

A CROSS-COUNTRY COMPARATIVE STUDY OF TOP LIBRARY AND INFORMATION SCIENCE JOURNALS USING SCIMAGO JOURNAL RANK

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ABSTRACT -

The main aim of this paper is to conduct a cross- country comparative study of top five journals in the field of Library and Information Science during the past five years; i.e. 2017-2021. The present study analyzed the journals using scimago journal rank (SJR) which is powered by Scopus. For the past five years i.e. from 2017 to 2021 only two countries i.e. United Kingdom and United States remained at top position for most of the time. Only 1 time Spain in year 2018 is seen in the list of top five and that too at fifth position. All the top five journals belong to quartile 1. Karl Pearson's coefficient of correlation was used to obtained the correlation between the h-index and SJR which showed the negative and weak correlation between the two variables.

Keywords :Scientometric, Scimago Journal Rank, Library and Information Science journals, H-index

INTRODUCTION

“Scientometric is the most powerful weapon which you can use to quantitatively measure and analyze the research literature”. The word Scientometric is a fusion of two words that is Science and metric, which means the “science of measuring quantitatively” and then ultimately analyzing the research literature. Derek John de Solla Price is regarded as the father of Scientometric. Science Citation Index is the brainchild of Eugene Garfield (also the founder of ISI) forms the basis of Scientometric. The term first appeared as a Russian term “naukometriya” which was later on translated to English term –“Scientometric”. The term first got boost with the publishing of a journal named “Scientometric” by T. Braun. This term overlaps with another term i.e. bibliometric- term given by Alan Pritchard. The latter implies to the use of statistical and mathematical methods to the books and other forms of communication media whereas the former is the quantitative analysis of the scientific literature.

With the explosion in the research and academic publications in various countries there has been number of metrics available that can be employed to evaluate the impact of these publications worldwide.

The quantitative and qualitative criteria of various journals are measured via Scientometric tools such as citation mapping, scimago journal rank and so on.

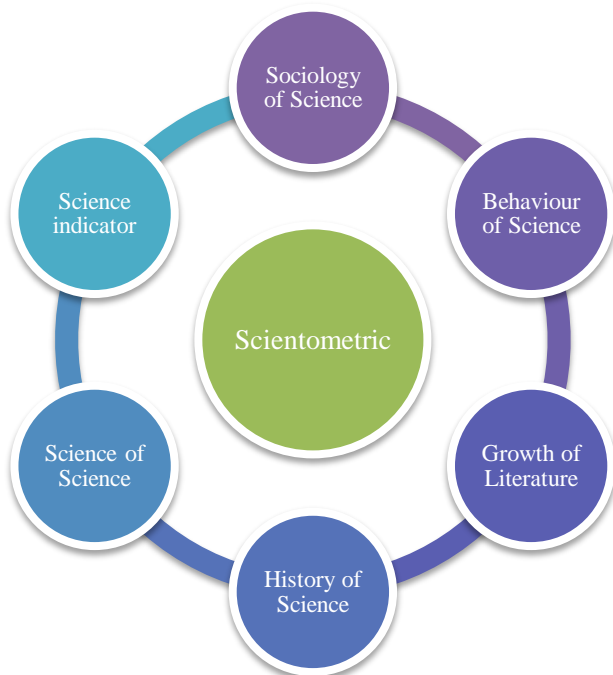


Fig 1: Scientometric includes the following above-mentioned.

Scimago Journal Rank (SJR)

The Scimago Journal and Country Rank is a portal which includes the journals from various fields and countries along with the scientific indicators and scimago institution rankings. Journals from different fields can be grouped either by subject area, subject category, by time period or by country and then compared and analyzed separately. Journals on the SJR can be either searched by its title, ISSN or publisher. The

SJR is powered by Scopus and developed by Scimago. The various tools by Scimago are Shape of Science, Scimago Graphics, Subject Bubble Chart, World Report, Compare and Country Graphs.

H-index

H-index or Hirsch index is named after physicist George E. Hirsch, who developed this author level metric in 2005 that can measure both the productivity and the citation impact of the publication of a scientist or scholar. Moreover it expresses the journals number of articles (n) that have awarded at least “n” citations.

REVIEW OF LITERATURE

Vijayan&Renjith (2021) carried a comparative analysis of citation based Scientometric indicators of two Indian journals i.e. DJLIT and ALIS. The data was retrieved from SJR website for the period of five years i.e.2016-2020. The data was analysed via excel. The results showed that maximum SJR for ALIS is 2.98 whereas for the DJLIT is 0.514.

Govindarajan&Dayakar (2020) reveal a study on Scientometric analysis of literature published during 2005 to 2017 in Indian Journal of Ophthalmology. A total number of 2,633 papers were published. The study indicates that there is continuous increase in the number of publications every year. Articles pertaining to vitreoretinal contributed maximum.

Martin et al. (2020) conducted a study on six multidisciplinary databases to establish a comparison between their coverage by means of citations. Total number of 3,073,351 citations of six databases i.e. Google Scholar, Microsoft

Academic, Scopus, Dimensions, Web of Science and Open Citations' COCI to 2,515 English languages of highly cited documents that were published in the year 2006 among 252 subject categories were investigated. The results showed that Google Scholar was at the top position with highest coverage i.e. 88% of all citations.

Khan (2016) carried out a scientometric study on five volumes of DESIDOC journal of Library and Information Technology for the period 2010 to 2014 covering 30 issues .The study reveals that on an average per year 61 research papers were published by the journal .The study further reveals that year 2012 witnessed maximum number (70) publications whereas year 2010 witnessed the lowest number (50). Khan suggested that high quality papers of foreign author's should be published in the journal apart from the Indian author.

Jabeen et al. (2015) analyzed 40 library and Information Science journals during the year 2003-2012 using web of science. During the study period 18,371 numbers of publications was there. Vantage point and Citespace II software were used for data interpretation. Findings pointed out that The Journal of Medical Library Association and The Journal of Documentation was highly cited. Maximum numbers of articles were pertaining to digital library and automated library software etc.

Bote&Anegon (2012) carried out a study to measure journals' scientific prestige. Scopus was used as data collection source for the SJR2 indicator development. The results revealed that the three metrics i.e. SJR, JIF and SNIP are very strongly correlated and it was concluded from the

results that there are less number of prestigious journals as compared to the highly cited journals.

Davarpanah and Aslekia(2008) reveal a study on Scientometric analysis of 56 international journals during 2000-2004 in LIS field. The study further revealed that total 1361 author had contributed. The study was limited to only LIS journals indexed in SSCI. The results further revealed that majority of journals i.e. 51.80% were from USA.

Falagas et al. (2008) conducted a comparative study of Scimago Journal Rank (SJR) indicator with Impact factor (IF) of the journal. The information w.r.t journal IF was provided by the JCR plus Web of Science and the information regarding the SJR was provided by the Scimago journal, Scopus and country rank websites. The journals were further listed with the top 100 journal IFs and then their ranking was retrieved in the SJR indicator. Similarly, journals with top 100 SJR indicators were listed and their ranking in the list of journal IFs was obtained.

Schloegi& Stock (2004) carried out a study on scientometric analysis of LIS journals. The paper discussed40 international and 10 German language periodicals via citation analysis and reader survey . In case of number of references and citing half-life is concerned, the correlation was more negative but in case of self citation rate of journal, positive yet negative correlation was obtained.

OBJECTIVES

1. To find out the country-wise distribution of Top Five Library and Information Science journals.

2. To find out the SJR of various Top Library and Information Science journals during the period 2017-2021.
3. To find out the quartile of various Top Library and Information Science journals during the period 2017-2021.
4. To find out the H-index of various Top Library and Information Science journals during the period 2017-2021.
5. To find out the consistency of particular journal to remain at top position for a period of maximum time and to find out the correlation between h-index and SJR of these top 1 Journal.

METHODOLOGY

Scimago Journal and Country Rank (<https://www.scimagojr.com>) was used to collect data for evaluating the widely distributed cross-country top Library and Information Science journals during the period 2017 to 2021. The data was collected on 1st July 2022. The various Scientometric indicators considered for the various top journals were H-index, Scimago Journal Rank, Quartile values and so on. After collecting the data pertaining to top 05 Library and Information Science journals for the past five years i.e. during 2017-2021. The data was collected manually from the website and then it

was organized, presented in tabular form and analyzed by simple observation method. Moreover, correlation between the h index and SJR of top 1 journal of Library and Information Science for the period 2017 to 2021 was obtained by using Karl Pearson’s coefficient of correlation.

DATA ANALYSIS

Top five journals: year 2021

Table 1 depicts that out of total five top Library and Information Science journals, the first position is acquired by journal College and Research from United States with highest SJR value that is 2.364 and H- index equal to 55 followed by other journals i.e. Library and Information Science Research (SJR=1.871 and H-index= 60), Journal of the Medical Library Association : JMLA (SJR=1.428 and H-index=62), Journal of Cheminformatics (SJR = 0.866 and H-index=61) and Information Technology and Libraries (SJR= 0.802 and H-index= 37). It reveals that out of the total top five journals 3 journals (i.e. College and Research Libraries, Journal of the Medical Library Association: JMLA and Information Technology and Libraries) belongs to United States whereas rest 2 journals (i.e. Library and Information Science Research and Journal of Cheminformatics) belong to United Kingdom.

Table 1: year 2021-top five library and information science journals

Sr. No	Title	Total docs. (2021)	Total Ref. (2021)	Ref./docs	Total cites (3 yrs)	H-index	SJR	Quartile	Country
1	College and Research Libraries	37	1090	29.46	193	55	2.364	Q1	United States
2	Library and Information Science Research	40	1899	47.48	259	60	1.871	Q1	United Kingdom

3	Journal of the Medical Library Association: JMLA	70	963	13.76	266	62	1.428	Q1	United States
4	Journal of Cheminformatics	38	1270	33.42	383	61	0.886	Q1	United Kingdom
5	Information Technology and Libraries	32	608	19	81	37	0.802	Q1	United States

Top five journals: year 2020

Table 2 depicts that for the year 2020 out of all top five journals belonging to Library and Information Science, journal Scientific Data from United Kingdom dominate all other journals with SJR equals to 2.565 and H-index equals to 80 followed by Big Data (SJR=2.244 and H-index=48), College and Research Libraries (SJR=1.886 and H-index=55), Journal of

Cheminformatics (SJR=1.35 and H-index=61) and Library and Information Science Research (SJR=1.225 and H-index=60). It reveals that out of all top five journals with quartile 1, four journals (i.e. Scientific Data, Big Data and Society, College and Research Libraries and Library and Information Science Research) belongs to United Kingdom whereas only 1 journal (i.e. College and Research Libraries) belong to United States.

Table 2 : year 2020 - top five library and information science journals

Sr. No	Title	Total Docs. (2020)	Total Refs. (2020)	Refs./Docs.	Total Cites (3yrs)	H-index	SJR	Quartile	Country
1	Scientific Data	426	17975	42.19	5635	80	2.565	Q1	United Kingdom
2	Big Data and Society	83	4575	55.12	869	48	2.244	Q1	United Kingdom
3	College and Research Libraries	60	2193	36.55	376	55	1.886	Q1	United States
4	Journal of Cheminformatics	72	4272	59.33	1231	61	1.35	Q1	United Kingdom
5	Library and Information Science Research	37	2143	57.92	286	60	1.225	Q1	United Kingdom

Top five journals: year 2019

Table 3 depicts that journal named Big Data and Society with quartile 1 from United Kingdom is at the top position and dominates other journals with the highest SJR value of 3.249 and H-index 48. The above-mentioned journal is followed by College and Research Libraries (SJR=3.099 and H-index = 80), Communications in Information Literacy (SJR=1.776 and H-index = 55), Journal of Cheminformatics (SJR=1.776 and H-index =

18) and Library and Information Science Research (SJR=1.430 and H-index= 61). Out of total five journals for the year 2019 maximum number of journals belong to United Kingdom i.e. 3(i.e. Big Data and Society, College and Research Libraries and Library and Information Science Research) whereas only 2 journals (i.e. Communications in Information Literacy and Journal of Cheminformatics) belong to United States.

Table 3 : year 2019- top five library and information science journals

Sr. No	Title	Total Docs. (2019)	Total Refs. (2019)	Refs./Docs.	Total Cites(3 yrs)	H-index	SJR	Quartile	Country
1	Big Data and Society	47	2489	52.96	1062	48	3.249	Q1	United Kingdom
2	Scientific Data	367	14449	39.37	4647	80	3.099	Q1	United Kingdom
3	College and Research Libraries	56	1821	32.52	343	55	1.776	Q1	United States
4	Communications in Information Literacy	14	412	29.43	101	18	1.448	Q1	United States
5	Journal of Cheminformatics	77	3651	47.42	1141	61	1.430	Q1	United Kingdom

Top five journals: year 2018

Table 4 depicts that in the year 2018 journal named Scientific Data dominates other journals with SJR value of 3.007 and H-index of 80. Journal named College and Research Libraries is at second position with SJR equal to 1.674 and H-index equal to 55 followed by Communications in Information Literacy (SJR =1.521 and H-index=18) , Journal of Cheminformatics (SJR=1.499 and H-index= 61) and finally at fifth

position journal from Spain named Cybermetrics with SJR value 1.273 and H-index=15. All the five journals belong to Q1. Out of total number of journals 2 journals (i.e. Scientific Data and Journal of Cheminformatics) belong to United Kingdom and 2 journals (i.e. College and Research Libraries and Communications in Information Literacy) belong to United States whereas only 1 journal (i.e. Cybermetrics) belongs to Spain.

Table 4 : year 2018- top five library and information science journals

Sr. No	Title	Total Docs. (2018)	Total Refs. (2018)	Refs./Docs.	Total Cites (3 yrs)	H-index	SJR	Quartile	Country
1	Scientific Data	295	9611	32.58	2729	80	3.007	Q1	United Kingdom
2	College and Research Libraries	55	2398	43.6	339	55	1.674	Q1	United States
3	Communications in Information Literacy	14	332	23.71	91	18	1.521	Q1	United States
4	Journal of Cheminformatics	66	3269	49.53	1003	61	1.499	Q1	United Kingdom
5	Cybermetrics	0	0	0	1	15	1.273	Q1	Spain

Top five journals: year 2017

Table 5 depicts that the top position is acquired by a journal from United Kingdom i.e. Scientific Data with maximum SJR value i.e. 3.026 and H-index = 80 followed by Communications in Information Literacy (SJR= 1.657 and H-index= 18), College and Research Libraries (SJR= 1.389 and H-index=55), Journal of Cheminformatics(SJR = 1.203 and H-index=

61), Library and Information Science Research with SJR value of 1.188 and H-index= 60. Out of total number of journals 3 journals (i.e. Scientific Data, Library and Information Science Research and Journal of Cheminformatics) belongs to United Kingdom and rest 2 belongs to (Communications in Information Literacy and College and Research Libraries) belongs to United kingdom.

Table 5 : year 2017- top five library and information science journals

S.No	Title	Total Docs. (2017)	Total Refs. (2017)	Refs./Docs	Total Cites (3 yrs)	H-index	SJR	Quartile	Country
1	Scientific Data	197	6128	31.11	1592	80	3.026	Q1	United Kingdom
2	Communications in Information Literacy	22	574	26.09	91	18	1.657	Q1	United States
3	College and Research Libraries	58	2127	36.67	270	55	1.389	Q1	United States

4	Journal of Cheminformatics	65	3138	48.28	857	61	1.203	Q1	United Kingdom
5	Library and Information Science Research	38	1947	51.24	206	60	1.188	Q1	United Kingdom

Top first library and information science journals

Table 6 : correlation between h-index and sjr of top 1, quartile 1 journal of library and information science for the period 2021-17

Sr. No	TITLE	YEAR	QUARTILE	X (H-INDEX)	Dx	Dx ²	Y (SJR)	Dy	Dy ²	Dx.dy	COUNTRY
1.	Big Data and Society	2019	Q1	48	-20.5	420.25	3.249	0.4068	0.1654 8624	- 1.33 25	United Kingdom
2.	Scientific Data	2017	Q1	80	11.5	132.25	3.026	0.1838	0.0337 8244	2.11 37	United Kingdom
3.	Scientific Data	2018	Q1	80	11.5	132.25	3.007	0.1648	0.0271 5904	1.89 52	United Kingdom
4.	Scientific Data	2020	Q1	80	11.5	132.25	2.565	-0.2772	0.0768 3984	- 3.18 78	United Kingdom
5.	College and Research Libraries	2021	Q1	55	-13.5	182.25	2.364	-0.4782	0.2286 7524	6.45 57	United States
Total				343		999.25	14.211		0.5319 428	- 1.06 26	

$$r = \frac{\sum dx.dy}{\sqrt{\sum dx^2 \times \sum dy^2}}$$

$$r = -0.0460893162$$

$$r = -1.0626 / \sqrt{999.25 \times 0.5319428}$$

Table 6 depicts top first position occupying journals from different countries for each year with their decreasingly arranged SJR value. All the journals belong to quartile 1. The first four journals with highest SJR value are from United Kingdom and only one journal in the year 2021 is from United States. At first position journal named “Big Data and Society” from United Kingdom is with highest SJR value =3.249 in the year 2019 and at fifth position is the journal named “College and Research Libraries” from United States with SJR value 2.364. Further Fig 6.1 shows correlation between the h-index and SJR of top 1, Quartile 1 journal of Library and Information Science for the period 2017-2021 was calculated using Karl Pearson coefficient of correlation and value of -0.0460893162 was obtained which means that there is negative and weak correlation between the two variables.

DISCUSSION

After the data collection as well as the analysis, authors were able to conclude and comment as follows-

Out of the total top five journals pertaining to the field of Library and Information Science for the past five years i.e. 2017 to 2021 maximum quality contribution is made by United Kingdom and United States only. And out of these two countries 14 journals occupying the top position are by United Kingdom collectively for five years whereas only 09 journals are by United States collectively for five years whereas only 1 journal is from Spain and that too in the year 2018 only.

For the past five years, among the top first journal for each year the highest SJR value is of the journal named “Big Data and Society” from

United Kingdom with SJR= 3.249 (year 2019) followed by “Scientific Data” from United Kingdom for three years with SJR=3.026 (year 2017), with SJR =3.007 (year 2018), and with SJR= 2.565 (year 2020) and ultimately journal “College and Research Libraries” with SJR = 2.364 (year 2021). It was concluded that maximum number of times i.e. 4 times United Kingdom dominated over others whereas only one time United States dominates.

The entire top five Library and Information Science journals from different countries for each year from 2017 to 2021 belong to quartile 1.

In the year 2021 journal named “College and Research Libraries” and journal “Information Technology and Libraries”, both from United States with H-index of 55 and 37 occupies first and fifth position respectively. For the year 2020 the journal at top position from United Kingdom named “Scientific Data” with H-index of 80 whereas at the fifth position journal named “Library and Information Science Research” from the same country with H-index of 60. Following the next year i.e. 2019 journal named “Big Data and Society” from United Kingdom with H-index of 48 was at first position whereas at the fifth position journal named “Journal of Cheminformatics” from the same country with H-index of 61 remained. Year 2018 marks “Scientific Data” from United Kingdom at top position with H-index of 80 whereas at the fifth position journal named “Cybermetrics” from Spain with H-index of 15. In the year 2017 journal named “Scientific Data” from United Kingdom at top position with H-index of again 80 remained at top position whereas at the fifth position journal named “Library and Information

Science Research” from the same country with H-index of 60 remained.

During the period of 2017 to 2021 same journals from the same country was repeated all the time i.e. Scientific Data, Library and Information Science Research, Journal of Cheminformatics, Big Data and Society from United Kingdom and Journal of the Medical Library Association: JMLA, Information Technology and Libraries, College and Research Libraries, Communications in Information Literacy from United States all the times, no new country and journal could be seen from the past five years except for one country i.e. Spain in the year 2018 with journal named Cybermetrics and that too occupied the fifth position in that particular year with SJR value of 1.273

Only the journal named “Scientific Data” from United Kingdom remained consistent at top position for three years i.e. for the year 2017, 2018 and 2020. No other journal from another country could remain consistent to occupy the top position. Further, Karl Pearson’s coefficient of correlation was used to obtain the value of correlation between the two variables i.e. h index and SJR which revealed that there exists negative and weak correlation between the two variables.

CONCLUSION

The study revealed that for the past five years, all the top five journals of each year belong to quartile 1 and United Kingdom along with United States continued to remain at top position year after year. It was concluded that only for one time Spain in year 2018 is seen in the list of top five and that too at fifth position. The study showed

that there was negative correlation between the two variables i.e. H-index and SJR.

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