Bibliometric Analysis of the Role of Libraries in Achieving Sustainable Development Goals (SDGs) in International Scientific Publications 2015-2023

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Abstract

The role of libraries in supporting the achievement of Sustainable Development Goals (SDGs) has become increasingly important as awareness of sustainability and the importance of access to information grows. Bibliometric analysis of international scientific publications can provide an overview of the themes, contexts, and journals that most frequently publish articles related to the role of libraries in SDGs. Data collection was carried out using the Publish or Perish software and the Google Scholar database, and Boolean logic was used with the keywords "Library AND Sustainable Development Goals" and "Library AND Sustainable Development". The search yielded 42 journal articles related to the topic. The results showed that the number of publications on the role of libraries in SDGs fluctuated each year from 2015-2023, with the highest number of publications in 2017, totaling 8 articles. The journals that most frequently published articles on the topic were the International Journal of Library Science and The International Federation of Library Association and Institution Journal, with 4 articles each. The mapping of themes related to the topic using VosViewer was divided into 22 clusters, while the mapping of contexts was divided into 12 contexts related to the research topic. Based on the results of this study, the role of libraries in SDGs should be further optimized through international scientific journal article publications so that sustainable development goals can be achieved through the role of libraries.

Keywords

bibliometrics; google scholar; sustainable development goals (SDGs); vosviewer



I. Introduction

Sustainable Development Goals (SDGs) endorsed by the United Nations (UN) have been widely accepted as a framework to guide the development efforts of governments around the world. The Sustainable Development Goals (SDGs) address a variety of challenges, including poverty, health, education, gender equality, clean water and sanitation, cheap and clean energy, decent work and economic growth, and climate action, among others. Realizing SDGs involves collaboration and involvement from various sectors, including libraries. Chairman of the Malaysian Librarians Association, Dr. Nor Edzan Bt. Che Natsir, said; "The United Nations (UN) stated to The International Federation of Library Associations and Institutions (IFLA) an international body that oversees library services that Libraries have a role in several SDGs goals, namely improving the quality of education

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contained in Goal 4 (SDGs 4), peace, justice and strong institutions in the 16th Goal (SDGs 16); and partnerships to achieve Goal 17 (SDGs 17). With this, the library can support the achievement of the 2030 UN agenda."(Dr. Nor Edzan Bt. Che Natsir, 2022)

The role of the library in realizing the SDGs was also conveyed by(Ma & Ko, 2022)as an institution that provides access to information and academic needs, which contributes to the sustainable development of libraries, they must have the ability to provide the information needed. The research found that libraries have a role in implementing SDGs 4 through promotion to the general public so they can take part in utilizing library resources and services as SDGs supporting institutions. As a vital institution, libraries play an important role in sustainable development programs (IFLA, 2018). In supporting the realization of the SDGs point 4 program, the university library plays an important role, namely as an open information provider for academics. It is important for libraries to hold training programs for students and lecturers in order to improve the quality of lecturers and students, and to establish collaboration with other parties (Elvy & Heriyanto, 2021).

By providing access to quality information and knowledge, libraries can help people understand various issues related to SDGs. For example, through collections on the environment and sustainable development, libraries can help people understand the negative impacts that can be caused by human activities on the environment. In addition, libraries can also help people find the right solutions to overcome problems they face, such as reducing carbon emissions or improving waste management. Waste management system that is not in accordance with the technical standards is due to the system of waste management that hasnot functioned optimally and the lack of concern of residents in waste management is one of the causes of the system has not run well (Tobing, 2021). The waste was significantly influenced by the socio-demographic characteristics of the households such as gender, age, income and residency (Huho, 2020). In addition, the library can also act as an information and research center. Through his collection of literature and scientific publications, one of which is that libraries can assist researchers and academics in developing research and innovations that contribute to achieving the SDGs goals. The discussion on the SDGs also includes various types of scientific literature and publications, such as books, journals, scientific articles, research reports and teaching materials. This type of literature and scientific publications discuss various issues related to SDGs, such as environment, health, education, gender equality, as well as best practices and innovations in implementing SDGs. All types of scientific literature and publications contribute to increasing awareness and knowledge of the SDGs and efforts to achieve them at the local, national and global levels.

In this case, the researcher is interested in conducting a bibliometric analysis to find out how far the library has contributed to achieving the SDGs goals in the Publish Or Perish (PoP) database for the period 2015 – 2023. To be able to measure the involvement of articles in the advancement of knowledge, bibliometric analysis provides a precise and objective way, this is a tool that is often used to study evolution in the study of educational philosophy in the world of academia, in order to find research gaps and new things for further research.(R. Herdianto, N. Windyaningrum, B. Masruroh, 2021). The Research Questions or formulation of the problem in this study are, 1) what are the themes contained in international scientific publications related to the role of libraries in Sustainable Development Goals (SDGs), 2) what contexts are related to the role of libraries in Sustainable Development Goals (SDGs) in scientific publications from 2015-2023, 3) which journal published the most discussions regarding the role of libraries in the Sustainable Development Goals (SDGs). So, to answer these three questions, the use of bibliometric analysis with the Vos Viewer, Publish or Perish, Mendeley tools, as well as keyword searches using bolean logic AND are very effective and efficient.

The purpose of this research was to see how far the development trend is regarding the role of libraries in the SDGs in international scientific publications. In addition to knowing and understanding related research questions or the formulation of the problem, such as understanding what are the trending themes in international publications in 2015-2023, understanding the context that is relevant to the role of libraries in the SDGsscientific publications in 2015-2023. And the next goal is to understand and find out which journals issue the most discussions regarding the role of libraries in the SDGs from 2015 to 2023.

II. Review of Literature

Libraries play an important role in achieving sustainable development goals. Considering that the library is an organizational institution that plays a role in providing accurate and reliable information for users or the public. The Sustainable Development Goals themselves are designs aimed at global human welfare and involving many countries. The agenda is a sustainable development program, there are 17 goals with 169 measurable targets and have been agreed upon by 193 member countries (Nurhayati, 2017). Libraries in supporting SDGs by providing access to information, support for literacy and information and communication technology skills, and access to community spaces, some examples are the library as an information repository that supports the dissemination of information and research to assist decision making (Suhernik & Cahyani, 2017).

In this section, the results of previous research will be explained which can be used as a reference in this research topic. However, previous research discussing bibliometric analysis related to the topic of the role of libraries in the SDGs in international scientific publications is still very rarely carried out. Therefore, in this discussion the researcher includes previous studies that are appropriate for the use of analytical methods.

First, research by Yeny Rostiani and Evelyn Tjandra (2022) entitled Bibliometric Analysis of the Study of the Development of the Service Quality Method in the Google Scholar Database Using VosViewer: Study of Literature in 2016-2020. In this study, researchers mapped the development of research results on service quality methods that have been carried out by researchers, especially in Indonesia, which aims to gain a more complete understanding of service quality. This study uses a bibliometric analysis method, with Vosviewer tools to map data, and Publish or Perish uses the Google Scholar database to search and process data. The results of this study indicate that the use of this method is very effective in solving problem formulations or research questions (Rostiany & Tjandra, 2022a).

Second, research by Gustav Zurita. et al (2020) entitled A Blibliometric Overview of the Journal of Network and Computer Applications Between 1997 and 2019. In this study, data collection and interpretation were the most important parts of bibliometric analysis. Study data was collected from widely used repositories. Using the Publish or perish tools with the web of science database, and mapping the Journal of Network and Computer Application (JNCA) with the VosViewer software. The results of this study show that the first papers that developed the JNCA bibliometric analysis from 1997 to 2019 were 2,349 papers published and received a total of 36,611 citations (Gustavo Zurita, Amit K. Shukla, Jose A. Pino, Jose M. Merigo, Valeria Lobos-Ossandom, 2020).

III. Research Method

This research uses a quantitative descriptive method in the form of a literature review study used to analyze bibliometric data related to the role of libraries in the Sustainable Development Goals (SDGs) in international scientific publications in 2015-2023. (Sulistyawati et al., 2022) Quantitative descriptive method is a method that describes,

examines, and explains a phenomenon in the form of relevant data or numbers without intending to test the hypothesis of a data. Bibliometric analysis is a method that can be used to analyze trends in a scientific publication based on the characteristics of the bibliography, subject, author, and source.

Bibliometric analysis is a quantitative method used to analyze bibliographic data contained in journal articles. This analysis is generally used to find references to scientific articles cited in a journal article, mapping the journal's scientific fields, and to classify a scientific article that is appropriate to a research field. This method can be used in the fields of communication, sociology, humanities and other social groups(F. Effendy, V. Gaffar, R. Hurriyati, and H. Hendrayati, 2021).

Data collection was carried out using bibliometric tools such as Publish or Perish, VosViewer, and Mendeley, as well as applying Bolean logic to formulate search keywords. VosViewer is software for creating maps based on network data as well as for visualizing the mapping of these topics. VosViewer can be used to build a network of scientific publications, scientific journals, researchers, research organizations, countries, keywords or terms(Rostiany & Tjandra, 2022b). VosViewer provides three visualizations namely, Network visualization, overlay visualization, and density visualization. Although Vosviewer is used to analyze bibliometric networks, it can also be used to map themes, contexts, based on all types of network data(L. Hakim, 2020).

In carrying out this research, the researcher conducted a literature search from the Google Scholar database with two keywords "Library AND Sustainable Development" and "Library AND Sustainable Development Goals". After that, the researcher uses the Boolean Logic technique to combine these keywords and obtain related articles that are relevant to the research topic. The number of journal publications using two keywords is of course different, but this cannot be separated from the topic of discussion regarding the role of libraries in the Sustainable Development Goals (SDGs). In the keyword "Library AND Sustainable Development Goals" there are 14 article titles as shown in Figure 1.

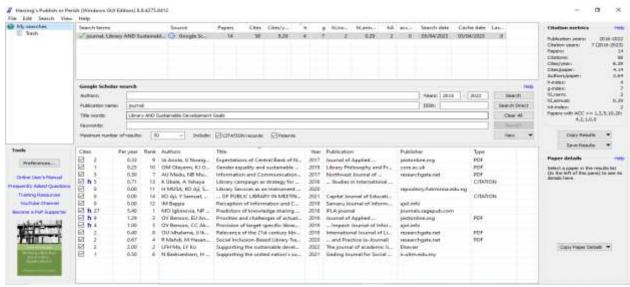


Figure 1. Publish or Perish Application

As for the second keyword, namely "Library AND Sustainable Development" there are 41 articles. Where the first keyword and the second keyword are related, the first keyword is part of the second keyword. This can be proven using Mendeley software. Journal results from the first keyword and the second keyword are stored in the form of a Reference Manager (RIS) then imported into Mendeley and find the results of the combination of the

two keywords, there are 42 journal articles regarding the role of libraries in the SDGs, as shown in Figure 2.

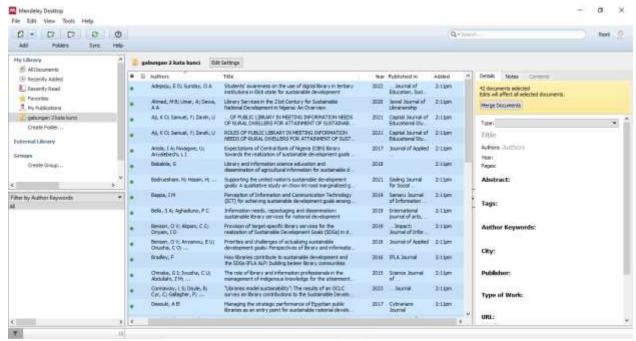


Figure 2. Mendeley Application

Then the data is analyzed using VosViewer to visualize collaboration networks between authors and institutions, as well as to analyze subject clusters that appear most often in scientific publications related to topics, so that it can be seen what themes are discussed in scientific publications on the topic of the role of libraries in the SDGs. After the data was collected, the researcher then processed the data in graphical form using Microsoft Excel to describe the number of scientific publications published annually, and made a chart to see how many journals issued or published related to the topic of the library's role in the SDGs.

Through the use of various bibliometric tools, the authors hope to provide a more comprehensive picture of the role of libraries in achieving the Sustainable Development Goals (SDGs) through international scientific publications in 2015-2023.

IV. Discussion

4.1 Number of International Library Research Publications in the SDGs in the 2015-2023 year Range

Research on the Publish or Persih software uses the Google Scholar database with two keywords, namely "Library AND Sustainable Development" and "Library AND Sustainable Development Goals in the last 9 years, from 2015 to 2023 found 41 international articles. Based on figure 1, the most published articles occurred in 2017 with 8 articles, while the least publication occurred in 2023 with 1 article. In 2015 there were 3 articles published, and in 2016 there was an increase of 5 articles. And experienced a drastic decline in 2018 as many as 4 article publications. In 2019 and 2020 the number of publications tends to be the same, and will decrease again in 2021 to 2023.

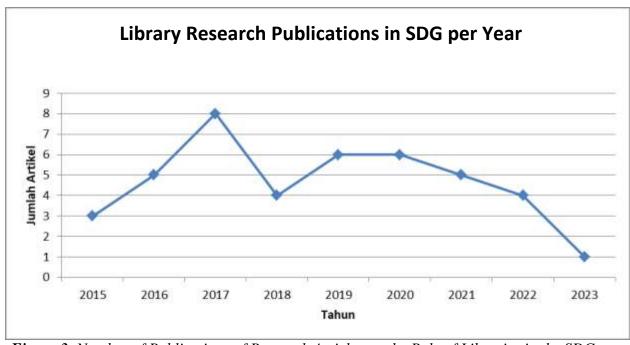


Figure 3. Number of Publications of Research Articles on the Role of Libraries in the SDGs per year

Based on the figure above, it can be seen that the number of international scientific publications as a result of research on the Role of Libraries in the SDGs published in international journals from 2015 to 2023 has generally experienced an increase and decrease that is not constant. In the graph presented in Figure 1, you can see that there was a drastic increase in 8 articles in 2017, and in the most recent year, 2023, the number of scientific publications decreased by 1 international scientific article.

4.2 Themes about the Role of Libraries in SDGs in Scientific Publications from 2015-2023

A search on the Publish or Perish software with the Google Scholar database on international journal articles uses two keywords that utilize bolean logic in searching for these keywords. Between 2015 and 2023, there are 42 international journals that have been published regarding the topic of the role of libraries in the SDGs. The following are 42 international journal article titles related to the topic of the role of libraries in the SDGs, along with their themes or ideas:

Table 1. International Journal Article Titles Related to the Role of Libraries in SDGs

No	Article Title	Year	Theme/ Idea
1	Library and education: Panacea for sustainable	2015	Libraries and
	development in Nigeria(Tyonum & Ezeogu, 2015)		education
2	Sustainable Development and Fund Generation—A Study	2015	Library Professional
	among Library Professionals Working in Select Higher		
	Education Institutions in and around		
	Chennai(Gopalakrishnan & Kalpana, 2015)		
3	The role of library and information professionals in the	2015	Library Professional
	management of indigenous knowledge for the attainment		
	of sustainable entrepreneurial development		
4	How libraries contribute to sustainable development and	2016	Library Contribution

	the SDGs-IFLA ALP: building angry library communities		
5	Priorities and challenges of actualizing sustainable development goals: Perspectives of library and information professionals in Owerri, Nigeria	2016	Library Professional
6	Curricular Implications of Sustainable Development for Library and Information Science Education in Nigeria(Nwosu, 2016)	2016	Curricular Implications
7	Addressing Contending Issues and Embracing Emerging Trends in Library and Information Science Education for Sustainable Development in Nigeria(Igwe et al., 2016)	2016	Libraries and Education
8	Library campaign as strategy for actualizing the sustainable development goals in Nigeria: the roles of librarians(Ubale & Yahaya, 2016)	2016	Library Campaign
9	Information and Communication Technology (ICT) and Library and Information Science (LIS) for Sustainable Development Goals	2017	Information and Communication Technology, Library and Information Science
10	Expectations of the Central Bank of Nigeria (CBN) library towards the realization of sustainable development goals (SDGs) in Nigeria	2017	Central Bank Library
11	Managing the strategic performance of Egyptian public libraries as an entry point for sustainable national development: The Greater Cairo Library as an example	2017	Library Strategic Performance
12	Library and information services targeting poverty alleviation for sustainable human development	2017	Information and Communication Technology, Library and Information Science
13	Libraries are affordable and accessible institutions for sustainable development of developing countries: A satisfaction survey of libraries at college of nursing, Adesh	2017	Library Contribution
14	Role of library and information science professionals towards sustainable development in Nigeria(Obaseki & Maiwada, 2017)	2017	Library Contribution
15	Discussion on the Sustainable Development of the Spatial 24 Hours Self-service Library(Xiaowei, 2017)	2017	Layout of Library Services
16	And Learning of Library and Information Science Courses for Life Long Learning and Sustainable Development in North-West	2017	Library Science Course
17	Library and information science education and dissemination of agricultural information for sustainable development in Nigeria(Babalola, 2018)	2018	Agricultural Library and Information Sciences
18	Research output and innovation in a school library for sustainable development in the Federal University of Technology Minna, Nigeria(Saka, 2018)	2018	Library Contribution
19	Predictors of knowledge sharing behavior on Sustainable	2018	Behavior

	Development Goals among library personnel in Nigeria		
20	Relevance of the 21st century library in the actualization of sustainable development goals (SDGs): A case study	2018	Library Relevance
21	Library and information science and sustainable development: a structured literature review(Meschede & Henkel, 2019)	2019	Information and Communication Technology, Library and Information Science
22	Perception of Information and Communication Technology (ICT) for achieving sustainable development goals among library staff in federal polytechnic, Mubi in	2019	Information and Communication Technology, Library and Information Science
23	Information needs, repackaging and dissemination: sustainable library services for national development(Bello & Aghadiuno, 2019)	2019	Information Needs
24	Gender equality and sustainable development goals: The role of the library and information professionals in Nigeria	2019	Gender equality
25	Provision of target-specific library services for the realization of Sustainable Development Goals (SDGs) in developing countries	2019	Library Professional
26	Library and information services targeting poverty alleviation for sustainable human development	2019	Library Professional
27	Social Inclusion-Based Library Transformation: a National Library of Indonesia's Role to Support Sustainable Development Goals (SDGs)	2020	Library Transformation based on Social Inclusion
28	Library Services as an Instrument for Attaining Sustainable Development Goals in Early Childhood Care in Nigeria	2020	Library Professional
29	of ICT IN Teaching Information Organization in Nigerian Library Schools for Sustainable Development : a Comparative Study	2020	Information and Communication Technology, Library and Information Science
30	Library Services in the 21st Century for Sustainable National Development in Nigeria: An Overview(Ahmed et al., 2020)	2020	Library Professional
31	Funding and ICT use as determinants of sustainable library development(Olas, 2020)	2020	Information and Communication Technology, Library and Information Science
32	Exploring library user perception on the link between knowledge economy and sustainable development	2020	Knowledge economy
33	Supporting the united nation's sustainable development goals: A qualitative study on chow kit road marginalized group mini library makeover	2021	Mini library
34	Trends in Academic Library Services: Roadmap to	2021	Library Professional

	Education for Sustainable Development in Nigeria		
35	of Public Library in Meeting Information Needs of Rural Dwellers for Attainment of Sustainable Development Goals	2021	Information Needs
36	A Study on the Development of Sustainable Operating Direction of Library after Corona: Focusing on the Implementation Performance and Implementation	2021	Information Needs
37	Roles of Public Library in Meeting Information Needs of Rural Dwellers for Attainment of Sustainable Development Goals	2021	Information Needs
38	Public library system in Nigeria: towards the creation of social capital for sustainable development in the knowledge society	2022	Information and Communication Technology, Library and Information Science
39	Students' awareness on the use of digital libraries in tertiary institutions in Ekiti state for sustainable development(Adepoju & Sunday, 2022)	2022	Digital library
40	Green Libraries: Sustainable Development(Lokhande, 2022)	2022	Green library
41	Supporting the sustainable development goals: The role of the Chinese University of Hong Kong Library	2022	Information Needs
42	"Libraries model sustainability": The results of an OCLC survey on library contributions to the Sustainable Development Goals1(Ahmed et al., 2020)	2023	Information Needs

Based on table 1 above, the authors mapped the topics of the international journal article titles into the VosViewer software. There are 20 themes or ideas related to the role of libraries in the Sustainable Development Goals (SDGs), including; 1) library and education (library and education), 2) Library Professionals, 3) library contribution, 4) curricular implications, 5) library campaigns, 6) Information and Communication Technology, library and information science, 7) central bank as supporting library, 8) library strategic performance, 9) library service layout, 10) library science courses, 11) library science and agricultural information, 12) behavior, 13) library relevance, 14) information needs, 15) gender equality,

Of the 20 themes, the theme of the most research on international scientific publications is library professionals. There are 7 researchers or journal article titles that discuss library professional themes. It can be concluded that the professional theme of libraries in supporting the achievement of sustainable development goals has been a trend discussed in the last 9 years, from 2015 to 2023. Then the theme of Information and Communication Technology (libraries and library science) is also frequently discussed in international scientific article publications. There are 6 journal article titles that discuss the Information and Communication Technology theme in research. An interesting but rarely discussed theme is gender equality. The title of the journal article that carries this theme is Gender equality and sustainable development goals: The role of the library and information professionals in Nigeria. The discussion in the journal discusses how gender equality can influence achieving sustainable development goals. Then on the theme of information needs there are 5 article titles that discuss this theme. The theme of library and education is 2 article titles. And other themes such as curricular implications, library campaigns, central banking, library strategic

performance, library service layout, library science courses, library science and agricultural information, behavior (behavior), library relevance, library transformation based on social inclusion, knowledge economy, mini library,

Based on the theme mapping that the researcher has described through the table, the following is a distribution of contexts or topics mapped using the VosViewer software regarding the role of libraries in the SDGs:

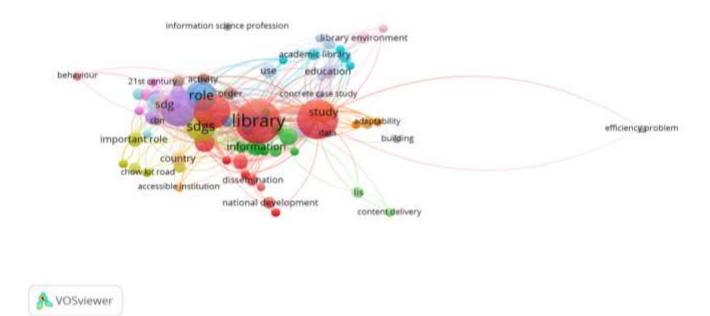


Figure 4. Mapping Data on Topics and Themes of International Journal Articles through the VosViewer Software

Based on the description of data from the VosViewer software above, there are 22 clusters on topics or themes in international journals regarding the role of libraries in the Sustainable Development Goals (SDGs). The most obvious one based on the picture is Library and Study, which means that the most dominant or most often discussed on the topic of the role of libraries in the Sustainable Development Goals (SDGs) are libraries and studies. According to(KBBI, 2020)Clusters (clusters) have the meaning as several objects or things that are grouped into one. In bibliometric analysis, clusters are a grouping of topics or themes in scientific articles that are interconnected between one part and another. The ones in red are the first clusters, the most dominant color, which means the discussion that has been discussed the most based on keywords.

4.3 Context Regarding the Role of Libraries in the SDGs in 2015-2023

Context is a condition when a situation occurs. The context itself means referring to the situation or environment that surrounds a particular event or object. In research, context can refer to the social, political, cultural, or economic environment that influences the topic or object being studied (Melati & Pranowo, 2022). In essence, the context is a place or situation where the topic occurs. The context on the role of libraries in the Sustainable Development Goals (SDGs) includes various aspects, as shown in the figure. 4 following:

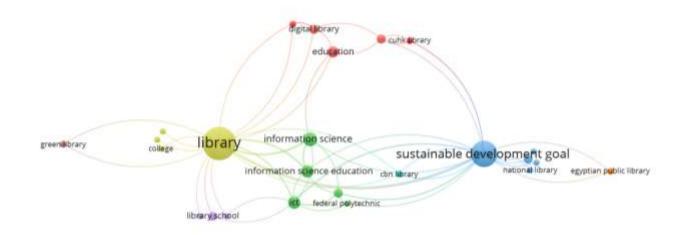




Figure 5. Context Mapping on Network Visualization Images in VosViewer Software

In the picture there are several contextual aspects of the role of libraries in the Sustainable Development Goals (SDGs), including the Sustainable Development Goals and Library which consists of the national library, Egyptian publick library, central bank of Nigeria library, federal polytechnic, information science education, information science, education, digital library, chuck library, school library, college, and green library. In the VosViewer mapping above, it can be explained that the context of the library's role includes the use of information technology to increase accessibility of information related to the SDGs, training and capacity building of library staff in understanding and integrating the concept of SDGs in library services, as well as collaboration with other institutions and organizations to support the achievement of goals SDGs together.

4.4 Journal with the Most Issues of Articles Related to the Role of Libraries in the SDGs from 2015-2023

The journals that publish the most and the publishers that publish the most articles related to the application of libraries in the Sustainable Development Goals that have been identified through bibliometric analysis using the Publish or Perish, VosViewer, and Mendeley tools are shown in the explanation in the following figure:

Library Research Publisher in SDG Year 2015-2023

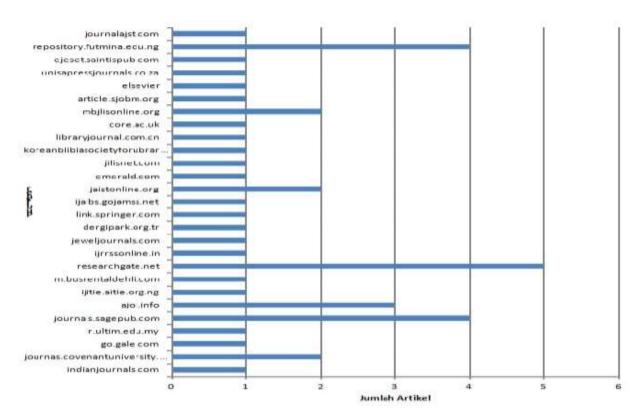


Figure 6. Graph of Publishers who Publish Journals Regarding the Role of Libraries in the SDGs

Based on Figure 5 it can be seen that there are 27 publishers that publish to 42 international journals regarding the role of libraries in the Sustainable Development Goals (SDGs). Among the most published is researchgate.net, which published 5 journal articles. Then the most published after 5 journal articles are 4 journal articles from two different publishers, namely repository.futmina.edu.ng and journals.sagepub.com. publisher ajol.info published 3 journal articles. And there are three publishers who publish 2 journal articles each. The remaining 20 publishers publish 1 international journal article each on the topic of the role of libraries in the Sustainable Development Goals (SDGs).

Publishers that publish the most journal articles cannot be sure that the names of the journals they publish are also in the order of the most journals that publish articles related to the role of libraries in the Sustainable Development Goals (SDGs). This is proven in the following graphic image:

Name of Journal Publication

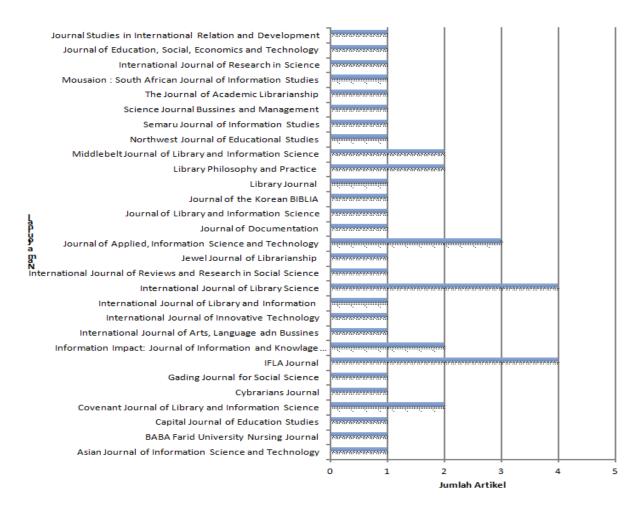


Figure 7. Publication Graph regarding the Role of Libraries in the SDGs

Based on the graphic image, after carrying out a bibliometric analysis and then processing the data using Microsoft Ecxel software, it was found that the International Journal of Library Science and The International Federation of Library Association and Institution Journal (IFLA) were the journals that published the most articles related to the role of libraries in SDGs. In the period from 2015 to 2023, the journal has published 4 journal articles each regarding the role of libraries in supporting the achievement of sustainable development. This shows that the international journal has a significant contribution in advancing research related to the role of libraries in supporting sustainable development goals. The Journal of Applied Information Science and Technology published 3 journal articles.

Meanwhile, other journals in this field are still relatively small, with fewer articles compared to these journals. However, even though the number of journals related to this topic is still small, there are a number that publish quality and relevant articles on the topic of the role of libraries in the SDGs, so that they can become important references in conducting further research.

V. Conclusion

In this study, the findings from the analysis of literature review studies can be concluded that the development of the role of libraries in the SDGs in international scientific publications in the 2015-2023 period is still experiencing declines and increases that are not static, so it cannot be said that research on this topic is increasingly widespread. However, there are many areas of scope related to the role of libraries in the SDGs. This shows that libraries play an important and integrated role in achieving sustainable development goals. The limitation of this research is that the data analyzed using the Publish or Perish tools with the Google Scholar database still shows that there is no regular selection of the quality of the data used as a research source. Future research can conduct similar research from reputable databases to see developments that are more up to date regarding the role of libraries in the SDGs. Considering that in the long period of time from 2015 to 2023, very few international scientific publications related to the topic have been carried out. In addition, studies that examine the role of libraries in the SDGs must also be carried out, so that readers know the benefits that can be obtained regarding libraries which play an important role in helping optimize sustainable development goals. This research could become a theoretical trend for future research. Considering that in the long period of time from 2015 to 2023, very few international scientific publications related to the topic have been carried out. In addition, studies that examine the role of libraries in the SDGs must also be carried out, so that readers know the benefits that can be obtained regarding libraries which play an important role in helping optimize sustainable development goals. This research could become a theoretical trend for future research. Considering that in the short period of time from 2015 to 2023, very few international scientific publications related to the topic have been carried out. In addition, studies that examine the role of libraries in the SDGs must also be carried out, so that readers know the benefits that can be obtained regarding libraries which play an important role in helping optimize sustainable development goals. This research could become a theoretical trend for future research. So that readers know the benefits that can be obtained regarding libraries that play an important role in helping optimize sustainable development goals. This research could become a theoretical trend for future research. so that readers know the benefits that can be obtained regarding libraries that play an important role in helping optimize sustainable development goals. This research could become a theoretical trend for future research.

References

- Adepoju, E. O., & Sunday, O. A. (2022). Students' awareness on the use of digital library in tertiary institutions in Ekiti state for sustainable development. ... *Journal of Education, Social* http://ejeset.saintispub.com/ejeset/article/view/51
- Ahmed, M. B., Umar, A., & Dewa, A. A. (2020). Library Services in the 21st Century for Sustainable National Development in Nigeria: An Overview. In *Jewel Journal of Librarianship*. jeweljournals.com. https://www.jeweljournals.com/admin/published/2700001175.pdf
- Babalola, G. (2018). Library and information science education and dissemination of agricultural information for sustainable development in Nigeria. repository.futminna.edu.ng.
 - http://repository.futminna.edu.ng:8080/jspui/handle/123456789/5644
- Bello, S. A., & Aghadiuno, P. C. (2019). Information needs, repackaging and dissemination: sustainable library services for national development. In *International journal of arts, languages and business*

- Dr. Nor Edzan Bt. Che Natsir. (2022). *Peran Perpustakaan Akademik Untuk Mencapai Sustainable Development Goals*. Perpustakaan UI. https://www.ui.ac.id/pustakawan-uidan-dunia-jalankan-peran-perpustakaan-akademik-untuk-capai-sustainable-development-goals/
- Elvy, E., & Heriyanto, H. (2021). Peran Perpustakaan Perguruan Tinggi Dalam Mendukung Implementasi Sustainable Development Goal 4. *Baca: Jurnal Dokumentasi Dan Informasi*, 42(1), 153. https://doi.org/10.14203/j.baca.v42i1.732
- F. Effendy, V. Gaffar, R. Hurriyati, and H. Hendrayati. (2021). Penggunaan Pembayaran Seluler Dengan VosviewerNo Title. *J. Interkom*, *16*, *n*.
- Gopalakrishnan, S., & Kalpana, T. M. (2015). Sustainable Development and Fund Generation—A Study among Library Professionals Working in Select Higher Education Institutions in and around Chennai. In ... Journal of Research in Science. researchgate.net. https://www.researchgate.net/profile/Kalpana-Tm/publication/309092332_Sustainable_Development_and_Fund_Generation-A_Study_among_Library_Professionals_Working_in_Select_Higher_Education_Instit utions_in_and_around_Chennai/links/5a69af53a6fdccf88495a1d3/Sust
- Gustavo Zurita, Amit K. Shukla, Jose A. Pino, Jose M. Merigo, Valeria Lobos-Ossandom, P. K. M. (2020). A bibliometric overview of the Journal of Network and Computer Applications between 1997 and 2019. *Journal of Network and Computer Applications*, 165. https://doi.org/10.1016/j.jnca.2020.102695
- Huho, J.M., Kosonei, R.C., and Musyimi, P.K. (2020). Sociodemographic Determinants of Households' Food Waste in Garissa Sub County, Kenya. Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Vol 3 (2): 932-946.
- IFLA. (2018). *Libraries and Implementation of the UN 2030 Agenda*. IFLA Journal. https://www.ifla.org/wp-content/uploads/2019/05/assets/hq/topics/libraries-development/documents/libraries-un-2030-agenda-toolkit-pdf
- Igwe, K. N., Musa, S. S., & Odenigbo, P. (2016). Addressing Contending Issues and Embracing Emerging Trends in Library and Information Science Education for Sustainable Development in Nigeria. ... *JOURNAL OF* https://journals.covenantuniversity.edu.ng/archive/index.php/cjlis/article/view/958
- KBBI. (2020). *Kamus Besar Bahasa Indonesia "Kluster" atau "Klaster"?* Kompas.Id. https://www.kompas.id/baca/dikbud/2020/09/12/kluster-atau-klaster
- L. Hakim. (2020). Analisis Bibliometrik penelitian inkubator bisnis pada publikasi ilmiah terindeks Scopus. *Procur. J. Ilm. Manaj*, 8, *no*.
- Lokhande, R. S. (2022). Green Library: Sustainable Development. *International Journal of Reviews and Research in ...*. https://ijrrssonline.in/AbstractView.aspx?PID=2022-10-3-4
- Ma, L. F. H., & Ko, L. Y. (2022). Supporting the sustainable development goals: The role of the Chinese University of Hong Kong Library. *The Journal of Academic Librarianship*. https://www.sciencedirect.com/science/article/pii/S0099133322000787
- Melati, F. V., & Pranowo, P. (2022). Analisis Konteks Wacana Dalam Cerpen "Kuli Kontrak" Karya Mochtar Lubis. *SeBaSa*, 5(1), 1–10. https://doi.org/10.29408/sbs.v5i1.4725
- Meschede, C., & Henkel, M. (2019). Library and information science and sustainable development: a structured literature review. *Journal of Documentation*. https://doi.org/10.1108/JD-02-2019-0021
- Nurhayati. (2017). Laporan Pengabdian Kepada Masyarakat Luar Negeri Sustainable Development Goals. *Program Kerja Sama Kbri Dan Iain Lhokseumawe Pengabdian Kepada Masyarakat*, 0–8.

- Nwosu, C. C. (2016). Curricular Implications of Sustainable Development for Library and Information Science Education in Nigeria. In *Journal of Library and Information Sciences*. jlisnet.com. http://jlisnet.com/journals/jlis/Vol_4_No_2_December_2016/3.pdf
- Obaseki, T. I., & Maiwada, U. (2017). Role of library and information science professionals towards sustainable development in Nigeria. In *Information Impact: Journal of Information and* ajol.info. https://www.ajol.info/index.php/iijikm/article/view/167189/156625
- Ola, A. C. (2020). Funding and ICT use as determinants of sustainable library development. *Covenant Journal of Library and* https://journals.covenantuniversity.edu.ng/archive/index.php/cjlis/article/view/2144
- R. Herdianto, N. Windyaningrum, B. Masruroh, and M. A. S. (2021). Filsafat Pendidikan dan Perkembangannya: Kajian Bibliometrik berdasarkan Database Scopus. *Belantika Pendidik*, 4, no. 1.
- Rostiany, Y., & Tjandra, E. (2022a). Analisis Bibliometrik Studi Perkembangan Metode Service Quality pada Database Google Scholar Menggunakan Vosviewer (Studi Literatur Tahun 2016 2020). In *Smatika Jurnal* (Vol. 12, Issue 01, pp. 85–93). https://doi.org/10.32664/smatika.v12i01.677
- Rostiany, Y., & Tjandra, E. (2022b). Analisis Bibliometrik Studi Perkembangan Metode Service Quality pada Database Google Scholar Menggunakan Vosviewer (Studi Literatur Tahun 2016 2020). *Smatika Jurnal*, 12(01), 85–93. https://doi.org/10.32664/smatika.v12i01.677
- Saka, K. A. (2018). Research output and innovation in a library school for sustainable development in the Federal University of Technology Minna, Nigeria. repository.futminna.edu.ng. http://repository.futminna.edu.ng:8080/xmlui/handle/123456789/7503
- Suhernik, & Cahyani, I. R. (2017). Mewujudkan Airlangga University Library Sustainable Development Goals (SDGs). *Jurnal Perpustakaan Universitas Airlangga*, 10(2), 83–93.
- Sulistyawati, W., Wahyudi, & Trinuryono, S. (2022). Analisis (Deskriptif Kuantitatif) Motivasi Belajar Siswa Dengan Model Blended Learning Di Masa Pandemi Covid19. *Kadikma*, *13*, *No.* 1, 68–73.
- Tobing, R.O.M., Nasution, A.D., and Lubis, A.M. (2021). Analysis of Slum Management Plan in East Area Covering Medan Area and Medan Denai District. Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Vol 4 (3): 4363-4371.
- Tyonum, N. M., & Ezeogu, P. A. (2015). Library and education: Panacea for sustainable development in Nigeria. In *Asian Journal of Information Science and Technology*.
- Ubale, K., & Yahaya, A. (2016). Library campaign as strategy for actualizing the sustainable development goals in Nigeria: the roles of librarians. In ... Studies in International Relation and Development.
- Xiaowei, C. (2017). Discussion on the Sustainable Development of the Spatial 24 Hours Selfservice Library. *Libraly Journal*. http://www.libraryjournal.com.cn/EN/abstract/abstract1192.shtml