Highly Cited Papers from University of Mysore: A Citation Mapping

K. Ankasetty
Librarian, Yallamma Dasappa Institute of Technology, Banlgore – 62

M. Surulinathi
Assistant Professor, DLIS,
Bharathidasan University, Tiruchirappalli -24,
E-Mail- surulinathi@gmail.com

Abstract

This article presents a citation-based mapping of data on global scientific activities from University of Mysore research publications using Web of Science Database. Using different scientometric approaches, a continuous increase of both quantitative and qualitative parameters such as h-index and Global Citation Scores. Researchers have published 2551 publications during the time period 2001-2012 and cited at least 60 times by end of 2012 are analysed. Prominent authors have been able to place their papers in high impact journals such as Acta Crystallographica Section E, Molecular Crystals and Liaquid Crystals and Journal of applied polymer Science. The study reveals that the output of University of Mysore research Publications has gradually increased over the years

Keywords

Citation Map; Scientometrics; Mysore University
.

Electronic access

The journal is available at www.jalis.in

Introduction

Scientometrics is a branch of library and information science. Scientometric tools can be used to measure and compare the scientific activities at various levels of aggregation including document wise distribution of publications, institutions, sectors, provinces and countries. They can also be used to measure research collaborations, to map scientific networks and to monitor the evolution of scientific fields. Scientometrics is concerned with the quantitative features and characteristics of science and scientific research.

Objectives

1. To determine the authorship pattern and the nature of collaboration and co-authorship pattern.
2. To identify the authors and Institutions wise h-index and Global Citations Scores.
3. To identify the highly cited papers with Citation Map from University of Mysore.

Methodology

The required data was collected from Web of Science database for the period 2001-2012. It can be seen that nearly 2551 bibliographic records of contribution by University of Mysore researchers over the period of 12 years. The researcher applied the search strings "University of Mysore" that has used for the data extraction from the database of SCI, SSCI and A&HCI (totally 12 years) to download the records based on the above strings. A total of 2551 records were downloaded and analyzed by using Web of Science inbuilt software applications as per the objectives of the study. Further based on citation per paper with Citation map, number of high quality papers, are also applied to find out the quality of the research output. The study aims to analyze the thrust areas of research concentration.

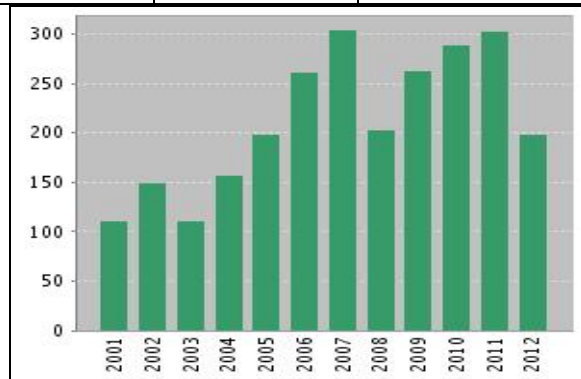## Analysis and Interpretations

Year wise distribution of Publications

Table 4.1 views clearly that during the period 2001 - 2012 a total of 2551 publications were published at Global level. The highest publication is 304 in 2007 followed by 303 papers in 2011 and 289 papers in 2010. The lowest publication is less than 150 from 2001 and 2003, It shows that even minimum numbers of records were scored higher global citations. The
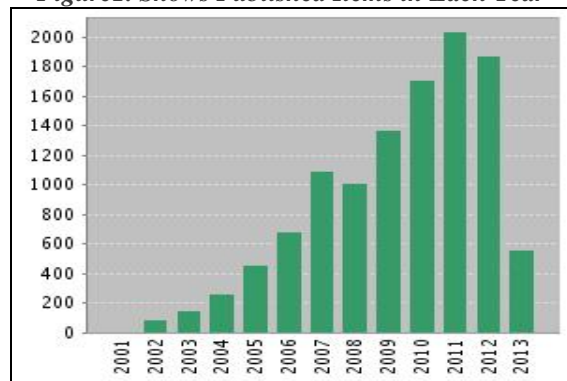
study also reveals all these 2551 publications have TGCS it shows that there is a normal trend in citation is found among the Scientists from University of Mysore.

Table 1 shows that year wise distribution of publications

Years	Records	% of 2551
2007	304	11.917
2011	303	11.878
2010	289	11.329
2009	263	10.31
2006	262	10.27
2008	203	7.958
2012	199	7.801
2005	198	7.762
2004	158	6.194
2002	150	5.88
2001	111	4.351
2003	111	4.351

Figure1. Shows Published Items in Each Year

Figure 2.   Citations in Each Year

Calculating the h-index Value - The h-index factor is based on the depth of the Web of Science subscription and the selected time span. Items that do not appear on the Results page will not be factored into the calculation. If the subscription depth is 10 years, then the h-index value is based on this depth even though a particular author may have published articles more than 10 years ago. Moreover, the calculation only includes items in *Web of Science -* books and articles in non-covered journals are not included. The h-index was developed by J.E. Hirsch and published in Proceedings of the National Academy of Sciences of the United States of America 102 (46): 16569-16572 November 15 2005.

Total Publications:	2551
Sum of the Times Cited [?] :	11302
Sum of Times Cited without self-citations [?] :	8605
Citing Articles[?] :	8448
Citing Articles without self-citations [?]	7320
Average Citations per Item [?] :	4.43
h-index [?] :	36

Document wise Distribution of Publications

The productivity of scientists spreads over variety of publication media, such that journal articles; article, proceedings paper; Meeting abstract, review; letter; editorial materials; correction; meeting abstracts; article, book chapters; correction, Item about an individual and other news items. It is clear from the analysis that the share of journal articles is the most prominent bibliographic form of publication and it occupies 94% (2410) of total publications. Proceedings paper with 67 (2.63%) contributions, Meeting abstract with 50 (2%), Review with 46 (1.8%) contributions, and followed by remaining bibliographic forms. Remaining document types scored the low numbers of output (below one percentage of output) for communication among the scientists.

Table 2. shows that document wise distribution of publications

Document Types	Records	% of 2551
Article	2410	94.473
Proceedings paper	67	2.626
Meeting abstract	50	1.96
Review	46	1.803

Highly Cited Papers from University of Mysore: A Citation Mapping/K.Ankasetty and M.Surulinathi

Editorial material	18	0.706
Book review	11	0.431
Correction	6	0.235
Letter	6	0.235
Biographical item	2	0.078
News item	2	0.078

Prolific Authors
In this analytical period, scientists have produced 2551paper contributions scattered over 650 journals. In accordance to this the researcher has given the ranks according to their highest publication at up to top 100 published authors. The first 100 (1.28 %) of authors are identified as per the highest contributors of research output. The research shows the total global citation score and h-index. The analysis depicts the productivity of authors during the period of study. Yathirajan is the most productive author who published 477 papers with 1278 Total Global Citation Scores with first place and the below table shows only top 10 authors with citation and h-index. Narayana with 323(869) TGCS) articles comes second place and followed by other scientists.

Table 3 shows ranking of authors

#	Authors	records	Citations	h-index	% of 2551
1	Yathirajan HS	477	1278	13	18.699
2	Narayana B	323	869	12	12.662
3	Rangappa KS	192	1034	16	7.526
4	Jasinski JP	157	205	7	6.154
5	Basavaiah K	142	325	8	5.566
6	Butcher RJ	134	267	8	5.253
7	Prasad JS	129	424	9	5.057
8	Sarojini BK	121	483	10	4.743
9	Sridhar MA	106	322	8	4.155
10	Bolte M	105	317	8	4.116

Citation Map of Highly Cited Authors
A Citation Map is a graphical representation that shows the citation relationships (cited references and citing articles) between a paper and other papers using various visualization tools and techniques. Citation mapping analysis can be applied as subject similarity indicators. It is defined as "the frequencies

with two documents are cited together". (**Source:** Web of Science Database)

Highly Cited Papers from Mysore University

Figure3 shows highly cited papers

Citation Map of Byrappa, K

Out of the total 2551 number of publications, author Byrappa is much less in number 25 but Global citation Scores 888 and single paper received 165 citations. The average citation per article of Byrappa is 36. The h-index is 12 and below figure 4.4 shows the citation map.

Figure 4 shows bibliographic datails: Title: Hydrothermal technology for nanotechnology, Author(s): Byrappa, K.; Adschiri, T., Source: PROGRESS IN CRYSTAL GROWTH AND CHARACTERIZATION OF MATERIALS Volume: 53 Issue: 2 Pages: 117-166   DOI: 10.1016/j.pcrysgrow.2007.04.001 Published: 2007 , Times Cited: 165
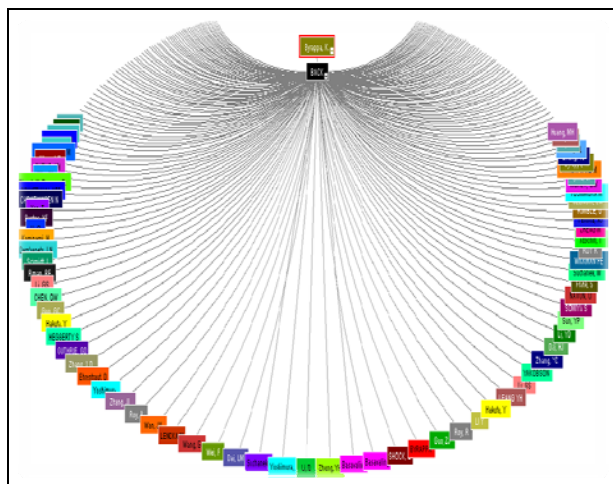
Figure 4 shows bibliographic datails:

Citation Map of Gururaj AE

Out of the total 2551 number of publications, author Gururaj is much less in number 4 but Global citation Scores 108 and single paper received 89 citations. The average citation per article of Gururaj is 26. The h-index is 3 and below figure 4.5 shows the citation map.
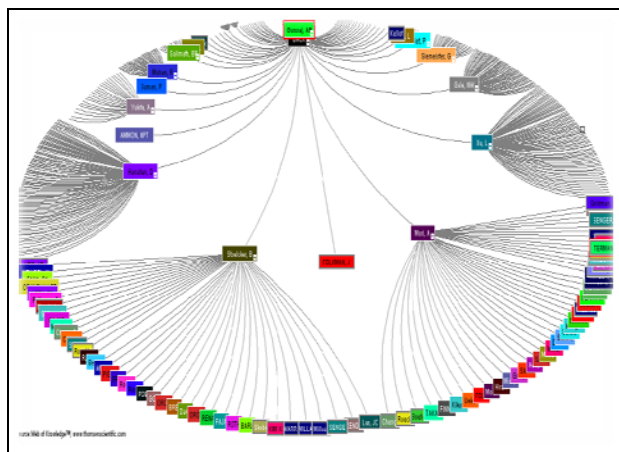

Figure 5 shows bibliographic datails: Title: Molecular mechanisms of anti-angiogenic effect of curcumin , Author(s): Gururaj, AE; Belakavadi, M; Venkatesh, DA; et al.,

Source: BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS Volume: 297 Issue: 4 Pages: 934-942 Article Number: PII S0006-291X(02)02306-9 DOI:10.1016/S0006-291X(02)02306-9 Published: OCT 4 2002, Times Cited: 89.

Citation Map of Girish, KS

Out of the total 2551 number of publications, author Girish is much less in number 22 and Global citation Scores 400 and single paper received 81citations. The average citation per article of Girish is 18. The h-index is 12 and below figure 4.6 shows the citation map.
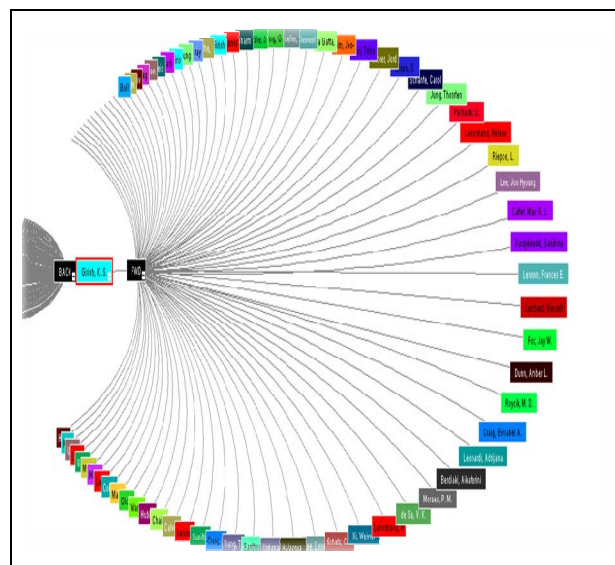

Figure 6 shows bibliographic datails: Title: The magic glue hyaluronan and its eraser hyaluronidase: A biological overview, Author(s): Girish, K. S.; Kemparaju, K., Source: LIFE SCIENCES Volume: 80 Issue: 21 Pages: 1921-1943 DOI: 10.1016/j.lfs.2007.02.037 Published: MAY 1 2007, Times Cited: 81 (from Web of Science)

Citation Map of Arabshahi-Delouee, Sacedeh

Out of the total 2551 number of publications, author Arabshahi-Delouee, Sacedeh is less in number 5 and Global citation Scores 81 and single paper received 66 citations. The average citation per article of Arabshahi is 13. The h-index is 3 and below figure 4.7 shows the citation map.
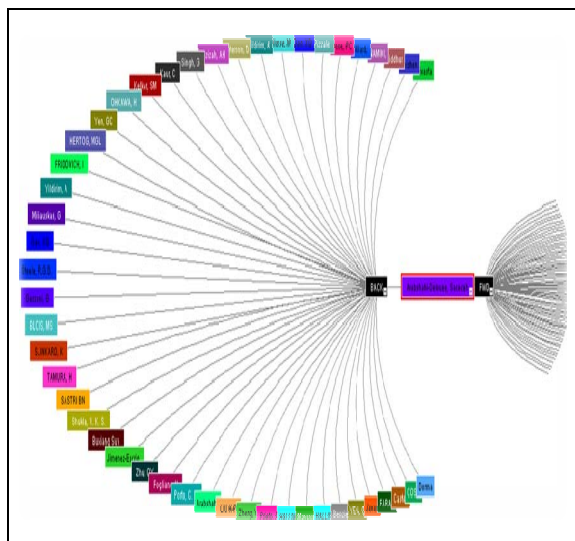
Figure 7 shows bibliographic datails: Title: Antioxidant properties of various solvent extracts of mulberry (Morus indica L.) leaves , Author(s): Arabshahi-Delouee, Sacedeh; Urooj, Asna, Source: FOOD CHEMISTRY Volume: 102 Issue: 4 Pages: 1233-1240 DOI: 10.1016/j.foodchem.2006.07.013 Published: 2007 , Times Cited: 66.

Conclusion

Based on the analysis undertaken the present study reveals the following findings:

1. Total number of publications is 2551 and 11302 times cited by others scientist, its average citation value is 4.43. The overall years h – index value is 36.
2. The group of citing papers includes a large number of highly cited papers we would describe as citation classics.
3. The highest publication is 304 in 2007 followed by 303 papers in 2011 and 289 papers in 2010. The lowest publication is less than 150 from 2001 and 2003.

Single authored work is less than that of the multiple authored contributions. It means that the collaborative authors' contribution is very high. Hence, single author contributions have to be encouraged and this will certainly help for more publications. Overall, at the global level single author publications should be encouraged. Citation Map help the researcher and scientist to know the growth, development and research impact of particular field of research to know citation, h-index and number of publications.

References

1. Madhan, M., Chandrasekar, G., & Arunachalam, S. (2010). Highly cited papers from India and china. *Current Science, 99*(6), 738-749.

2. Rajagopal, T., Archunan, G., Surulinathi, M., & Ponmanickam, P. (2012). Research output in pheromone biology: A case study of India. *Scientometrics,* , 1-9.

3. Jayashree, B., & Arunachalam, S. (2000). Mapping fish research in India. *Current Science, 79*(5), 613-620.