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A Journey of Fifteen-years of the Journal of Information Literacy (JIL): A Bibliometric Analysis

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Assessing research activity is very important for designing future protective and adaptative policies. The present study was the bibliometric analysis that aimed to summarise research activity in the current journal of Information literacy and characterize itsessential aspects. The bibliometric analysis identified mainly the year-wise distribution of articles, Degree of collaboration; author productivity; most prolific authors' affiliation of institutions and country and keyword occurrence analysis of the journal. The study showed that a total of 417 articles were published in the journal from 2007 to 2021. The highest number of articles, i.e. 53 (12.70%), was published in 2018, and the average productivity per author is 1.55 and article per author is 0.64 during the study period. In this study, we have identified the top 20 keywords occurrences and found that the Literacy term was used the most. The most prolific author is Secker.

Keywords: *Journal of Information Literacy; Bibliometric; Bibliometric analysis; Degree of Collaboration; Author Productivity; Keyword occurrence*.

1 INTRODUCTION

Bibliometrics is an essential scientific tool to evaluate the standard of any journal. The subject of bibliometrics was first described by Pritchard (1969)[1]as"the application of mathematical and statistical methods to books and other media" [2]. It involves analyzing a set of publica-tions characterized by specific variables such as the citations, the associated subject keywords, the place of publication and publication, authors.

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Hawkins (1977)[3]defined bibliometrics as "the application of quantitative analysis in the bibliographic references of the body of literature".Scharder (1981)[4]defined bibliometrics as "the scientific study of recorded discourse."Egghe (1988)[5]explained bibliometrics as the development and application of mathematical models and techniques to all aspects of communication[6].

Bibliometrics is the quantitative explanation of literature that aids in measuring the patterns of forms of recorded information and their producers[7]. Bibliometric studies[8] were used to identify the pattern of publication, authorship, citations and journal coverage with the hope to provide an insight into the dynamics of the field under consideration[9].According to Potter (1981)[, 10] bibliometrics is a means for studying and measuring all forms of written communication, their authors and publication patterns[11]. In general, bibliometrics may be defined as the quantitative analysis to monitor the growth of literature and research patterns[12].Bibliometrics use quantitative measuring and statistics to outline the publication pattern with a body of literature or a given field. Researchers use bibliometric analysis methods to spot the influence of one author or define the relationship of two or more authors or their works[13].Bibliometric analyses have been[14] reported to be empathetic tools that can quantitatively measure research outputs based on geometrical and statistical methods[15]. Thistechnique can adequately analyze metrological features of data generated in a given domain[16]. Many publishing entities have included[17] bibliometric studies as publishable research component[18].

The bibliometric analysis helps in the comparative assessment of the secondary services, mainly when related to overall figures on the size of literature and subject links. This may help the publishers get an idea of their achievements and competitions and could be helpful for marketing purposes[19].The bibliometric data also helps in taking some management decisions. For example, it helps select specific primary and secondary journals and helps plan future staff, building needs, and improving library services[20].The bibliometric study also provides information about the structure of knowledge and pattern of communication[21]. Analysis of the size and growth of literature can identify the developing and declining areas of literature over time and the trend of literature growth.

Journals are the most critical indicators of literature development in any field of knowledge. They are the main channel to transmit knowledge.This paper studies the bibliometric analysis of the literature published in a journal entitled"The Journal of Information Literacy (JIL)" from volume 1 (2007) to volume 15 (2021). JIL is an international and peer-reviewed journal[22]that

publishes innovative and challenging research articles and project reports which push the boundaries of information literacy thinking in theory, practice and method. It aims to develop deep and critical understandings of the role, contribution and impact of information literacies in everyday health, education and workplace contexts[23].JIL is published twice a year and hasan acceptance rate of 44% for articles submitted to the journal. JIL aims to investigate information literacy in all its forms to address the interests of diverse IL communities of practice.To this end, it publishes articles from both established and new authors in this field - both internationally renowned authors and library professionals who teach or undertake research into information literacy[24].

2 REVIEW OF LITERATURE

There are varieties of studies available on bibliometricanalysis. However, the studies concerning the present viewpoint have been considered over here. A few of them have been discussed as follows.

Sweileh (2020)[25] studied" Bibliometric analysis of peer-reviewed literature on climate change and human health with an emphasis on infections diseases" from 1980 to 2019. The author applied a bibliometric method by using SciVerse Scopus. Results show that the growth of publication steep increased after 2007. Authors had four research themes in thehealth-related literature:i) climate change and infectious diseases; ii) climate change, public health and foodsecurity; iii) heatwaves, mortality, and non-communicable diseases; and iv) climate change, air pollution, allergy, and respiratory health. The most frequently encountered pathogens/infectiousdiseases in the infection-related literature were malaria and dengue. The study resulted that documents in infection-related literature had a higher h-index than documentsin the health-related literature. The top-cited documents in the health-related literature focused on food security, public health, and infectious diseases, while those in infection-related literature focused on water, vector, andmosquito-borne diseases. Journal received the highest citations per document in the EnvironmentalHealth Perspectives.

Donthu et al., (2020)[26]directed study on "Forty-five years of Journal of Business Research: A Bibliometric Analysis" during 1973 to 2017. Authors analyzed the journal's impact, prominent topics, and most prolific authors,including their affiliated institutions and countries. They were using network analysis in VOSviewer software, authors group JBR publications into six clusters. Through Gephi software, the findings depict the co-authorship andbibliographic couplings of authors and their affiliated institutions and countries, co-citations of journals, and co-occurrenceof author-specified

keywords. It was found that 2016 was the most productive year, and all the top JBR articles received at least 1000 citations in Scopus

Gaviria-Marin et al. (2018)[27] conducted a study on"Twenty Years of the Journal of Knowledge Management: A bibliometricAnalysis"between 1997 to 2016. The authors aim to show an updated analysis of journal publications and also focuson bibliometric analysis. Authors usebibliometricindicators such as h-index, productivity and citations; consider different dimensions like papers, authors, universities and countries; usedVOSviewer software to carry out themapping of the science of JKM, which is based on the concurrence of crucial words and co-citation points ofview, seeks to analyze the structure of the references of this journal graphically. Authors find that the USA and the UK lead the publications in this journal, although Europe is the most productive at a regional level.

Abdi et al. (2018)[28] examines a bibliometric analysis of the journal titled "Information Processing & Management (IP&M)" for the period from 1980 to 2015.Authors analyzed that 2,913 papers were published in the journal of IP&M from 1980 to 2015. They also identified the top 10 prolific authors, top 10 institutions and top 24 prolific countries with many papers. Researchers from the USA have made the most contributions (50.88%), and the2010-2015 degree of collaboration has increased three times.

3 OBJECTIVES OF THE STUDY

The study was carried out to:

- analyze the distribution of articles;
- classify authorship productivity and the degree of collaboration;
- identify the top 10 prolific authors, their affiliation of institutions and country; and
- examine keyword co-occurrence.

4 METHODOLOGY

The Journal of Information Literacy (JIL) has been selected as the source journal for this present study.Only one journal was selected for the present study to know research trends in a selected journal by applying bibliometric indicators. JIL is international, open access and **peer-reviewed** journal. The journal started in the year 2007 and has fifteen volumes from 2007 to 2021. All these fifteen have been consideredfor the present study. The relevant data for the study has been downloaded from the journal websites, and for network visualizing,VOS viewer software[29] was exported from Dimensions[30] on April

07, 2021. Total 417 articles were selected for the present study, and data were entered into a spreadsheet that identified variables such as year-wise distribution of articles;Degree of collaboration, author productivity and keyword occurrence. All relevant data were sorted, tabulated and assimilated in a logical order for analytical purposes.

5 DATA ANALYSIS

5.1 YEAR WISE CONTRIBUTION OF ARTICLES

Table 1: Year-wise contribution of articles

Year	Volume no.	Number of Articles	% of Articles
2007	1	27	**6.47**
2008	2	22	**5.27**
2009	3	20	**4.79**
2010	4	26	**6.23**
2011	5	25	**5.99**
2012	6	32	**7.67**
2013	7	33	**7.91**
2014	8	34	**8.15**
2015	9	31	**7.43**
2016	10	28	**6.71**
2017	11	30	**7.19**
2018	12	53	**12.70**
2019	13	33	**7.91**
2020	14	15	**3.59**
2021	15	8	**1.91**
Total		**417**	**100**

Figure 1: Year-wise contribution of articles

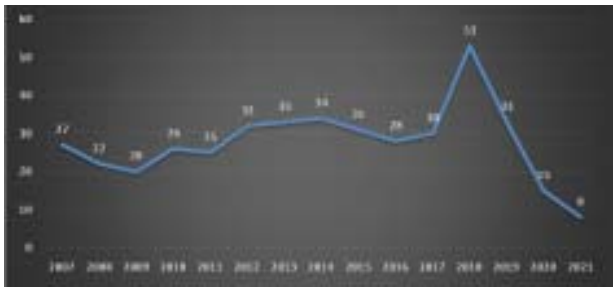


Table 1 and figure displays the year wise contributionof articles in the Journal of Information Literacy. During the study of the period 2007 to 2021, a total of 417 articles were published. The highest number of articles, 53 (12.70%), was published in 2018, while the lowest numbers of Article 15 (3.59%) were published in 2020. The journal is published twice a year. However, in 2021 has published only 1 issue,and the 2nd issueis yet to come. So, the year 2021 is not considered the lowest publication year. It is also observed thatin 2013 and 2019 same number of articles were published,i.e.,33.

5.2 DEGREE OF COLLABORATION

Table 2: Degree of Collaboration

Year	Single Authored Publication (Ns)	Multi Authored Publication (Nm)	Ns+Nm	Degree of Collaboration (DC=Nm/Nm+Ns)
2007	16	11	27	0.4
2008	19	3	22	0.13
2009	9	11	20	0.55
2010	19	7	26	0.26
2011	20	5	25	0.2
2012	22	10	32	0.31
2013	23	10	33	0.3
2014	25	9	34	0.26
2015	22	9	31	0.29
2016	22	6	28	0.21
2017	21	9	30	0.3
2018	39	14	53	0.26
2019	18	15	33	0.45
2020	5	10	15	0.66
2021	4	4	8	0.5
Total	**284**	**133**	**417**	**0.31**

Table 2 shows that single-author papers were 284 with the highest percentage (68.10%) in the whole period (2007-2021), which means single authorship predominates among multiple-authored. To determine the author's Degree of collaboration in a discipline Subramanyam (1983), [31]proposed a mathematical formula. Calculating the Degree of Collaboration (DC) among authors is the ratio ofthe number of collaborative publications against the total number of publications published in a discipline during specific periods.

The formula given by Subramanyam 1983)was is

$$D.C. = \frac{Nm}{Nm + Ns}$$

Where DC is the Degree of collaboration, Nm is the number of multi-authored papers, and Ns is the number of single-authored papers.

$$DC = \frac{413}{426} = 0.96$$

In the present study, the average value of DC is 0.31. Therefore, it indicatesthat most of the authors contributed their single authored articles during the study period.

5.3 AUTHOR PRODUCTIVITY

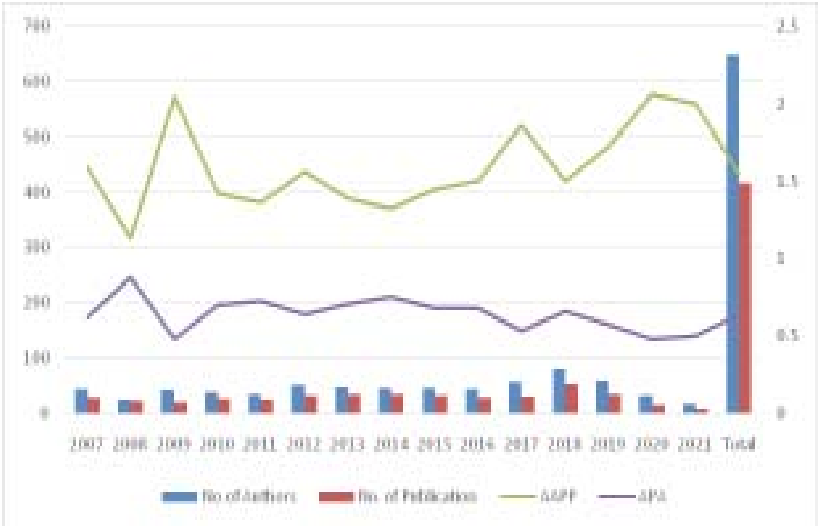
Table 3: Author Productivity

Year	Volume no.	No.of Authors	No. of Publication	AAPP*	APA**
2007	1	43	27	1.59	0.62
2008	2	25	22	1.13	0.88
2009	3	41	20	2.05	0.48
2010	4	37	26	1.42	0.7
2011	5	34	25	1.36	0.73
2012	6	50	32	1.56	0.64
2013	7	46	33	1.39	0.71
2014	8	45	34	1.32	0.75
2015	9	45	31	1.45	0.68
2016	10	42	28	1.5	0.68
2017	11	56	30	1.86	0.53
2018	12	80	53	1.5	0.66
2019	13	57	33	1.72	0.57
2020	14	31	15	2.06	0.48
2021	15	16	8	2	0.5
Total		**648**	**417**	**1.55**	**0.64**

*AAPP= Average Author(s) Per Publication

**APA= Article(s) Per Author

Figure 2: Author Productivity



To analyze author productivity, data has been presented in table 3 and figure 2. The table indicates that the average of authors per paper is highest (2.06) in 2020 and 2009 (2.05), whereas the lowest article per author is 0.48 same in both years 2009 and 2020. Overall, the average productivity per author is 1.55 and article per author is 0.64 during the period study. Author Productivity has been calculated with the following formula-

AAPP = No. of Authors ÷ No. of Papers

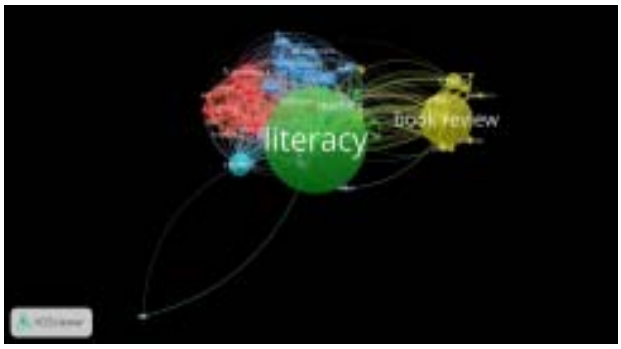
APA = No. of Papers ÷ No. of Authors

5.4 TOP 20 MOST CO-OCCURRED KEYWORDS

Table 4: Top 20 most Co-occurred keywords

Sr. No	Keyword	Number of keywords Occurrences
1	Literacy	170
2	Book review	80
3	Teaching	35
4	Report	31
5	Framework	21
6	Information literacy instruction	20
7	Staff	19
8	Course	19
9	Instruction	18
10	Strategy	18
11	Value	17
12	Perception	16
13	Outcome	16
14	School	15
15	Collaboration	15
16	Interview	14
17	Data	14
18	IL skill	14
19	Theory	14
20	Learner	14

Figure 3: Co-occurred keywords Network



In this section,Table 4 and Figure 3describe the co-occurrences mapping by using VOSviewersoftware[32].The pre-processed output dataset generated by Dimensions and input to generate a network map in VOSviewer has been used. In VOSviewr, an author keyword co-occurrence map was created;as shown in the figure, criteria of a minimumof 5 occurrences of a term in the softwarewere set. Total 2980 terms were found. Out of the 2980 terms, 162 meet the threshold.The software createsa network in 6 clusters, 1711 links and 3481is the total link strength. As shown in the table and figure, literacy keywords were used 170 times, and the author's used book review (80) and Teaching (35) keywords.

5.5 TOP 10 MOST PROLIFIC AUTHORS, THEIR AFFILIATION WITH COUNTRY AND INSTITUTIONS

Table 5: Top 10 Most Prolific authors, their affiliation with country and institutions

Authors Name	Number of Document	Affiliations with Country	Affiliations with Institutions
Secker, Jane	14	London (England)	City University of London
Coonan, Emma	9	England	Anglia Ruskin University, Centre for Innovation in Higher Education
Jackson, Cathie	7	Wales	Cardiff University
Russell, Philip	6	Dublin (Ireland)	Technological University of Dublin
Hicks, Alison	6	London (England)	University College, London
Andretta, Susie	6	London (England)	London Metropolitan University
Walton, Geoff	6	Manchester (England)	Manchester Metropolitan University
Carbery, Alan	4	Burlington, (Vermont, US.)	Champlain College
Williams, Dorothy	4	Aberdeen (Scotland)	Robert Gordon University
Webber, Sheila	3	Sheffield (England)	The University of Sheffield

Figure 4: Top 10 Most Prolific authors, their affiliation with country and institutions

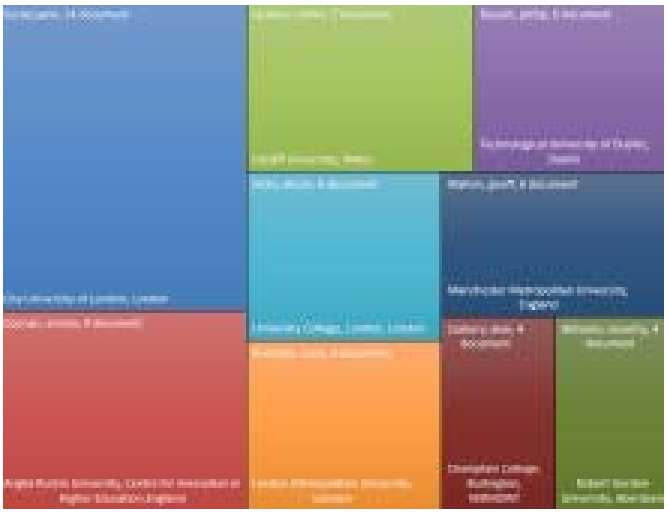


Table 5 and Figure 4represent the most prolific authors and their affiliation with countries and institutions.First most prolific author **Secker, Jane** affiliation is to**the** City University of London and belongs to London. Second prolific author **Coonan, Emma**affiliation isAnglia Ruskin University, Centre forInnovation in Higher Education belongs to England. Authors **Secker, Jane; Coonan, Emma; Hicks, Alison; Andretta, Susie; Walton, Geoff and Webber, Sheila** are from England. Whereas**Jackson, Cathie** is from Cardiff University and he belongs to Wales; author **Russell, Philip**from the Technological University of Dublin and he belongs to the Dublin (Ireland);**Carbery, Alan**from Champlain College belongs to Burlington (Vermont, US); and author **Williams, Dorothy** from Robert Gordon University belongs to Aberdeen (Scotland).

6 MAJOR FINDINGS

The following main useful facts were discovered from the analysis of the journal:

- The analysis displays a trend of growth in contributions published from 2007 to 2021. The highest number of articles,i.e. 53 (12.70%), was published in 2018. Further, the years 2013 and 2019 saw the same number of published,i.e. 33 articles.
- Single author papers were 284, with the highest percentage (68.10%) in the whole period (2007-2021).
- The Degree of collaboration in the journal of information literacy is ranged from 0.13 to 0.66 during the period 2007 to 2021. The average rate of Degree of collaboration is 0.31 and it shows that most of the

authors contributed their articles single-authored during the study period.

- The average productivity per author is 1.55, and the article per author is 0.64 during the study period.
- The results of keywords occurrences show that the term "Literacy"wasused most 170 times ", Book review" 80 times and "Teaching"keyword was used 35 times.
- The findings show that the first most prolific author **Secker, Jane,**is affiliated withthe City University of London and belongs to London. Second prolific author **Coonan, Emma,**isfrom Anglia Ruskin University, Centre for Innovation in Higher Education belongs to England.
- **Jackson, Cathie** belongs to Wales, **Russell, Philip** belongs to Dublin (Ireland); **Carbery**belongs to Burlington (Vermont, US); author **Williams, Dorothy** belongs to Aberdeen (Scotland), and other six authors belong to England.

7 CONCLUSION

Many of the researchershave used the bibliometric method to knowthe character of literature in different fields. Journals are the most critical indicators of literature development in any field of knowledge. This work presents an analysis of the Journal of Information Literacy over fifteen years (2007-2021). The journal published 417 articles during the study period. In our study degree of collaboration is ranged from 0.13 to 0.66 during the period 2007 to 2021. The average rate of the Degree of collaboration is 0.31. Shukla(2020)[33,] also in his study, found 0.47 degree of collaboration. It is evident from this study thatmost of the authors contributed their articles single-authored. Smarmily result was found inPanda et al., (2013)[34] studythat most of theauthors contributed their articles in single-authorship, from both results authors concluded that most of the articles were submitted in Journal of Information literacy were written by a single author. This journal indeedis an international journal in the field of information literacy, the journal concentrated solely on research conducted in the United Kingdom. Journal should include contributions from all over the world. The authors further suggest thatthe journal should be included more indexing services to improve visibility, usability, and impact of the journal.Study helpful forpublisher and editor of the journal enhance the status, quality of journal among their competitors[35]. It can alsobenefit libraries, researchers, and readers for scholarly communication because this study highlighted the most contributed authors in this journal of painstaking field research of information literacy.

REFERENCES

1. PRITCHARD(A). Statistical bibliography or bibliometrics?.*Journal of Documentation.* 25, 4; 1969;348-9.
2. YANG(S L)YUAN(Q L)andDONG(J H). Are Scientometrics, Informatrics, and Bibliomterics Different?.*Data Science and Informetrics.* 1, 2020; 50-72.
3. HAWKINS (DT). Unconventional uses of on-line information retrieval systems: On-line bibliometrics studies. *Journal of the American Society for Information Science*. 28, 1; 1977; 13-18. https://doi.org/10.1002/asi.46 30280103
4. SCHRADER (A. M). Teaching bibliometrics. 1981.https://www.ideals.illinois.edu/handle/2142/7192
5. EGGHE (L). Methodological aspects of bibliometrics. *Library Science.*25, 1988; 179-191
6. EGGHE (L). On the classification of classical bibliometrics laws. *Journal of Documentation.* 44; 1988; 53-62.
7. SHILBURY(D). A bibliometric analysis of four sport management journals. *Sport Management Review*. 14, 4; 2011;434-52.
8. WARRAICH (NF) and AHMAD(S). Pakistan Journal of Library and Information Science: Abibliometric analysis. *Pakistan Journal of Library and Information Science*. 12; 2011; 1-7.
9. KUMAR(A)andKUSHWAHA(DGS). Bibliometric analysis of supply chain management: An international journal from 2005-2014. *International journal of Supply Chain Management.*4, 2; 2015. http://ojs.excelingtech.co.uk/iindex.php/IJSCM/ article/view/1077
10. POTTER (WG). Introduction to library trends 30 (1) summer 1981: Bibliometrics. 1981. https://www.ideals.edu/handle/2142/7179
11. FUJITSU LH531. (2018, November 29). Bibliometrics. *Library & Information Science Network*.https://www.lisbdnetwork.com/bibliometrics/
12. JAN (R) WANI (W)andHAFIZ (O).Scientometric analysis of cloud computing. *Library Philosophy and Practice (e-Journal).*2015. https://digitalcommons.unl.edu/libphilprac/1273
13. CHAPARWAL (N)TELI(N)andRAJPUT(P S). Mapping of research papers in Malaysian journal of library and information science 2010-2019: A bibliometric study. *Library and Philosophy and Practice (e-journal)*. 2020.https://digitalcommons.unl.edu/libphilprac/4343
14. PRITCHARD(A). Statistical bibliography or bibliometrics?.*Journal of Documentation.* 25, 4; 1969;348-9.
15. DALPE(R). Bibliometric analysis of biotechnology. *Scientometrics.* 55; 2002;348-9
16. ELLEGAARD(O) andWALLIN(JA). The bibliometric analysis of scholarly production: How great is the impact?.*Scientometrics.* 105; 2015;1809-31.
17. WAKELING(S)…et al. Transitioning from a conventional to a 'mega' journal: A bibliometric case study of the journal medicine. *Publications.*5, 2; 2017; 7.
18. HUI, (J)…et al. A bibliometricanalysis of international publication trends in premature ejaculation research (2008-2018). *International Journal of Impotence Research.* 33, 1; 2021; 86-95. https://doi.org/10.1038/s4144-019-0224-x

19. HUSSAIN(A)andARIF(A).Bibliometric analysis of regional studies – a quarterly journal of institute of regional studies, Islamabad, Pakistan. *Library Philosophy and Practice (e-Journal).* 2021.https://digitalcommons.unl.edu/libphilprac/5157
20. MAHAPATRA (G). Bibliometric studies in the internet era (2nded.). 2009 Indiana Publishing House;New Delhi.
21. ZENG(R)andCHINI(A). A review of research on embodied energy of buildings using bibliometric analysis. *Energy and Buildings.* 155, 2017; 172–184. https://doi.org/10.1016/j.enbuild.2017.09.025
22. JOURNALS FOR FREE—Journal detail: Journal of information literacy. (n.d.). Retrieved April 17, 2021, from http://www.journals4free.com/link.jsp?l=27032264
23. JOURNAL OF INFORMATION LITERACY. (n.d.). Retrieved April 17 2021, from https://ojs.lboro.ac.uk/jil/
24. ABOUT THE JOURNAL/ journal of information literacy. (n.d.). Retrieved April 17 2021, from https://ojs.lboro.ac.uk/jil/about
25. SWEILEH (WM).Bibliometric analysis of peer-reviewed literature on climate change and human health with an emphasis on infections diseases. *Globalization and Health.* 16, 1; 2020; 44. https://doi.org/10.1186/s12992-020-00576-1
26. DONTHU(N)KUMAR(S)andPATTNAIK(D). Forty-five years of journal of business research: A bibliometric analysis. *Journal of Business Research.*109, 2020; 1-14. https://doi.org/10.1016/j.jbusres.2019.10.039
27. GAVIRIA-MARIN(M)MERIGO(JM) andPOPA(S). Twenty years of the journal of knowledge management: A bibliometric analysis. *Journal of Knowledge Management.* 22, 8; 2018; 1655-1687. https://doi.org/10.1108/JKM-10-2017-0497
28. ABDI, (A)…et al. Bibliometric analysis of ip&m journal (1980-2015). *Journal of Scientometric Research.*7, 1; 2018; 54-62. https://doi.org/10.5530/jscires.7.1.8
29. VOSVIEWER-Visualizing scientific landscapes. (n.d.) VOSviewer. Retrieved April 09 2021, from https://www.vosviewer.com//
30. DIMENSIONS. (n.d.). Retrieved April 07 2021, from https://app.dimensions.ai/discover/publication
31. SUBRAMANYAM(K). Bibliometric studies of research collaboration: A review. *Journal of Information Science*.6, 1; 1983;33-8.
32. VOSVIEWER-Visualizing scientific landscapes. (n.d.) VOSviewer. Retrieved April 15 2021, from https://www.vosviewer.com//
33. SHUKLA (R). Journal of information literacy: A bibliometric study (2007-2017). *Journal of Advancements in Library Science.* 7, 2; 2020; 98-108.
34. PANDA, (I)., MAHARANA, (B)., & CHHATAR, (D). (C). (2013). The Journal of Information Literacy: A Bibliometric Study. *International Journal of Scientific and Research Publications*, *3*(3).
35. VERMA(A)SONKAR(S)andGUPTA(V). A bibliometric study of the library philosophy and practice (E-journal) for the period 2005-2014. *Library Philosophy and Practice (e-journal).* 2015.https://digitalcommons.edu/libphilprac/1292