles from IIT Madras. However, based on citations received, Sushil, of IIT Delhi, is on top position, 68 citations credited to his 12 papers, and, respect to citations per paper, three authors, namely – Dwivedi, BN of IIT Varanasi, and Chandra K, & Sharma Apurbba Kumar of IIT Roorkee are on top, 9.400 citations/paper. In top 100 authors, 27 authors are from IIT Delhi, 27.91% share to total contribution of 100 authors, followed by IIT Roorkee, 19 authors and 18.02% share (Table: 5.1.3).
- In top 100 journals of IITs papers, 1st rank journal is 'Indian Journal of Fibre & Textile Research' is on top, 114 articles, and 'Global Journal of Flexible Systems Management' on top, respect to citations received and citations/paper. 'Current Science' is one of the journals among top 100 journals, which has papers from 15 IITs and it is at 1st rank on all three parameters, i.e. articles, citations received and citations/paper (Table: 5.1.5)

- NITs research performance based on articles, citations, and citations per paper has been measured & evaluated and shown in tables (Table: 5.2.1)
- Rank top 100 authors of NITs based on number of papers contributed, citations received and citations/paper. Accordingly, Ganesan N of NIT Calicut is on top, 12 papers; Adhikari Airody Vasudeva of NIT Karnataka is at 1st rank based on 40 citations and 6.667 citations /paper to his 6 articles (Table: 5.2.2)
- Among top 100 authors, 13 authors are from NIT Rourkela, 13.34% share to total papers of 100 authors, followed by 11 articles from NIT Kurukshetra, 11.6% share, 10 articles from NIT Tiruchirappali, 9.97% share, and rest of the NITs have contributed less than 10 articles (Table: 5.2.3).
- Lists top 100 journals wherein NITs have published their research articles. Accordingly, 'International Journal Engineering Science and Technology' is at 1st rank, 42 articles and 'Asian

Journal of Experimental Sciences' is also at 1st rank based on 29 Citations received & 3.22 citations/paper to 9 articles (Table: 5.2.4).

- Top 100 Indian journals of NITs research papers based on number of NITs contribution, articles published, and citations received. Accordingly, 'International Journal of Engineering Science and Technology' is at rank 1st based on number of 158 articles of NITs published, and based citations received 'Indian Journal of Physics' is at 1st rank (Table: 5.2,5).
- Subject wise contribution of NITs, 'Engineering Science and Technology' as a subject is on top, 1736 articles to total of all subjects contribution of NITs and received 318 citations in this subject category, followed by 'Chemistry', 483 articles and 195 citations, 'Material Science' , 320 articles and 96 citations, 'Computer Science and Technology', 192 articles and 28 citations, 'Environmental Science', 183 articles and 61 citations, 'Earth and Geological Science', 167 articles' and 37 citations, and so on. As a subject 'Engineering Science and Technology' is on top, 45.60% share in total of NITs articles contribution, 31.896% citations share received, followed by 'Chemistry' and 'Material Science', 12.687% & 8.40% articles share and 19.559% & 9.629% citations share respectively (Table: 5.2.5 & 5.2.6).
- Lists relatively 4 new NITs, no research papers, namely NIT Andhra Pradesh, NIT Meghalaya, NIT Mizoram and NIT Uttarakhand (Table: 5.2.8).

- Analyzed data reveals that according to IIMs research articles published, citations received, and citation per paper, IIM Ahmedabad is at 1st posion, 202 articles, followed by IIM Kolkata and IIM Lucknow, 121 and 104 articles respectively (Table: 5.3.1).
- IIMs top 100 authors' work in order of their ranks, respect to papers contribution, citations received. Among top 100 authors of all IIMs, first 4 are from IIM Ahmedabad, namely Dholakia Ravindra H, Singh Sukhpal, Sharma Vijay Paul, and Singh Manjari (Table: 5.3.2).
- IIM wise number of authors among top 100 authors shows that 26 authors are from IIM Ahmedabad, 34.29% share of their contribution in 100 authors work, followed by IIM Kolkata, 20 authors and their share is 20.74% share in 100 authors work (Table: 5.3.3).
- IIMs used top 100 Indian journals for publishing their research papers; 'Economic and Political Weekly' is at the 1st rank, 44 articles, followed by 'VIKALPA', 41 articles (Table: 5.3.4).
- Among top 100 journals, journal wise use as per number of IIMs used for their publications, 'VIKALPA' is at 1st rank and it is used by 10 IIMs, followed by 'Decision' used by 9 IIMs (Table: 5.2.5).
- IIMs subject-wise focus areas are – Management, Social Science, and so on (Table: 5.2.6).

- There are 7 IIMs – IIM Nagpur, IIM Visakhapatnam, IIM Bodh Gaya, IIM Amritsar, IIM Sambalpur, IIM Sirmaur, and IIM Jammu which not yet published their research in ICI indexed journal. These IIMs are relatively new and yet to start scholarly publication activities (Table: 5.2 .7).

- ICAR Research System among India's scientific bodies relatively large in numbers and it comprises, research institutes, Research Bureau, Directorates and Project Directorates, National Research Centres, etc. Besies, ICAR has 04 Deemed Universities, over 600 KVKs, Research Stations, etc.
- Four Deemed Universities of ICAR, namely – IARI, IVRI, NDRI, and CIFEE, are very prominent research establishments in India, particularly in agricultural sector. All the 04 has 1st, 2nd, 3rd, and 4th ranks based on research articles published, citations received, and citations/paper (Table: 5.4.1).
- ICAR has 61 research institutes and among all, ICAR Research Complex for NEH Region, stands at 1st rank, 992 articles & 755 citations, followed by IIHR, Bangalore, 659 articles. Out of 61 research institutes, 03 institutes – namely NOFI Gangtok, IIAB Ranchi, and IISR, Mau did not contribute any research paper so far (Table: 5.4.2 & 5.4.3).
- ICAR has 06 National Bureaux, among all 'NBGPR' is at 1st rank based on articles published and citations received and based on citations/paper, 'NBSSLU' at 1st rank (Table: 5.4.4).
- Among 13 Directorates/Project Directorates, 'Directorate of Rapeseed Mustered Research' stands at 1st rank, 190 articles published and 171 citations received (Table: 5.4.5).
- ICAR has 15 National Research Centres but research papers are from 14 only. National Research Centre on Integrated Farming Motihari Bihar has published no paper. In this category NCPIM is at 1st rank based on all the three parameters, i.e. articles published, citations received, and citations per paper (Table: 5.4.6).
- A list of 100 top Indian journals used by ICAR research system for publications and among all 100, 'Indian Journal of Agricultural Science' is at 1st rank on number of articles published. 'Advances in Plant Sciences' is at 1st rank on citations received and based citations/paper, 'Annals of Plant Protection Sciences' is at 1st rank (Table: 5.4.8).
- ICMR was founded in 1911 as an apex body in the medical science research domain of India. Currently, ICMR has its 26 Research Institutes and 06 Regional Medical Research Centres for doing research in medical areas taking care of diseases of regional diversities. RMRC is at 1st rank based on 182 published research papers, followed by NIRT Chennai, 171 articles. In terms of citations received, RMRC is again is at 1st rank, 244 citations, followed NIMR, Delhi, 242 citations. Based on

citations per paper 'Centre for research in Medical Entomology', 2.345 citations /paper is at 1st rank, followed by 'Desert Medicine Research Centre', 1.773 citations /paper (Table: 5.5).

- CSIR is one of the prominent apex research bodies in India and it was established in 1942. Currently, CSIR has 38 National Laboratries/Institutes, 39 outreach centres, 3 innovation complexes, 5 units.
- In terms of research papers contributed, NBRI Lucknow is at 1st rank, 564 articles and 501 citations received. Based on citations/paper, NISTADS is at 1st rank, followed by IGIB Delhi (Table: 5.6).
- DST was established in 1971, the objectives of promoting new areas of science and technology and it are a nodal and apex agency in the country. DST has 20+ autonomous institutes working in different domains of science and technology. On examining DST institutes for their research productivity, it is found that 'BSIP' Lucknow occupies 1st rank, respect articles produced, and citations received, i.e. 382 articles and 490 citations. Based on citations/paper, 'National Innovation Foundation' is at 1st rank, 1.400 citations /paper (Table: 5.7).
- DRDO is a strong network of 50+ Institutes/laboratories in India, and largely they do research in areas of defence requirements/areas. Based on articles published, DRDE is at 1st rank, 181 articles; based on citations received, DFRL is at 1st rank, 174 citations; and based on citations per paper, INMAS is at 1st rank, 1.061 citations / paper (Table: 5.8).

- Among central universities, University of Delhi (UD) got the 1st rank based on number of authors' contribution and 2nd on number of research papers and 15th based on citations per paper. Nalanda University (NU) got the lowest 44thrank based on number of authors and research papers and 41st rank based on citations per paper. Aligarh Muslim University (AMU) got 1st rank based on number of research papers and 2nd on number of authors and 9th on citation per paper. Similarly, BHU have 3rd, 3rd and 9th position, and so on (Table: 6.1.1).
- In subject wise contribution based ranking of central universities, 'Social Science' stands at 1st rank and 'Telecommunication' at lowest rank. Based on number of research papers 'Biological Science' is at 1st.rank and Telecommunication is at lowest rank. Based on citations per paper 'History and Philosophy of Science and Knowledge' got 1st. rank and Telecommunication got lowest rank (Table: 6.1.5).

- Central universities are 47 in numbers but research papers are from 44 universities because 03 universities have not made any contribution. Based on articles published university of Delhi is at 1st rank, 1523 articles, followed by BHU, 1363 articles, whereas, based on citations received '

BHU' stands at 1st rank, 869 citations, followed by HGU, 852 citations, based citations/paper HGU stands at 1st rank, 1.188 citations/paper, followed by IGNOU (Table: 6.1.1).

- Among 100 authors of central universities, Singh TK of Manipur University stands at 1st rank, 66 papers, based on citations received Bhasin MK of University of Delhi is at 1st rank, 76 citations to his 30 papers, and based on citations/paper Watal Geeta is at 1st rank, 3.47 citations per paper (Table: 6.1.2).
- Top 100 authors of central universities reveal that 'Nagaland University' is at 1st rank, its 13 authors and 12.015% share in total of 100 authors work, followed by HNBGU, 12 authors and its share is 10.827% in 100 authors work (Table: 6.1.3).
- AMU is at 1st rank in terms of publishing its 1287 research papers in 329 Indian journals, followed by BHU, 314 journals of India (Table: 6.1.4).
- In subject wise contribution of central universities, 'Social Science' as a subject is at 1st rank wherein 41 universities have their research papers; Biological Science, is at 1st rank based on articles published,citations received and citations per paper (Table: 6.1.5).
- Among top 50 State Universities, PAU, its 4106 articles and 2567 citations received is at 1st rank, followed by Annamalai, 3519 articles 2378 citations. However, based on citations/paper, 'Kuvempu University' is at 1st rank, 1.027 cit /pap (Table: 6.2.1).
- Among top 100 authors of state universities, Manavalan R is the 1st rank top author from Annamalai University, 155 articles, and Acharya Krishnendu is 1st rank author from University of Kolkata, 248 citations & 4.066 citations per paper (Table: 6.2.2).
- Among top 100 authors, PAU has 17 authors and stands at 1st rank in terms of university-wise number of authors, 16.700% share of them in 100 authors total work, followed by UAS Dharwad, 12 authors & 13.300% share, (Table: 6.2.3).
- Top 50 journals wherein based on number of universities published their papers, 'Current Science' is at 1st rank, publications from 132 universities (Table: 6.2.4).
- Based on subject wise contribution by number of universities, 'Biological Science' is at 1st rank, followed by 'Health Science', 223 & 213 universities contribution respectively (Table: 6.2.5)
- Among deemed universities segment, IARI, IVRI, NDRI, IIS, and JHU are in top contributors' category (Table: 6.3.1).
- In top 100 authors of deemed universities, Singh AK of IARI is at 1st rank, 107 articles. Munshi AD is at 1st rank, 173 citations, and 5.767 citations / paper (Table: 6.3.2).

- University-wise number of contributors in top 100 authors, IVRI is at 1st rank, 35 authors and 34.623% share of them in 100 authors work, followed by IARI, 30 authors and 28.578% share of them in 100 authors total work (Table: 6.3.3).
- Top 50 Indian journals of Deemed Universities publications, 'Current Science' is at top 1st rank on all four parameters, i.e. number of universities published their papers, number of articles, citations received and citation/paper (Table: 6.3.4).
- Among State and Deemed Universities, agricultural universities have made significant contributors in all respect relative to general universities.
- Among private universities, SRM is at top 1st rank on number of articles published, and Jaipur National University is at 1st rank on number of citations received and Shobhit University is 1st rank on citation/paper (Table: 6.4.1)
- Among top 100 authors of private universities, 'Bhandari Anil', from Jodhpur National University is at 1st rank, 32 papers. (Table: 6.4.2).
- Among top 100 authors, 16 are from Jaipur National University, 16.859% share in 100 authors work, followed by SRM (Table: 6.4.3).
- In top 50 journals based on number of private universities published papers, 'International Journal of Advanced Research' is at 1st rank, which has published papers from 56 private universities (Table: 6.4.4).
- Based on subject wise research contribution, 'Pharmacology and Pharmaceutical Science' as a subject is 1st rank, contribution from 91 private universities (Table: 6.4.5).

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Indian Citation Index (ICI)

"If you can measure that of which you speak, and can express it by a number, you know something of your subject; but if you cannot measure it, your knowledge is meager and unsatisfactory"
—William Thomson, Lord Kelvin

Indian Citation Index (ICI) is a home-grown abstracts and citation database, with multidisciplinary subject coverage. It provides a search engine to do search and evaluation by researchers, policy makers, decision makers, etc. The ICI database provides data from 2004 onwards and is updated every month. It uses intellectual links by listing both cited and citing works. Like other world citation indices, this enables one to move back in time to previously published papers. But one can also look forward in time to determine who has subsequently cited an earlier piece of research. The objectives of ICI are to ensure access to articles which appear in journals published from India and to have an authentic tool/ground for effective, comprehensive and rigorous evaluation of Indian scholarly works in true sense and spirit.

India being a huge part of the global society has long and distinguished history as a country, possesses capability and vital resources to influence and mark presence on the emerging universe of knowledge. India is contributing good amount of knowledge but there is no tool for its own evaluation and measurement of knowledge being published in journals of Indian origin. At global level a few European and US centric tools/databases are available but coverage of Indian knowledge content, particularly which appears in journals published from India,is negligible. The similar inadequate representation of knowledge data from all other countries is also there in every globally available citation database. Hence, based on these globally available citation databases, measurement and evaluation of research productivity of countries have negligible coverage of their knowledge contents in them, can't be realistic, reliable and comprehensive. To resolve this limitation, some countries, like China, Korea, Japan, etc. have already brought out their own national citation indexes for bridging the gap and enable to produce complete,

realistic and comprehensive analysis for evaluation and measurement of their countries research performance. So, with a view to address this limitation and long felt need of the country, Indian Citation Index (ICI) has been developed and made accessible to scholarly community.

Indian Citation Index (ICI) is a multidisciplinary citation index aiming to index about 1500 research oriented and peer reviewed journals of Indian origin. ICI indexes all discipline journals published from India and thus indexed data is organized into 49 main subject categories with 1000 plus sub-categories of main subjects. Citations symbolize the association of R&D ideas. The references that researchers cite in their papers make explicit links between their current research and prior work in the literature archive. These explicit links are known as intellectual links. Indian Citation Index (ICI) use such intellectual links by listing both cited and citing works and enables one to move back in time to track previously published papers and also forward in time to determine who has subsequently cited an earlier piece of research. Indian Citation Index (ICI) empowers scholarly community to map the knowledge published in journals of India. ICI is useful to all type of users like - researchers, teachers, policy makers, decision makers, evaluators, editors, bibliometricians, librarians, etc. One can use ICI to learn more about how to discover and analyze data, track and measure research, trends, performance, and collaboration of author(s) or institutions, countries, etc. ICI use empowers to take crucial decisions on accurate, objective and sound metrics; track research performance; establish benchmarks; make funding decisions; arrive at decision for recruitments, promotions, rewards & awards, superiority of competitors, priority date of scholarly works; formulate academic & R&D strategies, etc.

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The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, Government, and civil society, through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organization, playing a proactive role in India's development process. Founded in 1895, India's premier business association has over 8000 members, from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 200,000 enterprises from around 240 national and regional sectoral industry bodies.

CII charts change by working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness and business opportunities for industry through a range of specialized services and strategic global linkages. It also provides a platform for consensus-building and networking on key issues.

Extending its agenda beyond business, CII assists industry to identify and execute corporate citizenship programmes. Partnerships with civil society organizations carry forward corporate initiatives for integrated and inclusive development across diverse domains including affirmative action, healthcare, education, livelihood, diversity management, skill development, empowerment of women, and water, to name a few.

The CII theme for 2016-17, Building National Competitiveness, emphasizes Industry's role in partnering Government to accelerate competitiveness across sectors, with sustained global competitiveness as the goal. The focus is on six key enablers: Human Development; Corporate Integrity and Good Citizenship; Ease of Doing Business; Innovation and Technical Capability; Sustainability; and Integration with the World.

With 66 offices, including 9 Centres of Excellence, in India, and 9 overseas offices in Australia, Bahrain, China, Egypt, France, Germany, Singapore, UK, and USA, as well as institutional partnerships with 320 counterpart organizations in 106 countries, CII serves as a reference point for Indian industry and the international business community.

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