Bibliometric Analysis of "Jurnal Lingkungan dan Bencana Geologi" 2016–2020 Period

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Dwi Ridho Aulianto
Indonesian Institute of Sciences, Indonesia, dwiridhoaulianto@gmail.com

Cut Nanda Annisa
Ministry of Energy and Mineral Resources, Indonesia, cutnandaannisa@gmail.com

Muhammad Aulia Taufiqi
Ma'had Ali Islamic High School Cirebon, Indonesia, auliataufiqi@gmail.com

Bibliometric Analysis of "Jurnal Lingkungan dan Bencana Geologi"
2016-2020 Period

Dwi Ridho Aulianto[1*], Cut Nanda Annisa[2], Muhammad Aulia Taufiqi[3]

[1]Indonesian Institute of Sciences, Indonesia
[2]Ministry of Energy and Mineral Resources, Indonesia
[3]Ma'had Ali Islamic High School Cirebon, Indonesia

*Email: dwiridhoaulianto@gmail.com

ABSTRACT

This study aimed to find out more detail about the "Jurnal Lingkungan dan Bencana Geologi" which was published during 2016-2020. This was seen from the distribution of articles each year, author contributions, authorship patterns, number of pages, reference literature, and analysis of their citation. This study used bibliometric analysis as the method and the source was taken from the page http://jlbg.geologi.esdm.go.id/index.php/jlbg as data collection. The data was processed and analyzed using Ms. Excel and Publish or Perish (PoP) Application. The results of the study concluded that JLBG was published twice a year and published 75 articles during 2016-2020, those written by 237 authors, consisting of 11 articles written by single authors (15%) and 64 written by collaborative authors (85%). The number of article pages published by JLBG during the 2016-2020 period was 814 pages, and the reference literature used was 1457 consisting of 737 (50.58%) primary libraries and 720 secondary libraries (49.42%). JLBG had been cited 72 times, most articles had 7 citation numbers, the overall JLBG citation rate each year during 2016-2020 was 14.40 and the citation of each article was 0.96, besides the numbers h-index 4, g-index 5, hI, norm 3, and p. 0.60.

Keyword: Citations Analysis; Bibliometrics; Scientific Journal; Journal of Environment and Geological Disasters

INTRODUCTION

The most popular form of scientific work in Indonesia is scientific journals, whether published by universities, government agencies, private companies, and professional organizations. The government through the Ministry of Research, Technology, and Higher Education has issued a policy regarding national accreditation, namely PermenristekDikti No. 9 of 2018. The enactment of these regulations makes scientific journal managers try to improve the quality of journals that are managed. The improvement of journal quality is carried out by following the journal accreditation assessment indicators. In addition, the quality of journals can be seen from the impact they have. The journal managers can prepare citation numbers for scientific journal articles as a strategic step towards accredited journals (Nashihuddin and Aulianto, 2016). Therefore, the result publication research requires a reference in the form of other scientific articles that are still related to the research itself, or it is called citations. Through citation analysis, it can be known the growth and development of science in certain subjects. Besides that, it can also describe the relationship between part or all of the articles cited and the citing documents, in this case, it can be calculated how many papers are cited by scientific authors (Hayati, 2016).

This study focuses on analyzing the quality of journals through bibliometric study, which explains the written communication process, the nature, and direction of the development of publications in a description through quantitative calculations and analysis in various communication facets. Descriptive studies describe the features or characteristics of literature, while behavior links between components of the literature (Sulistyo-Basuki, 2019). Citation analysis is one approach in using bibliometric data analysis. It is useful for writers and journal managers to find out about future research trends. The higher the journal citation number, the greater the impact on scientific development, or often referred to as the impact factor. One indicator of a quality journal is having an impact factor (Smith, 2008). The impact of a scientific publication can be estimated by the number of citations it has, i.e. how often the article is referred to by another article. Since the research is published, researchers can compare the number of citations based on the productivity of the author, publisher, and type of publication so that they can find out the scientific impact in the development of science (Rahm & Thor, 2005).

The scientific journal discussed in this study is "Jurnal Lingkungan dan Bencana Geologi" then is referred to as JLBG. The information from the http://jlbg.geologi.esdm.go.id/index.php/jlbg page, JLBG has ISSN 2502-8804 (Online) and ISSN 2086-7794 (Printed). The first JLBG publication was in 2010, published by the Center for Groundwater and Environmental Geology - Badan Geologi. The frequency of JLBG publication is 3 times a year, to be precise in April, August, and December. Based on information from the SINTA (science and technology index) page, JLBG is included in a nationally accredited scientific journal with the SINTA 2 category. JLBG uses a double peer-reviewed system, which means reviewers do not know whose writings are being examined and the authors also will not know who will be reviewing his writing. This policy is carried out to avoid conflicts of interest and to maintain an objective nature in evaluating a publication. The focus of articles published by JLBG is research articles related to hydrogeology, volcanology, earthquakes, tsunamis, ground motion, engineering geology, and environmental geology. The scope of the JLBG includes: 1) Geology Engineering includes Soil and Rock Mechanics, Foundation Engineering, Underground Structures, Mining Engineering; 2) Environmental Geology includes Geological Aspect Spatial Planning, Geological Conservation, Natural Geology Carag, Sustainable Geotourism; 3) Hydrogeology includes groundwater, surface water, water conservation, hydrodynamics; 4) Geological disasters include Tsunami Disaster, Volcano Disaster, Mount Earth Disaster, Ground Movement Disaster, Erosion Disaster.

Many kinds of applications or software can be used to analyze and view citation numbers as a scientific impact of a scientific journal. One of them is the Publish or Perish (PoP) application. The data sources processed by using PoP can come from google scholar, crossref, PubMed, Microsoft academic, Scopus, web of science importing data from outside. The PoP can only be used if there is an internet connection that can run on Windows, Linux, and Machintosh systems (Aulianto, 2019). The results of the analysis process using PoP can be copied to the Windows clipboard (to run into other applications) or saved to various output formats (for future reference or further analysis (Harzing, 2011). PoP is designed to help academics present the impact of research even if has few citations. In addition, it can be used in bibliometric research. The resulting metric figures include the total number of articles and number of citations; average citation of each article, citations each author, and citations each year; h-index and related parameters g- index; three variations of individual h-index; average annual increase in individual h-index; age-weighted citation rate; analysis of the number of authors each article. In general, it can be said that if the journal or author has a good citation rate, the journal or the author has likely made a significant impact in the field, conversely, if the journal or the author shows a weak citation matrix, this may be due to the lack of impact

on the ground (Harzing, 2007). Bibliometric analysis can be used to study journals, articles, or certain topics within a certain period, not only in the field of libraries but also in other disciplines.

LITERATURE REVIEW

These are several previous studies regarding citation and bibliometric analysis of scientific journals, especially journals in Indonesia, as follows:

Aulianto, D. R. (2020), discussed bibliometrics and citation analysis Read: Documentation and Information Journals published in the 2015-2019 period. The results showed that this journal had 2 times the frequency of publication in a year (June and December) and had published 71 articles during 2015-2019, with 30 single authors (42.25%) and 41 collaborative authors (57.75). The number of writers who contributed during the 2015-2019 period was 146 people both single and collaborative, and in 2019 there were 20 article titles with the largest number of authors 46 people (31.51%). The distribution of articles based on publication numbers during the 2015-2019 period, number 1 (June) published 34 articles (47.89%) and number 2 (December) published 37 articles (52.11%) with a total of 975 pages with an average of 11-15 pages. This journal had 30 citations, an annual citation figure of 6.00, a written citation figure of 0.42, h-index 2, g-index 2, hI, norm 2, and HLA 0.40. The strength of the network between authors and the frequency of collaboration could be seen in the VosViewer visualization image. In addition, Aulianto, D. R. (2019), discussed citation analysis in a journal entitled "Journal of Communication Studies" using the Publish or Perish (PoP) application. The results of the study showed data on the year of the earliest publication to the most recent published year, 2013-2018. Figures on citation years were obtained from citations made by other authors from 2013 to 2019. The number of Papers (articles) published in communication studies journals in 2013-2018 is 119 published articles, with a total of 275 citations. The cites/year number of communication studies of 45.83 is obtained from the total citation figure of 275 divided into 6 (year of publication). The cites/paper figure of 2.31 was obtained from the total citation number divided into 119 (number of articles). The cites/author figure was 195.42, the papers/author number was 78.17, the author/paper number was 1.89, the h-index 8, the g-index 10, hI, norm 6, and HLA 1.0.

Rahayu, R. N. (2019), discussed bibliometric analysis in a journal entitled "Khizanah Al-Hikmah: Journal of Information and Archives Library Science". This study was intended to determine the distribution of articles each year and by number, authorship patterns, types of references used, contributing institutions, and the most productive authors. The results of this study concluded that this journal had published 101 articles from 150 authors, with more single authors than collaborative authors, which was indicated by the degree of collaboration value of 0.34. Books became the majority of references used (65.15%), with the highest number of pages in the range of 6-10 pages (41.13%). Educational institutions became the origin of the most article writers, and Alauddin State Islamic University Makassar was in the first place, with 36 authors. In addition, Rahayu, R. N. (2018), discussed collaboration and author productivity in the Proceedings of the National Workshop on Documentation and Information of PDII LIPI for the 2013-2017 period. The results concluded that of the 66 articles written by 101 authors in the Proceedings of the Documentation and Information Workshop for the 2013 - 2017 period, the collaboration between authors was still low because articles were still dominated by a single author. This was reinforced by the low value of collaboration degrees, and low productivity because none of the authors wrote more than 2 articles during the 2013-2017 period.

Himawanto (2015) in his writing on "Bibliometric study of national oil and gas research 1997-2014", concluded that the national oil and gas research activities recorded in the SCOG journal during the period 1990-2014 totaled 336 activities. 41.07% was research on increasing oil and gas reserves and production, 25.89% was about oil and gas process research aimed at reducing dependence on oil. Oil and gas research activities were carried out by researchers from eight countries whose geographies were in six regional areas or three continents in the world. There were 112 researchers from four countries located on two continents who contributed to producing the articles, and some of the researchers had a global reputation with their Scopus index.

Natakusumah (2016), wrote an article on "Bibliometric analysis of the inkom journal". This study aimed to determine and measure the quantity and quality of INKOM journal articles for 5 years in the fields of informatics, computers, and control systems. Using the bibliometric analysis method, bibliographic data were taken from 76 articles published in journals from May 2007 to November 2011. The results of the study provided information that the majority of articles were contributed by multi-authors with a degree of collaboration of 0.553; This journal has been widely recognized by researchers outside LIPI, researchers from institutions other than LIPI dominate publications more than from LIPI itself. The number of research articles increased in 2011 and used more references from scientific articles than in the previous year. In addition, the quality of research has also improved and uses more articles from the scientific journal literature than from books.

METHODOLOGY

This research used the bibliometric method by analyzing articles published in JLBG in the 2016-2020 period. Pritchard (1969) states that bibliometrics is the use of mathematical and statistical methods in books or other communication media. Bibliometric studies involve qualitative analysis of a publication or a set of publications, by looking at the bibliography, namely authorship, year of publication, citation, pictures, and graphics, etc. Data related to articles are obtained through electronic journal pages at http://jlbg.geologi.esdm.go.id/index.php/jlbg/, as shown in Table 1 below.

Table 1. JLBG Data for the 2016-2020 Period

Year	Volume	Issue	Month	Article
2016	7	1	April	5
2016	7	2	Aug	5
2016	7	3	Dec	5
2017	8	1	April	5
2017	8	2	Aug	5
2017	8	3	Dec	5
2018	9	1	April	5
2018	9	2	Aug	5
2018	9	3	Dec	5
2019	10	1	April	5
2019	10	2	Aug	5
2019	10	3	Dec	5
2020	11	1	April	5
2020	11	2	Aug	5
2020	11	3	Dec	5

The data obtained from this study were processed by using Ms. Excel to map all data and Publish or Perish application to get citation analysis results. The figures of JLBG could be measured as a form of evaluation of the quantity and quality of articles published, the productivity of the author, and the overall journal, and these numbers are usually presented in

a metrical form. The metric category is divided into three categories, namely productivity metrics, which is a metric containing information on the number/number of article citations, the number/number of articles each academic year, the number/number of articles by individual authors. Furthermore, impact metrics contain information on the total number of citations, the number of citations each academic year, the number of citations each author/journal, and usage log data such as usage impact factors which consist of the average usage level for articles published in journals. Finally, hybrid metrics consist of information about the average citation of each article and the h-index, g-index, and h-index of the individual. These indicators are used to capture and determine the productivity and impact of scientific work (Hall, 2011).

The publish or perish application uses the google scholar query data source to be able to analyze citation numbers in a scientific journal whose results are presented in metrical form. Information on citation numbers includes: publication years, citation years, articles (papers), journal cites / year, cites / paper, cites / author, articles papers/author, number of authors each article (author/paper), h-index, g-index, hI, norm, and hI, annual. The analysis produced is complete and can be used as an evaluation material for the quality of articles each author, as well as the quality of the journal as a whole (Aulianto, 2019).

DATA ANALYSIS AND DISCUSSIONS

Article Distribution by Year

JLBG has 4 months frequency published which means that it is published 3 times - April, August, and December in a year. During the 5 years of publication in the 2016-2020 period, the total number of articles published was 75 articles. The number of articles, which had been published, is always consistent with 15 article titles each year, which means that for each issue number there are 5 articles published.

Graphics 1. Number of articles JLBG per year
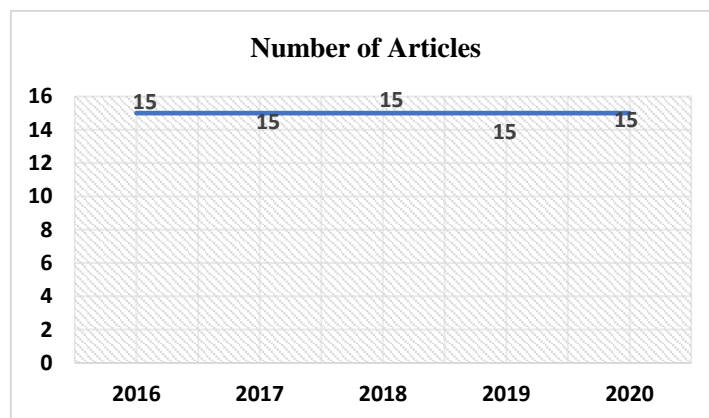
The consistency of the number of articles published annually by JLBG is the policy of the journal's editorial board, but it is following the principle of minimum standard requirements of a scientific journal and focusing on the quality of the published manuscripts.
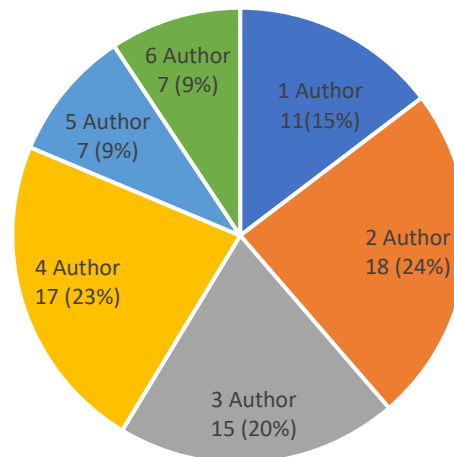
Number of Authors and Authorities

The articles published by JLBG are research articles written either independently or in collaboration. The information in table 2 regarding the number of authors in each article published in the 2016-2020 period showed that the variety of writers in JLBG starts from a

single author and collaborative writer consisting of 2 authors, 3 authors, 4 authors, 5 authors, and 6 authors.

In graph 1, it could be seen about the information of article distribution based on the number of authors in each article. It showed that the most article distribution was written by a combination of 2 authors as many as 18 articles or 24% of the total 75 published articles. Meanwhile, for single authors 11 articles or 15%. Other collaborative authors were consecutive, 17 articles are written by a combination of 4 authors, 15 articles were written by a combination of 3 authors, and 7 articles each for a combination of 5 and 6 authors.

Graph 1. Number of Authors and Authorities

By looking at the authors involved in one JLBG edition number, there were at least 10 authors in one publication numbering, namely in Vol. 8 No. 2 of 2017 and at most 24 authors involved in one issue number in Vol. 11 No. 3 of 2020. The total number of authors who contributed to the 2016-2020 period was 237 authors in 75 published articles. As the information is shown in table 1, each volume consists of 15 articles, and the details of the contributors are as follows: Vol. 7 of 2016, 43 contributors, Vol. 8 of 2017 had 45 contributors, Vol. 9 of 2018 with 47 contributors, Vol. 10 of 2019 - 47 contributors and Vol. 11 of 2020, 55 contributors.

Table 2. Number of Authors and Authorities

Year	Vol	Issue	Author Collaboration						Total	
			1 Author	2 Author	3 Author	4 Author	5 Author	6 Author		
2016	7	1	1	2	1	0	1	0	13	
	7	2	1	0	2	0	1	1	18	43
	7	3	2	1	1	0	1	0	12	
2017	8	1	0	1	0	3	1	0	19	
	8	2	2	1	2	0	0	0	10	45
	8	3	1	1	1	1	0	1	16	
2018	9	1	1	2	0	1	0	1	15	
	9	2	1	2	0	2	0	0	13	47
	9	3	0	1	0	3	1	0	19	
2019	10	1	0	3	1	0	0	1	15	
	10	2	1	1	1	2	0	0	14	47
	10	3	1	0	1	2	0	1	18	
2020	11	1	0	2	1	2	0	0	15	
	11	2	0	1	3	0	1	0	16	55
	11	3	0	0	1	1	1	2	24	
Total			11	18	15	17	7	7	237	

Besides the information about article distribution based on the number of authors in each article, graph 2 talks about authorship patterns which are divided into two, those articles which are written alone (single) and articles which are written together (collaboration). It can be seen that the number of single authors in a period of 5 years has decreased, sequentially, namely 4 articles in 2016, 3 articles in 2017, 2 articles in 2018, 2 articles in 2019, and no articles written by a single author in 2020 On the other hand, there has been a gradual increase in collaboration writers during the 2016-2020 period, namely 11 articles in 2016, 12 articles in 2017, 13 articles in 2018, 13 articles in 2019, and 15 articles in 2020.

Graph 2. JLBG authorship pattern for the 2016-2020 period
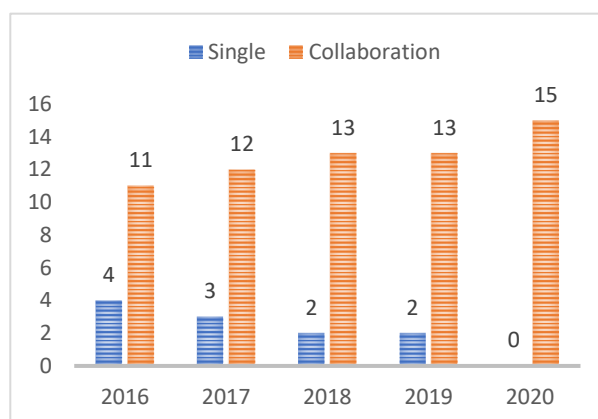
In detail, information about the JLBG authorship pattern can be seen in table 3. During the 2016-2020 period the number of articles published by JLBG was 75, there were 11 articles written by a single author and 64 articles written by collaborative authors. The authorship pattern during the 2016-2020 period consisted of 15% of articles written by a single author and 85% of articles written by collaborative authors.

Articles published by JLBG have been written by collaborative authors as a whole, it can be seen in volume 8 number 1 in 2017, volume 9 number 3 in 2018, volume 10 number 1 in 2019, and in the 2020 edition the articles published are entirely the result of collaboration writing or no single author, the number of collaborative authors on editions number 1, 2, and 3 of 2020 is 100%.

Table 3. Distribution of articles based on authorship patterns

Year	Vol	Issue	Author		Percentage (%)	
			Single	Collaboration	Single	Collaboration
2016	7	1	1	4	20%	80%
	7	2	1	4	20%	80%
	7	3	2	3	40%	60%
2017	8	1	0	5	0%	100%
	8	2	2	3	40%	60%
	8	3	1	4	20%	80%
2018	9	1	1	4	20%	80%
	9	2	1	4	20%	80%
	9	3	0	5	0%	100%
2019	10	1	0	5	0%	100%
	10	2	1	4	20%	80%
	10	3	1	4	20%	80%
2020	11	1	0	5	0%	100%
	11	2	0	5	0%	100%
	11	3	0	5	0%	100%
			11	64	15%	85%

Average Number of Authors each Article

Table 4 showed information about the average author of each JLBG article in the 2016-2020 period, could be seen that the highest in 2020 with a 3.67 mean score for each article, and 3.13 in 2018 and 2019, 3.00 in 2017, and the smallest average author each article was 2.87 in 2016.

Table 4. Average number of authors per article

Year	Total Articles	Total Author	Number of Author/Article
2016	15	43	2.87
2017	15	45	3.00
2018	15	47	3.13
2019	15	47	3.13
2020	15	55	3.67
Total	**75**	**237**	**3.16**

Number of Article Pages

The number of article pages published by JLBG can be seen in table 4. During the 2016-2020 period, the number of article pages varied greatly. The provisions regarding the number of pages on JLBG are not specifically regulated and are adjusted to each article. Meanwhile, the standard provisions for the number of articles are based on the national accreditation rules for scientific journals published by the Ministry of Research, Technology and Higher Education, that the assessment of the number of pages in a scientific journal is given if the minimum number of pages in one volume is 101 pages.

During the publication of volume 7 to volume 11, it could be seen that the number of article pages was at least 6 pages, there were 2 articles, namely in the second article volume 8 number 1 in 2017 and the third article volume 9 number 3 in 2018, while the article with the highest number of pages was the fourth article. volume 11 number 2 of 2020 with 17 pages. If you looked at the journal numbering for the 5-year publishing period, the highest number of pages was volume 10 edition number 2 in 2019 with 63 pages and viewed from the journal volume during the 5 years of the publication period, the highest number of pages was 167 pages in volume 10 in 2020. Total JLBG pages for the period 2016-2020 were 814 pages.

Table 4. Distribution of articles based on the number of pages

Year	Volume	Issue	Month	Pages						
				Art.1	Art.2	Art.3	Art.4	Art.5	Total	
2016	7	1	April	8	9	16	10	11	54	
2016	7	2	Aug	12	10	10	14	10	56	165
2016	7	3	Dec	12	10	10	10	13	55	
2017	8	1	April	12	6	12	16	10	56	
2017	8	2	Aug	14	14	12	8	12	60	164
2017	8	3	Dec	10	8	8	10	12	48	
2018	9	1	April	10	10	10	13	8	51	
2018	9	2	Aug	12	12	10	10	9	53	152
2018	9	3	Dec	11	10	6	8	13	48	
2019	10	1	April	10	8	9	9	12	48	
2019	10	2	Aug	14	12	13	10	14	63	167
2019	10	3	Dec	12	12	10	10	12	56	
2020	11	1	April	9	13	15	8	14	59	
2020	11	2	Aug	10	13	10	17	9	59	166
2020	11	3	Dec	10	8	8	9	13	48	
Total Pages										**814**

Number and Types of Reference

References used by articles published in the 2016-2020 JLBG period could be seen in table 5, during the 5 years of publication the number of bibliographies used was 1457 libraries divided into 737 primary libraries and 720 secondary libraries. The provisions regarding the number of primary libraries used in JLBG were not specifically regulated, only mentioning to use of the library for the last 5 years (new edition). During the publication of 2016 to 2020, it could be seen that the number of references used as a reference was at least 74 in volume 7 edition number 1 of 2016, and the most widely used library as a reference for writing articles is in volume 8 number 2 of 2017 with 127 libraries.

When it was viewed from the journal numbering for the 5 year publication period, the largest number of primary libraries was volume 9 edition number 2 in 2019 with 77 primary libraries, while the largest number of secondary libraries was volume 8 number 2 in 2017 with 77 secondary libraries. The use of primary and secondary libraries in JLBG for the 2016-2020 period looked almost balanced, 50.58% primary literature and 49.42% secondary literature.

Table 5. Distribution of articles based on literature

Year	Volume	Issue	Reference		
			Primery	**Secondary**	**Total**
2016	7	1	34	40	74
2016	7	2	49	51	100
2016	7	3	50	49	99
2017	8	1	55	40	95
2017	8	2	50	77	127
2017	8	3	54	29	83
2018	9	1	40	57	97
2018	9	2	77	40	117
2018	9	3	17	53	70
2019	10	1	64	54	118
2019	10	2	40	58	98
2019	10	3	65	30	95
2020	11	1	48	39	87
2020	11	2	51	50	101
2020	11	3	43	53	96
Total			**737** **50.58%**	**720** **49.42%**	**1457** **100%**

JLBG Citation Analysis using the Publish and Perish Application

Citations are used in scientific works to provide acknowledgment of the influence of previous works or to refer to those who have scientific authority. A journal's scientific impact assessment is calculated by dividing the number of citations by the number of articles published in a specific period, usually within two years of publication. Hartinah (2002: 2) further mentions the quality of scientific work and its urgency for evaluating research programs; mapping of science visualized in various disciplines; science and technology development indicators; quality and presentation of scientific work; and the impact factor of the journal.

Articles that have been published by JLBG have slowly been cited by other authors, this can be seen from the increasing number of citations. The JLBG manager has made a google scholar find out how many articles have been cited. One of the factors that make a scientific work successful is whether or not many other writers have quoted the article. The greater the number of citations, the greater the usefulness of the published work. Analysis to measure the

frequency of one's work quoted by others through citation analysis (Erwina and Yulianti, 2012).

Figure 1. JLBG Citation Metric

Results	Help
Publication years:	2016-2020
Citation years:	5 (2016-2021)
Papers:	75
Citations:	72
Cites/year:	14.40
Cites/paper:	0.96
Authors/paper:	2.39
h-index:	4
g-index:	5
hI,norm:	3
hI,annual:	0.60
hA-index:	2
Papers with ACC >= 1,2,5,10,20:	
	11,0,0,0,0

Information based on Figure 1 regarding the results of the JLBG citation analysis using the Publish or Perish application taken in May 2021, with a search using the keyword "journal name" and the period "2016-2020", produces the following analysis data: publication years is the year the journal was published namely starting from 2016-2020.

Figures on citation years are obtained from citations or citations made by other authors from 2016 to 2021. The number of JLBG Papers published in 2016-2020 were 75 published articles, with 72 citations. The JLBG cites / year figure of 14.40 was obtained from the total citation figure of 72 divided by 5 (year published). The cites/paper figure of 0.96 was obtained from the total citation figure divided by 75 (the number of articles), the author/paper number is 2.39. The h-index is an index used to measure the productivity and impact of an article published by authors, researchers, and scientists. This index is based on the number of scientific papers produced by the author and the number of citations (citations) received from other authors/publications. An author/journal can have an h-index if each article is published as many as h and has been cited at least h times. The h-index reflects the number of publications and the number of citations per publication. The number of citations from the cumulated articles cited affects other articles and can be used to calculate the g-index. The calculation of the g-index is the average number quoted as a whole, after being sorted to number g. The citation weights received by the document are considered in the g-index calculation; and the g-index for a particular author (researcher/scientist) is not limited by the total number of publications (Costas and Bordons, 2018). H-index and g-index are numbers in the order of documents to after the documents are sorted by number cited. On the Harzing.com page, it is informed that the hI, the norm is an individual h-index obtained from normalizing the number of citations for each article by dividing the number of citations by the number of authors for that article, and then calculating the h-index of the normalized number of citations. Whereas hI, annual (HLA) is a number obtained from hl, norm divided by academic age (number of years that have been in effect since the first publication). In Figure 1, JLBG has h-index 4, g-index 5, hI, norm 3, and HLA 0.60.

Table 6.Data on the number of citations per JLBG article - Top 10

Rank	Cited	Author	Tittle	Year	CitesPerYear	CitesPerAuthor	AuthorCount
1	7	L Handayani, ND Hananto…	Penentuan Per	2017	1.75	2	3
2	7	K Sugianti, D Mulyadi, R Maria	Analisis kerenta	2016	1.75	2	3
3	6	P Susilanto, D Ngadmanto…	Penerapan Met	2016	1.2	2	3
4	6	T Setiawan, NMA Asgaf	Analisis Karakte	2016	1.2	3	2
5	4	ZDG Raja, H Hendarmawan…	KAJIAN UPAYA	2017	1	1	3
6	4	PS Putra, E Yulianto	Stratigrafi Enda	2016	0.8	2	2
7	3	B Sunardi	Variasi Gas Rac	2018	1	3	1
8	3	I Narulita, D Marganingrum	Analisis Curah I	2017	0.75	2	2
9	3	R Irzon	Nickel and Chro	2017	0.75	3	1
10	3	D Marganingrum, LM Estiaty	Evaluasi Kebija	2016	0.75	2	2

The list of article citation numbers in the JLBG after being ranked in the top 10 could be seen in table 6. The citation figures were citations for all articles published from 2016 to 2020 and citations by other authors were carried out from 2016 to 2021. Furthermore, table 6 provided numerical information. The highest article citation was 7 citations, there were 2 articles with 7 citations written by L Handayani et al and K Sugianti et al. The next ranking was with the number of citations 6, there were 2 articles with the number of citations 6 written by P Susilanto et al and T Setiawan et al. Furthermore, the number of citations 4 had 2 articles and the number of citations 3 in 4 articles. The higher the citation number, the more useful the articles were written and published, this could be used as evaluation material by JLBG managers that the quality of the articles published was good.

CONCLUSION

JLBG is published 3 times a year or 4 months, namely in April, August, and December. The quality of articles published in JLBG can be seen from many scientific impacts that have been produced, that is in the form of citation numbers achieved. The more JLBG articles that have high citation numbers, it means that more writings quote the article so that the benefits of publication are increasingly visible. Since 2016-2020 JLBG has published 75 with more collaborative authors (85%) than single authors (15%). The number of article pages published by JLBG during the 2016-2020 period was 814 pages, and the reference literature used was 1457 consisting of 737 (50.58%) primary libraries and 720 secondary libraries (49.42%). JLBG has been cited 72 times, the most articles have 7 citation numbers, the overall JLBG citation rate per year during 2016-2020 is 14.40 and the citation per article is 0.96, besides the numbers h-index 4, g-index 5, hI, norm 3, and p. 0.60.

REFERENCES

Aulianto, Dwi Ridho, Pawit M Yusup, Yanti Setianti. (2019). Pemanfaatan Aplikasi "Publish Or Perish" Sebagai Alat Analisis Sitasi Pada Jurnal Kajian Komunikasi Universitas Padjadjaran. Book Chapter Seminar Nasional MACOM III "Communication and Information Beyound Boundaries. Page 873-880. AKSEL Media Akselerasi.

Aulianto, Dwi Ridho, Wahid Nashihuddin. (2020). Bibliometrics And Citation Analysis of "BACA: Jurnal Dokumentasi Dan Informasi" Published During 2015-2019. Khizanah al-Hikmah : Jurnal Ilmu Perpustakaan, Informasi, dan Kearsipan, 8(2), 149-160. DOI: https://doi.org/10.24252/kah.v8i2a5

Costas, Rodrigo and Maria Bordons. (2018). Is g-index better than h-index? An exploratory study at the individual level. Scientometrics, Vol. 77, No. 2 (2008) 267–288 DOI: 10.1007/s11192-007-1997-0 Akadémiai Kiadó, Budapest and Springer, Dordrecht.

Erwina, Wina dan Yulianti. (2012). Kajian Sitasi Karya Ilmiah Dosen Fikom Unpad dalam Skripsi Mahasiswa: Analisis Sitasi Karya Ilmiah Dosen dalam Skripsi Mahasiswa Pada Database GDL di Fikom Library And Knowledge Center (Flkc) Universitas Padjadjaran Pada Semester Genap Tahun 2011. Edulib Vol. 2 No. 2 November 2012 Hal. 139-157 ISSN 2089-6549

Hall, C Michael. (2011). Publish and perish? Bibliometric analysis, journal ranking and the assessment of research quality in tourism. Tourism Management 32 2011. Page 16-27. ISSN 0261-5177. doi:10.1016/j.tourman.2010.07.001

Himawanto. (2015). Kajian bibliometrik riset minyak dan gas bumi nasional 1997-2014. Khizanah Al-Hikmah: Jurnal Ilmu Perpustakaan, Informasi, dan Kearsipan. 3(1), 46-63. Diambil dari http://journal.uin-alauddin.ac.id/index.php/khizanah-al-hikmah/article/view/587/600

Hartinah, Sri. (2002). Analisis Sitiran (Citation Analysis). Materi Kursus Bibliometrik. Jakarta: Masyarakat Infometrika Indonesia

Harzing, A.W. (2007). Publish or Perish, available from https://harzing.com/resources/publish-or-perish

Harzing, A.W. (2011). Publish or perish book: your guide to effective and responsible citation analysis. Melbourne Australia: Tarma Software Research Pty Ltd

Harzing.com. Research in International Management. Diakses tanggal 12 juni 2019. Source: https://harzing.com/resources/publish-or-perish/tutorial/metrics/hi-norm-and-hia.

Hayati, Nurul. (2016). Analisis Sitiran sebagai Alat Evaluasi Koleksi Perpustakaan (Citation Analisis as a Tool of Library Collections Evaluation). Record and Library Journal Vol. 2 No. 1 Januari – Juni 2016 eISSN 2442-5168.

Natakusumah, E. (2016). bibliometric analysis of the inkom journal (analisis bibliometrik jurnal inkom). *Baca: jurnal dokumentasi dan informasi, 36*(1), 1-10. doi:https://doi.org/10.14203/j.baca.v36i1.199

Nashihuddin, Wahid dan Dwi Ridho Aulianto. (2016). Pengelolaan Terbitan Berkala Ilmiah Sesuai Ketentuan Akreditasi: Upaya Menuju Jurnal Terakreditasi dan Bereputasi Internasional. Jurnal Pustakawan Indonesia Vol. 15 No. 1-2 2016. Hal 83-98

Pritchard, A. (1969). Statistical Bibliography or Bibliometrics. Journal of Documentation. 25 (4) : 348-349. Sumber diakses tanggal 10 Agustus 2019. https://www.researchgate.net/publication/236031787_Bibliography_or_Bibliometrics.

Rahayu, R. N. (2019). Khizanah al-Hikmah : Jurnal Ilmu Perpustakaan, Informasi, dan Kearsipan (analisis bibliometrika pada terbitan tahun 2013-2018). Khizanah al-Hikmah : Jurnal Ilmu Perpustakaan, Informasi, dan Kearsipan, 7(1), 82-91. DOI: 10.24252/kah.v7i1a8.

Rahayu, R. N. (2018). Kolaborasi dan Produktivitas Penulis pada Prosiding Lokakarya Nasional Dokumentasi dan Informasi PDII LIPI Periode 2013-2017. Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan, 4(2), 57-66.

Rahm, E. & Thor, A. (2005). Citation Analysis of Database Publications. SIGMOD Record, 34(4), 48–53.

Smith, D.R. (2008). Citation Analysis and Impact Factor Trends of 5 Core Journals in Occupational Medicine, 1985–2006. Archives of Environmental & Occupational Health, 63 (3).

Sulistyo-Basuki. (2019). Bunga Rampai Informetrika 2019. Editor: Setiadi, I.T., Anugrah, E.P., Cahyani, I.R., Hapsari, N.F.A., Hanifa, Z., Anwary, A., Muhammad, R.U., & L.Sulistyo-Basuki. Papua: Aseni.