

## An analysis of scientific productivity of University of Mysore covered by Web of Science

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### Abstract

*This study has been done to probe scientific productivity of faculty of Mysore University. It helps to monitor the pattern of research. This paper examines the articles covered in web of science for authorship pattern, degree of collaboration and department wise distribution of papers. This study also provides an overview of knowledge dissemination in various forms.*

### Introduction

Web of Science is helpful to find influential authors, who are publishing high-impact, discover important author and/or institutional research collaborations, determine where the most impactful research is being published. With the use of deriving of h Index of individual author, department, group of scholars and particular institution can easily be done. A study has been carried out to analyze the research output of University of Mysore Faculty covering the period 2011 to 2015.

### About citation analysis

Citation analysis is the study of the impact and assumed quality of an article, an author, or an institution based on the number of times works and/or authors have been cited by others.

Counting citations is often called "citation analysis." In your scholarly research, you may need to gauge the importance of a publication by counting the number of times it has been cited by other scholars. When you count the number of times an article has been cited in published research, you gain information about that article's impact on its discipline

### Objectives

1. To find out the year wise contribution
2. To find out the year wise distribution of citation

3. To find out the types of publication
4. To study the authorship pattern
5. To study the Authorship Pattern of Cited References
6. To know the subject wise distribution of Publications
7. To identify the top journals in which publication were made.

### Methodology:

Since the present study is mainly focused on the publications made during the period 2011 to 2015 only 1217 publications were considered. Publication data was downloaded in the month February 2016 from web of Science database. Finally, Data were analysed to identify the *authorship pattern, degree of collaboration and department wise distribution of papers*

**Table -1 Year wise distribution of Publications**

Year	No of articles
2011	308 (25.30%)
2012	210 (17.25%)
2013	219 (17.99 %)
2014	244 (20.04%)
2015	236 (19.39%)
<b>Total</b>	<b>1217</b>

Table 1 depicts the number of research publications of UOM covered in web of Science for the period 2011-2015. The number of articles published per year has consistently witnessed an up-and-down trend during this period. The above table showed that the maximum numbers of 308 (25.308%) articles were covered in the year 2011 and minimum numbers of 210 (17.25%) articles were covered in the year 2012.

**Table- 2 Year wise distribution of citations**

Year	Citations	H index
2011	1138 (38.62%)	16
2012	553 (18.77%)	10
2013	666 (22.60%)	10
2014	497 (16.87%)	10
2015	92 (3.12%)	3
<b>Total</b>	<b>2946</b>	<b>18</b>

The above table shows the year wise distributions of citations. As regards to entire publications covered in web of science for the period 2011 to 2015 the total number of citations received is 2946. 1138 (38.62%) citations produced in the year 2011 followed by 553 (18.77%) citations in 2012, 666 (22.60%) citations in 2013, 497 (16.87%) citations in 2014 and 92 (3.12%) citations in 2015. As regards to h index of total papers it is 18.

**Table -3 Item wise distributions of publications with citations**

Types of documents	Total No. of Publications	Total No. of citation
Article	1132 (92.40%)	2784 (91.18%)
Review	34 (20.77%)	221 (7.23%)
Meeting abstract	23 (1.87%)	0 (0.00%)
Editorial material	11 (0.89%)	3 (0.09%)
News item	10 (0.81%)	7 (0.22%)
Proceedings paper	8 (0.65%)	28 (0.91%)
Letter	4 (0.32%)	10 (0.32%)
correction	2 (0.16%)	0 (0.00%)

Book review	1 (0.08%)	0 (0.00%)
Total	1225 (100%)	3053 (100%)

The above table 3 shows Distribution of various forms of cited documents they include journal article, review, meeting abstract, editorial material, news item, proceedings paper, letter, correction and book review, the majority of the contributors preferred 1132 journal article as the source of information which occupied the top position with the highest number of citations 2784 (91.18%) of the total 3053 citations followed by 34 reviews with 221 (7.23%) citations, 11 editorial materials with 3 (0.09%) citations, 10 news items with 8 (0.91%) citations and 7 Proceedings paper with 28 (0.91%) citations, It is found that the researchers preferred journal articles more frequently for their research work than any other types of communication Channels. It is also observed in the table that none of the research scholars has used editorial material in their scholarly works.

**Table 4: Authorship Pattern**

No of Authors	Total of Publications	Percentage
One	11	0.90 %
Two	214	17.58 %
Three	223	18.32 %
Four	222	18.24 %
Five	231	18.98%
Six	143	11.75 %
Seven	78	6.41 %
Eight	40	3.28 %
Nine	18	1.48 %
Ten	9	0.74 %
Eleven	11	0.90 %
Twelve	6	0.49 %
Thirteen	6	0.49 %
Fourteen	3	0.24 %
Fifteen	1	0.08 %
Seventeen	1	0.08 %

Twenty One	0	0.00 %
	<b>1217</b>	<b>100 %</b>

Table furnishes the details of extent of collaborations, it is observed in the table that majority of 231 articles (19.07%) were found to be five-authored contributions, followed by four-authored (222, 20.18%), three authored contributions (223, 18.08%) and two authored (214, 17.50%). However, contribution from eight authors and more are found quite negligible. Hence, there is a clear domination of collaboration contribution from faculty of University of Mysore. The degree of collaboration is found to be 99.10%.

**Table 5 : Year wise authorship pattern of cited references**

No of Authors	Total No. Citations	Percentage
One	2	0.07%
Two	350	11.88%
Three	512	17.37%
Four	579	19.65%
Five	492	16.7%
Six	458	15.54%
Seven	253	8.58%
Eight	129	4.37%
Nine	40	1.35%
Ten	24	0.81%
Eleven	55	1.86%
Twelve	16	0.54%
Thirteen	29	0.98%
Fourteen	6	0.20%
Fifteen	1	0.03%
Seventeen	0	0.00%
Twenty One	0	0.00%
	<b>2946</b>	

On analyzing the extent of collaborations; it was found that only 579 citations (19.65%) involved four authors followed by 512 citations (17.37%) involved three authors, 492 citations (16.7%) involved five authors and 458 citations (15.54%) involved six authors. Hence, it can be inferred that article done in collaboration are having much impact in the space scholarly research.

**Table 6: Individual Subject wise distribution of publications**

Name	No of papers	Rank	%
Chemistry	381	1	31.30%
Physics	160	2	13.14%
Zoology	75	3	6.16%
Biotechnology	73	4	5.99%
Biochemistry	61	5	5.01%
Microbiology	44	6	3.61%
Food Science and Nutrition	34	7	2.79%
Sugar technology	27	8	2.21%
Botany	19	9	1.56%
Polymer Science	19	10	1.56%
Multidisciplinary subjects	324		26.62%
<b>Total</b>	<b>1217</b>		<b>100%</b>

Table Shows that majority of 381 publications are from chemistry discipline alone (31.30%). The next position is taken by physics 160 (13.14%). This is followed by zoology 75 (6.16%) and biotechnology 73 (5.99%). So it can be inferred that scientists from chemistry have dominated on making highest publication alone. However the contributions from other than science faculty are less according to web of Science.

**Table 7: Journal wise distribution of publications (Only top 10 journals were considered)**

Journal Titles	No of Articles
Acta crystallographica section e structure reports online	100
Molecular crystals and liquid crystals	39
Acta crystallographica section e crystallographic communications	39
Spectrochimica acta part a molecular and biomolecular spectroscopy	38
Plos one	22
Bioorganic medicinal chemistry letters	17

Tetrahedron letters	16
Journal of food science and technology Mysore	15
European journal of medicinal chemistry	15
Rsc advances	13

Above table furnishes the top ten journals covering highest published papers of University of Mysore. It is clear from the table that Acta crystallographica section e structure reports online has 100 publication followed by Molecular crystals and liquid crystals 39 papers, Acta crystallographica section e crystallographic communications 39 papers, Spectrochimica acta part a molecular and biomolecular spectroscopy 38 papers, Plos one 22 papers, Bioorganic medicinal chemistry letters 17 publications, Tetrahedron letters 16 papers, Journal of food science and technology Mysore 15 papers, European journal of medicinal chemistry 15 papers and RSC 13 papers.

So it can be inferred that Acta crystallographica section e structure reports online seem to be more preferred journal by scientist of University of Mysore for having published majority of 100 papers.

### Results and findings

The study has identified some interesting facts from the analysis such as

1. The degree of collaboration is 99.10 it can be inferred that majority of the scientists prefers to contribute their papers jointly.
2. 93.01 % publication of total items falls under the category of articles.
3. Each of 1.47 % of articles have been cited by 18 or more than 18 research scholars across the world making the h index of total number of publication.
4. 0.07 % of single authored publications have received only 2 citations
5. 8.22 % of total publications have been made in Acta crystallographica section e structure reports online. So, it can be inferred that majority of the research scholars prefer Acta crystallographica section e structure reports online to publish their scholarly work.

**Limitation:**

This is based on data collected in February 2016 for the period 2011-2015. Therefore its result may vary on different times. 8 items have been categorized under more than one type of publications so the total number of publications and citations are more in (table 3). Journals with highest papers of University of Mysore covered in the web of science for the period 2011-2015 are considered as top ten journals (Table 7).

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