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Summer 8-26-2022

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Varma, Akhilesh Kumar Dr.; Soni, Shudhanshu Mr.; Singh, Japesh Mr.; and Verma, Neha Dr., "Research Performance Of IFLA Journals Based On Scopus Database" (2022). *Library Philosophy and Practice (e-journal)*. 7395.

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# Research Performance of IFLA Journals Based on Scopus Database

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## Abstract

*This study examined the performance of selected IFLA journals for 22 years between 2001 to 2021. The methodology used in this study includes Annual Growth Rate (AGR), Relative Growth Rate (RGR), and Doubling Time (Dt), as well as countries and institutions. With the highest productivity and distribution of publications per year, used to evaluate research productivity. To obtain the information required for this study, the Scopus database was consulted. During the research period, 813 publications were retrieved. Based on the study, the most articles were published in 2021, 84 (10.33%), and the lowest number was 25 (3.07%) in 2018. Due to the annual increase in the constant fluctuations in publications, research shows an average, productivity in IFLA journals.*

**Keywords:** Author productivity, Bibliometrics, IFLA journals, Annual growth rate, Scopus

## Introduction

Bibliometrics is the Statistical method, used to find the pattern of various books and information being published in the previous year. Bibliometric analysis can also be referred to as a research technique used to detect the state of the art for a particular area, field, or subject (Hanumantharaju & Gadagin, 2016; López-Muñoz et al., 2003; Singh, 2017; Vellaichamy & Jeyshankar, 2015).The term Bibliometrics was firstly used/curated by Alan Pritchard in the year 1969 (Broadus, 1987; Parida et al., 2022; Patel & Singh, 2022; Pritchard, 1969; Rawat et al.,

2021; Tella & Aisha Olabooye, 2014). He defines bibliometrics as "the application of mathematics and statistics to books and other media", which involves analyzing many specific aspects of media, including author, place of publication, content, and citation. Sengupta (1974) has defined bibliometrics as "organization, classification and quantitative evaluation of publication pattern of macro and micro-communication along with their authorship by mathematical and statistical calculations".

The IFLA Journal is an international journal that publishes peer-reviewed articles on libraries and information services and social, political, and economic issues affecting access to information through libraries. The journal publishes research, case studies, and essays representing a wide range of professions internationally. All items are peer-reviewed. Articles are published in English. The abstract will be translated into IFLA's other working languages - Arabic, Chinese, French, German, Russian or Spanish - for publication by IFLA (International Federation of Library Associations and Institutions).

The IFLA Journal is IFLA's official journal and has an international audience that includes academic institutions, professional organizations, and IFLA members, all of whom have a free journal subscription. This journal is a member of the publishing ethics committee. The IFLA Journal is a quarterly peer-reviewed academic publication. This includes the fields of library science and computer science. The editors of SAGE published the first edition of the IFLA Journal in 1975 on behalf of the IFLA.

## **Literature Review**

Bibliometric analysis of articles published in various journals has been performed, by different authors in different fields of Subjects. Patel et al. (2021) performed a bibliometric study on webology journal from 2006-2020, they found that a total of 295 documents were indexed in Scopus. Most of the 92 articles (31.19%) were published in 2020, and the least 9 (3.05%) were published in 2010. The survey clearly shows that publication trends have changed between 2006 and 2017 and may increase from 2018. Singh, Varma, and Singh (2021) confirmed that co-authors contributed to multiple authors. Finally, most researchers are familiar with the use of newspaper stories because newspapers are an important vehicle for communicating new information. Rai et al. below (2020) conducted a literature review on deep web research from

1997 to 2019. This analysis included annual distribution, compound annual growth rate, relative growth rate, and doubling time and found that the deep web literature has grown at an annual growth rate of 24.84%. Singh et al. (2017) analyzed articles published in *Partnership: The Canadian Journal of Library and Information Practice and Research* between 2010 and 2016. The study found that of the 264 contributors, Canada produced the most articles, 251 (95.07%). Kumar and Murthy (2011) analyzed parameters such as the growth model, topic coverage, authorship model, material distribution of articles, etc. Thanuskodi (2010) states that journals publish an average of 28 research articles per year. The study shows that 2006 had the highest number of articles published and 2009 had the lowest.

### **Objectives**

- To find out the year-wise distribution of documents;
- To find out the author-wise distribution of documents;
- To find the Annual Growth Rate (AGR) and Relative Growth Rate (RGR) and Doubling Time (Dt);
- To know the institution-wise affiliations of the contributors and the geographical distribution of the publications.

### **Methodology**

#### ***Data Source***

This study is intended to review the "Journal of IFLA" scientific publications. We used the Scopus database to extract the bibliographic data for the period 2001-2021. Scopus is the largest database of citations and abstracts of academic journal articles, conference proceedings, and books (Varma and Singh, 2017).

#### ***Search Strategy***

Document searches are performed by selecting the title of the source in the Scopus database (Scopus, n.d.). The authors put "IFLA" in quotes to search for the exact term. The search string was used as: "SRCTITLE (IFLA) AND (LIMIT-TO (PUBYEAR, 2001) OR LIMIT-TO (PUBYEAR, 2021))". Further, the authors extracted a total of 813 bibliographic data in .csv file format.

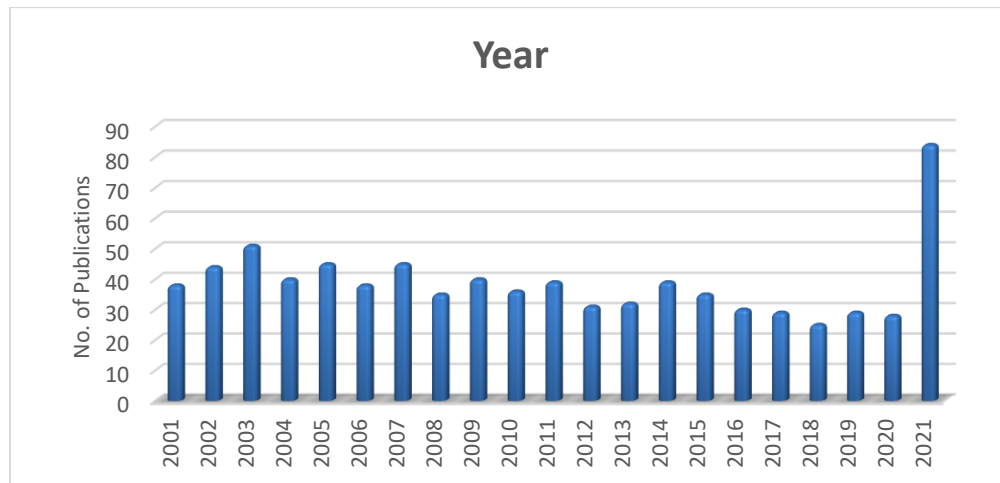
## Results and discussion

### Year-wise publication of documents

In this study, 813 Scopus-indexed publications were reviewed. Publications in the IFLA Journal from 2001 to 2021 are depicted in the figure below. The majority of the 84 papers (10.33%) were published in 2021, with the next highest percentages coming from 2003 and 2007: 45 (3.07%) and 51 (4.79%). 25 articles (3.07%) were published in 2018. On average, there were 39(4.80%) papers published in a year during the period 2001 to 2021. If we observe the pattern in the year document publication, we can see that there was much fluctuation in the published of the document, however, is considered the year 2014, we can observe that there were gradual decrements in publish of the document and suddenly it jumps in the year 2021 as 84 documents.

**Table 1: Year-wise publication of documents**

Year	No. of Doc	%age	Year	No. of Doc	%age
2001	38	4.674047	2012	31	3.813038
2002	44	5.412054	2013	32	3.936039
2003	51	6.273063	2014	39	4.797048
2004	40	4.920049	2015	35	4.305043
2005	45	5.535055	2016	30	3.690037
2006	38	4.674047	2017	29	3.567036
2007	45	5.535055	2018	25	3.075031
2008	35	4.305043	2019	29	3.567036
2009	40	4.920049	2020	28	3.444034
2010	36	4.428044	2021	84	10.3321
2011	39	4.797048	<b>Total</b>	<b>813</b>	<b>100</b>



**Figure 1: Year-wise publication of documents**

### Author-wise document publication

From, the Author wise Document publication, we can observe that Parker, S. had published the maximum number of documents as 38, followed by Lux, C. as 12 and Witt, S. W. as 10 documents. From the table, we may depict that there are a number of authors having the least publication as shown in the table, 3 publications from 8 authors (each), 2 publications from 73 authors (each), and 1 publication from 62 authors (each).

**Table 2: Author-wise document publication**

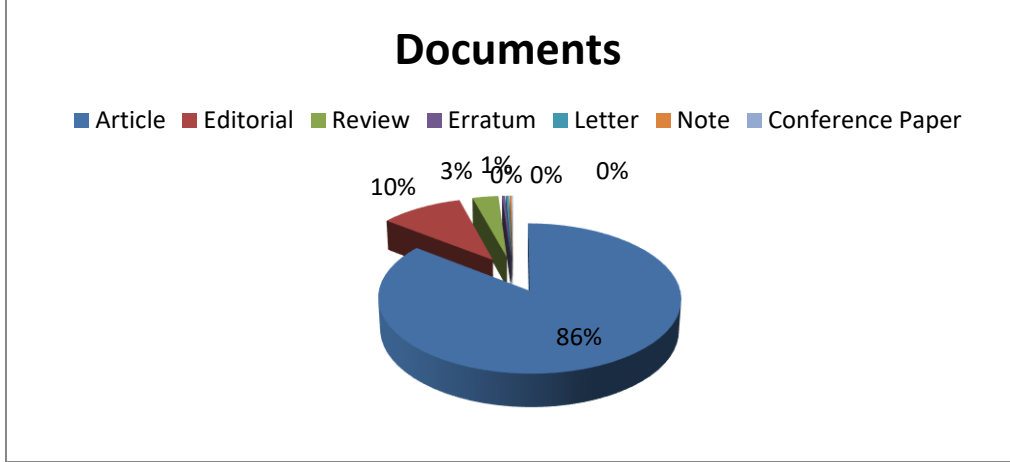
Author	Documents	Author	Documents
Parker, S.	38	Dione, B.	4
Lux, C.	12	Gorman, G.E.	4
Witt, S.W.	10	Hamilton, S.	4
Bihani, S.K.	7	Namhila, E.N.	4
Byrne, A.	7	Raseroka, K.	4
Tise, E.R.	7	Sturges, P.	4
Shenton, A.K.	6	8 Authors (each)	3
Islam, M.A.	5	73 Authors (each)	2
Lor, P.J.	5	62 Authors (each)	1
Bradley, F.	4		

### Types of documents

The table3 below illustrates the different Documents of the IFLA Journal like Article, Editorial, Review, Erratum, Letter, Notes, and Conference Paper s. The analysis highlights those articles (695) are the most published type of document. Editorials (83) are the second most published document while Conference Paper (1) is the least published Document Category. This shows that most of the authors are interested in publishing the article rather than other document types.

**Table 3: Types of documents**

Document Type	No. of Doc.
Article	695
Editorial	83
Review	26
Erratum	3
Letter	3
Note	2
Conference Paper	1



**Figure 2: Types of documents**

### **Annual Growth Rate, Relative Growth Rate, and Doubling Time**

The annual growth rate (AGR) was calculated according to the formula cited by Kuri et al. (2020) in their research and used here:

$$AGR = \frac{\text{EndValue} - \text{FirstValue}}{\text{firstValue}} \times 100$$

the table given below shows that the maximum AGR was noted in the year 2021 as 200, followed by 21.875 in the year 2014 & 18.42 in the year 2007, and -22.22 in the year 2008.

Furthermore, RGR determines the growth in terms of dimensional increase per dimensional unit. The following formula was used to calculate the average relative growth rate (AGR) over the specified period of the interval.

$$RGR = \frac{W2 - W1}{T2 - T1}$$

Where,

W1 = Natural logarithms of no. of a paper published until the previous year

W2 = Natural logarithms of no. of a paper published until the present year

T2-T1 = Difference between the initial year and the final year.

The above table shows that highest relative growth rate 0.7691 in 2002 followed by 0.2418 in 2003 and in 2021 it becomes 0.0057.

## Doubling Time

The doubling time of one version is a good metric for predicting the doubling time of all versions. It is equal to the natural logarithm of 2 divided by RGR.

Doubling Time =  $\frac{0.693}{R}$  From the table it is clear that the doubling time is maximum as 318.492 in the year 2020, followed by 292.466 in the year 2018 and 278.843 in the year 2019. The least doubling time was recorded in the year 2002 as 0.90

**Table 4: Annual Growth Rate and Relative Growth Rate and Doubling Time**

Year	TNP	CP	W1	W2	AGR	W2-W1	RGR	Dt
2001	38	38	-	3.637586	-	-	-	-
2002	44	82	3.637586	4.406719	15.78	0.769133	0.76913	0.901014
2003	51	133	4.406719	4.890349	15.909091	0.48363	0.24181	2.865828
2004	40	173	4.890349	5.153292	-21.568627	0.262942	0.08765	7.906673
2005	45	218	5.153292	5.384495	12.5	0.231203	0.0578	11.98944
2006	38	256	5.384495	5.545177	-15.555556	0.160682	0.03214	21.56428
2007	45	301	5.545177	5.70711	18.421053	0.161933	0.02699	25.67731
2008	35	336	5.70711	5.817111	-22.222222	0.110001	0.01571	44.09964
2009	40	376	5.817111	5.929589	14.285714	0.112478	0.01607	43.12844
2010	36	412	5.929589	6.021023	-10	0.091434	0.01143	60.63376
2011	39	451	6.021023	6.111467	8.3333333	0.090444	0.01005	68.95981
2012	31	482	6.111467	6.177944	-20.512821	0.066477	0.00665	104.2469
2013	32	514	6.177944	6.242223	3.2258065	0.064279	0.00584	118.5921
2014	39	553	6.242223	6.315358	21.875	0.073135	0.00609	113.7079
2015	35	588	6.315358	6.376727	-10.25641	0.061369	0.00472	146.8006
2016	30	618	6.376727	6.426488	-14.285714	0.049762	0.00355	194.97
2017	29	647	6.426488	6.472346	-3.3333333	0.045858	0.00306	226.6788
2018	25	672	6.472346	6.510258	-13.793103	0.037912	0.00237	292.4664
2019	29	701	6.510258	6.552508	16	0.04225	0.00249	278.8432
2020	28	729	6.552508	6.591674	-3.4482759	0.039166	0.00218	318.4918
2021	84	813	6.591674	6.700731	200	0.109057	0.00574	120.7346

\*TNP=Total no. of publications, NC=Cumulative, AGR=Annual growth rate,  
RGR=Relative Growth Rate, Dt= Doubling time

## Top 10 Collaborative Affiliations

From the table, it becomes notable that the University of Illinois Urbana-Champaign had the top collaborative association in 14 documents followed by the University of Dhaka in 10 documents and the University of South Africa in 9 documents. The rest had the least collaborative affiliation in the documents.



**Table 5: Top most collaborative affiliation**

Affiliation	Documents
University of Illinois Urbana-Champaign	14
University of Dhaka	10
University of South Africa	9
Victoria University of Wellington	8
The University of the West Indies	8
Simmons University	7
Loughborough University	6
University of Missouri	6
University of Namibia	6
University of Cape Town	5
University of Pretoria	5
University of Dar Es Salaam	5
The British Library	5

**Country-wise distribution of publications (Top 20)**

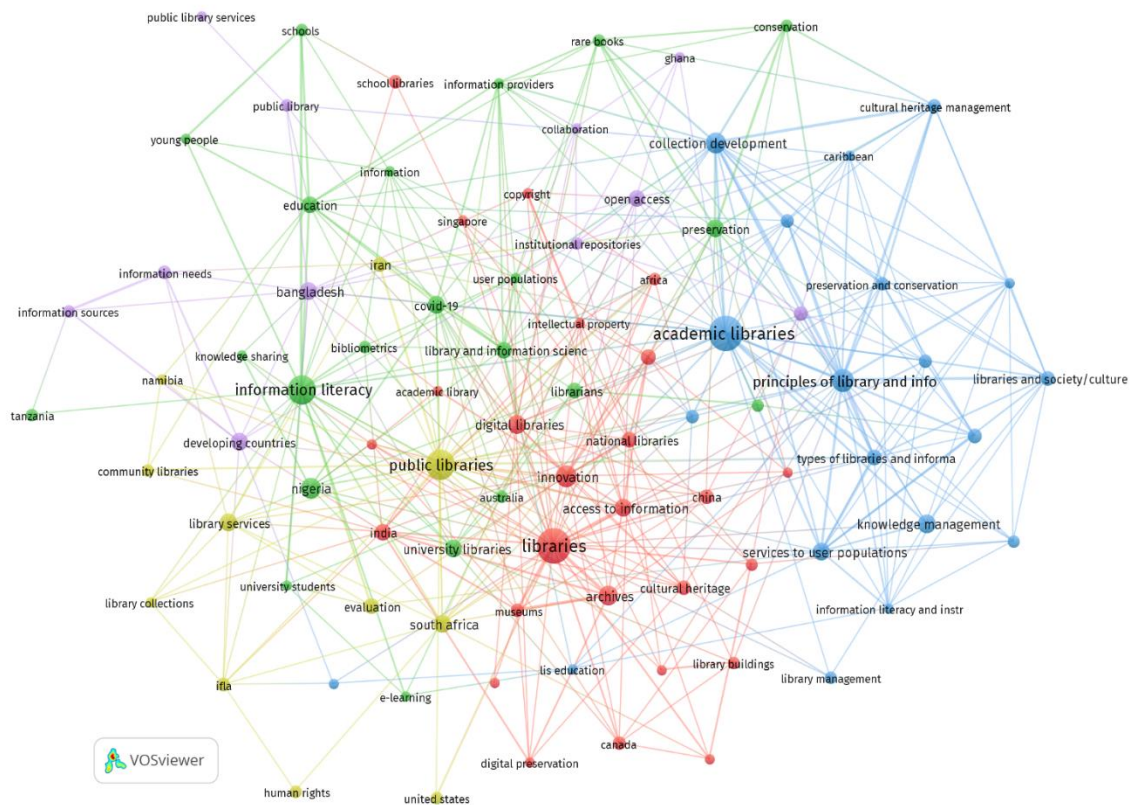
Looking at the distribution of publications by country, the United States (163) contributed the most articles, followed by the United Kingdom (51), South Africa (33), and India (32).

**Table 6: Country-wise distribution of publications**

Rank	Country/Territory	Documents
1	United States	163
2	United Kingdom	51
3	South Africa	33
4	India	32
5	Australia	28
6	Germany	25
6	Nigeria	25
7	Canada	22
7	Netherlands	22
8	Bangladesh	15
9	New Zealand	14
10	Sweden	12
11	Egypt	11
12	France	10
12	Norway	10
12	Tanzania	10
13	Iran	9
13	Italy	9
14	China	8
14	Jamaica	8
14	Japan	8
14	Switzerland	8

## Analysis of the top keywords in the publications

The main concept of the academic article is presented in the keywords (Patel et al., 2021b). Keywords are used to summaries literature and identify a study's main topic (Patel et al., 2021c; Singh et al., 2021). The bibliographic data reveals that the titles of the articles are associated with 1601 keywords. 90 keywords were obtained in VOSviewer as a result of the co-occurrence threshold of keywords being set to 4. Each keyword is organized into five groups: red, green, blue, yellow and purple, as shown in Figure 3. Cluster 1 is represented by the color red, which is mainly about ideas such as library (40 occurrences), and innovation (16 occurrences). and file (13 occurrences). Cluster 2 is indicated by green colors that deal with the ideas like information literacy (27 occurrences), education (9 occurrences), and library and information science (9 occurrences). Cluster 3 is indicated by the blue color dealing with ideas like academic libraries (41 occurrences), collection development (15 occurrences), and knowledge management (12 occurrences). Cluster 4 is indicated by the yellow color dealing with ideas like public libraries (30 occurrences), library services (10 occurrences), and library collection (4 occurrences). Finally, Cluster 5 is indicating by purple color dealing with ideas like developing countries (10 occurrences), open access (9 occurrences), and information needs (6 occurrences).



**Figure 3: Top most keywords network of publications**

## Conclusion

The aim of the study was to determine the performance of IFLA journals for 22 years selected between 2001 to 2021. Numerous scientific indicators such as collaboration level, relationship index, and ratio are used to analyze and interpret the data. The IFLA journal publishes in-depth and high-quality research on the quantitative aspects of computer science. As this scientific journal contains both theoretical and empirical evidence at IFLA, it is very informative. Publish quality research publications to meet the needs of the user community, such as students, teachers, and information professionals involved in the areas of bibliography, scientometrics, webometrics, and other evaluations of patents and research. Based on the research, it was found that most of the publications were published in 2021. It can be assumed that the authors jointly contributed more than one author. Finally, most researchers are known to use citations from newspaper articles because newspaper articles are the primary means of communicating new information.

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