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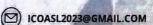














ADVANCING ASIAN SPECIAL LIBRARIES TOWARDS THE FIFTH INDUSTRIAL REVOLUTION

Proceedings of the 8th International Conference of Asian Special Libraries (ICoASL 2023)

Stephen B. Alayon, Willian S. A. Frias, Rosally D. Funclara (Editors)

22-24 February 2023 University of San Carlos - Talamban Campus Cebu City, Philippines







Organized by the Special Libraries Association – Asian Community (SLA-Asia) in collaboration with the Association of Special Libraries of the Philippines (ASLP) and Cebu Librarians Association, Inc. (CLAI)

Advancing Asian Special Libraries Towards the Fifth Industrial Revolution: Proceedings of the 8th International Conference of Asian Special Libraries (ICoASL 2023)

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FOREWORD

This publication is a product of the 8th International Conference of Asian Special Libraries held on 22-24 February 2023 at the University of San Carlos, Cebu City, Philippines. The conference was organized by the Special Libraries Association - Asian Community (SLA-Asia) under the leadership of Mr. Joseph M. Yap. This is in collaboration with the Association of Special Libraries of the Philippines (ASLP) chaired by Mr. Bryan Boy C. Cortez and co-chaired by Ms. Maria Teresa M. Cabance, and the Cebu Librarians Association. Inc. (CLAI), chaired by Ms. Marciana Mariñas. This year's conference theme is "Advancing Asian Special Libraries Towards the Fifth Industrial Revolution". The theme is timely as we enter the next period of advanced technology while transitioning to the post-pandemic era. Due to the fast pace of technological innovation, libraries must quickly adopt and integrate these technologies, particularly the frontrunners of the fifth industrial revolution (IR): artificial intelligence (AI) and robots. Libraries need to keep up with changing users' needs, and stay astride with the current trends in the field. It is important to note that the rapid adoption of technologies in libraries has also led to a change in the mindsets of librarians, library services offered, and the technological competencies required of a librarian and information professionals. The conference included the following topics supporting the theme: (1) Hybrid and HyFlex Library Services, (2) Digital Reference Services, (3) Librarian 5.0, (4) Automated Reference Service, (5) Virtual Space in Physical Library, (6) Special Libraries as a Beacon of Digital Transformation, (7) AI in Libraries, (8 Digital Libraries, (9) Smart Libraries, (10) Robots and Librarians, (11) Managing Libraries in IR 5.0, (12) Roles of Library Associations in the Advancement of the Profession, (13) Web 5.0: Blockchain-Powered Digital Network, (14) Media and Information Literacy Challenges in Information Practice, (15) Pedagogical Approaches in Digital and AI Literacies, (16) LIS Theories Related to the Theme, and, (17) Curriculum and Instruction in LIS. Out of 50 papers submitted to the ICoASL 2023 Scientific Committee, 30 papers from seven (7) Asian countries were selected and compiled in this publication, including the four (4) poster abstracts. This compilation will not be possible without the careful selection, review, and guidance of the ICoASL 2023 Scientific Committee. We would like also to acknowledge SLA - Asian Chapter, ASLP, CLAI, University of San Carlos, various partner organizations and sponsors for the support, the researchers who heeded the call for papers and posters, and most especially, the participants for attending the Conference.

Disclaimer:

The opinions expressed in this publication are those of the respective authors and do not necessarily reflect those of SLA, SLA-Asia, ASLP, CLAI, the publisher, and the editors.



Bibliometric analysis: Lecturers' scientific publications at Scopus

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Abstract

The era of society 5.0 requires librarians to have the skills to conduct research and bibliometric process data and help advise their universities on policy making. This study aims to provide a bibliometric analysis of the scientific publications of UIN Sunan Ampel Surabaya-Indonesia lecturers, published in the Scopus database, to detect the most relevant author, affiliations, and sources, annual scientific production, average citation per year, and trending topic. The Scopus database was used to extract the publications, and the Bibliometrix package in R Studio was used to represent the data analyzed. 365 data are downloaded from Scopus with a specific search in the affiliate column "UIN Sunan Ampel Surabaya". Rahmawati P is the most relevant author, with 33 publications. The most relevant affiliation is Airlangga University. The most relevant source is the Journal of Indonesia Islam, which has 61 publications. The annual scientific production from 2007 to 2021 fluctuates. The publication accomplished the highest production in 2019, with 90 publications, then in 2020, it decreased by 33.2%, and in 2021, it decreased by 29.1%. The average article cited each year fluctuates too. The citations of scientific publications performed the highest number in 2018, then in 2019, it decreased by 1%, and in 2020 it decreased again by 0.5%. Meanwhile, in 2021, it increased by 0.2%. The trend topic at UIN Sunan Ampel Surabaya is "Safe Concentration" with 13 publications in 2019, and "Indonesia", with 11 publications from 2018 to 2021.

Keywords: Bibliometric; publications; lecturer; UIN Sunan Ampel

Surabaya: Scopus

Introduction

Libraries should embrace the changes in the era of society 5.0 while maintaining their role in achieving sustainable development goals (Noh. 2022). The era of society 5.0 requires librarians to understand user needs and provide access to relevant and targeted information needs (Role of Libraries in Information Gaining in Society 5.0, n.d.). Librarians as information-resource experts who collect, analyze, evaluate, package, and disseminate information to facilitate accurate decision-making in universities. This is accomplished through developing, deploying and managing information resources and services (Semertzaki, 2011). They are in charge of creating environments that facilitate search and discovery and generating knowledge that



improves productivity and collaboration throughout the universities, such as having bibliometric analysis skills to see future research trends (Gwyer, 2015).

Librarians need to have the skills to conduct research, bibliometric process data and help provide advice for policy making to their universities. Bibliometrics is an information and library science discipline that combines mathematics and statistics to determine publications and communication patterns in the distribution of information (Glänzel, n.d.). The data obtained through bibliometric analysis become a scientific basis for making policies to evaluate collections and library services, evaluating the suitability of the contribution of researcher publications to universities' goals, as well as the performance of researchers individually and the overall research performance of universities (*The Role of Bibliometric Analysis in the Research of Library Science and Universities - Universitas Indonesia*, n.d.). Research is an effort to solve problems that exist in society (Sudaryono, 2019). The publication is needed to disseminate information related to research results (Thom, 2007).

Scientific research and publications go hand in hand following the Law of the Republic of Indonesia number 11 of 2019, article 21 concerning the national system of science and technology, which states that research and development results must be published and disseminated by human resources in science and technology. Publications are carried out by human resources in college, one of which is a lecturer. Based on The Law of Republic Indonesia no. 11 of 2019 about the National System of Science and Technology, it is stated that lecturers must have at least one scientific work that has been published in an international standard scientific journal, and professors must have at least 2 (two) scientific works that have been published in an international scientific journal.

Research and publications need to be carried out intensively to improve the image of themselves and higher education institutions in assessing world-class universities. The quality of research based on international standards is the focus of UIN Sunan Ampel at this time because research is an indicator of the progress of science in higher education. UIN Sunan Ampel Surabaya is one of the State Islamic Religious Colleges under the auspices of the Indonesian Republic Ministry of Religious Affairs. UIN Sunan Ampel Surabaya commits to becoming a "world-class university" (WCU). According to Quacquarelli Symonds (QS) at https://edukasi.kompas.com, a research institute that engaged in the college, states that to become a world-class university, it must meet international standard criteria such as quality of research, graduate work, quality of teaching, and infrastructure.

Research quality is one of WCU's criteria which can be seen in the publication indexation database, namely Scopus. Scopus is a database of abstract indexation, citations, and *peer-reviewed literature* under Elsevier. Elsevier is an international scientific publishing company established in 1880 and originated in Amsterdam, Netherlands. The Scopus database was launched in 2004 and included nearly 36,377 titles from approximately 11,678 publishers, and 34,346 are *peer-reviewed journals*. Scopus can be accessed at: https://scopus.com. Scopus covers the study of social sciences, humanities, physics, health sciences, and many others. Scopus contains reference sources such as books, journals, proceedings, and reviews. All journals included in the Scopus database are reviewed with high-quality objectivity based on *peer review*. The database on Scopus also includes patent data from research worldwide (Shkulipa, n.d.)

Abdul Rahman Saleh previously conducted research on bibliometric analysis using the Scopus database regarding a bibliometric study of the authorship of IPB lecturers in Scopus-indexed international scientific journals until 2016. The



application of Lotka's law was used to determine the productivity of writers and found patterns of authorship using Lotka's law, 64.39% of writers produce one KTI, and 0.88% produce 10 KTI. IPB lecturers' level of collaboration was 0.96, with a collaboration index of 4.5 (Saleh, 2017). Another research was conducted by Abeer Al-Khoury et al. regarding bibliometric analysis of the history and trends of intellectual capital (IC) using the Scopus database from 1965 to 2020. There were 638 scientific publications related to intellectual capital, then analyzed using VOSviewer by presenting data on journals, authors, countries, agencies, and author keywords (Al-Khoury et al., 2022).

Based on previous research, it is difficult to find research in Indonesia that analyzes using the Bibliometrix package in R Studio, especially for specific topics related to lecturers' publications at UIN Sunan Ampel Surabaya using the Scopus database. This is an opportunity for librarians as information resource experts who collect and analyze library resources to help evaluate the development of lecturers' scientific publications using the Scopus database at UIN Sunan Ampel Surabaya.

Purpose

- 1) Find out the most relevant author, which means the most active lecture in wraing scientific publications at Scopus.
- 2) Find out the most relevant affiliations universities that collaborate with UN Sunan Ampel Surabaya.
- 3) Find out the most relevant sources that often publish scientific publications of UN Sunan Ampel Surabaya lecturers.
- 4) Find out the annual scientific production of UIN Sunan Ampel Surabeya from 2007 to 2021
- 5) Find out the average citations per year of scientific publications UN Suran Ampel Surabaya lecturers from 2007 to 2021
- 6) Find out the trend of research topics and scientific publications among lecturers at UIN Sunan Ampel Surabaya.

Methodology

This descriptive quantitative research analyzes the development of scientific publications of UIN Sunan Ampel Surabaya lecturers indexed by SCOPUS. The data is downloaded with a specific search in the affiliate column "UIN Sunan Ampel Surabaya" in the SCOPUS search menu. The data was taken from Scopus from 2007 to 2021, without any restrictions, with consideration to find out the activities of scientific publications from all lecturers of UIN Sunan Ampel Surabaya-Indonesia indexed by SCOPUS. There are 365 pieces of data, including all types of documents, such as articles, proceedings, and journals. The obtained data will be analyzed using the bibliometric software R Studio software package. Several studies have revealed the important role of the Bibliometrix package in R Studio in a wider scientific field. Li and Yan studied and mapped using R and its packages in articles at the Public Library of Science (PLoS) (Li & Yan, 2018). Furthermore, the Bibliometrix package in R Studio can be used for Windows and Linux operating systems, with a graphical user interface (RStudio), making it friendly for beginners or expert users.

The data is processed using the Bibliometrix package in R Studio with the following address: https://www.bibliometrix.org. The Bibliometrix package in R



Studio can analyze and visualize bibliometrics and scientometrics in quantitative research from the Web of Science and Scopus databases. The Bibliometrix package in R Studio has advantages due to powerful and effective statistical algorithms, access to high-quality numerical routines, and the ability to visualize integrated data for scientific computing (Aria & Cuccurullo, 2017). The Bibliometrix package in R Studio focuses on data visualization and the correctness and statistical completeness of results (Dervis, 2019).

The first step is to install the latest version 1,442, of R Studio on a laptop with the Windows 10 operating system. Second, researchers create the Bibliometrix package in R Studio, in which a Biblioshiny serves to analyze and map bibliographic data. Researchers use bibliometrix functions to create descriptive data and citation networks. Researchers use the readfile and convert2df functions that are already available on Bibliometrix. The readfile function loads and converts text data to UTF-8 format, and the convert2df function extracts and creates a data frame corresponding to the file exported from the Scopus database. The biblioAnalysis function generates descriptive quantitative data from the bibliographic data.

Findings

Based on observations of 365 scientific publications produced by UIN Sunan Ampel Surabaya lecturers from 2007 to 2021 in SCOPUS. The data is processed using the Bibliometrix package in R Studio to show the matrix and visualize the most relevant authors, affiliations, and sources, annual scientific production, average citation per year, trending topics, and subtopic thematic maps.

Most Relevant Author

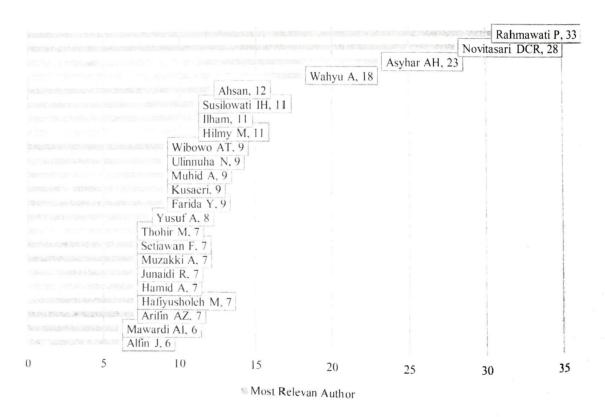


Figure 1. Most Relevant Authors



Figure 1. conveys that the lecturer who is the most relevant author and active in producing scientific publications from 2007 to 2021 is Rahmawati P, totaling 33 publications. The second category is Novitasari DCR, with 28 publications. The third place is Asyhar AH, with 23 publications. There are Wahyu A with 18 publications and Ahsan A with 12 publications. 11 publications are the work of Hilmy M, Ilham, and Susilowati IH. There are 9 publications on behalf of Farida AY, Kusaeri, Muhid A, Ulinnuha N, and Wibowo AT. There are 8 publications produced by Yusuf A and 7 publications by Hafiyusholeh M, Hamid A, Junaidi R, Muzakki A, Setiawan F, and Thohir M. Last, Alfin J and Mawardi AI produced 6 scientific publications.

Most Relevant Affiliations

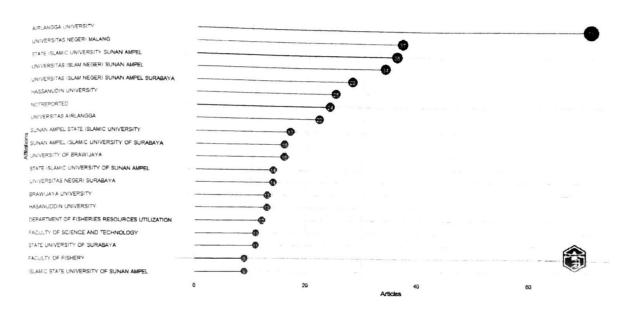


Figure 2. Most Relevant Affiliations

Figure 2. shows that another university that has the most relevant affiliation or research collaborations with UIN Sunan Ampel Surabaya is Airlangga University. with 71 publications. This can be done if two or more people write the publication. The second place is the collaboration between UIN Sunan Ampel Surabaya and Universitas Negeri Malang Malang, with 37 publications. While in the following ranking, there are similarities in affiliate names, but different writing formats, namely, the authors are both from UIN Sunan Ampel Surabaya, but the format of affiliate writing is different. Some write their affiliations "State Islamic University Sunan Ampel", "Sunan Ampel State Islamic University", "Sunan Ampel State Islamic University Surabaya", "Sunan Ampel State Islamic University", or "State Islamic University of Sunan Ampel". Affiliate writing should be the same to make it easier to index in SCOPUS to increase the ranking of universities. The small number of publications indexed by Scopus can occur because one of them is the non-uniform Writing of UIN Sunan Ampel Surabaya affiliates written by lecturers. According to https://psdk.ui.ac.id/, this has been experienced by Universitas Indonesia related to the non-uniformity of affiliate writing, which has an impact on the small number of Universitas Indonesia publications recorded on the Scimago Lab scientific publication ranking processing site, so that the Rector's circular is enforced that lecturers and students of Universitas Indonesia are required to include author affiliations with the correct and uniform name, namely the "University of Indonesia" (Pencantuman Afiliasi Dengan Universitas Indonesia Dalam Publikasi Ilmiah Dari Civitas



Akademika Universitas Indonesia. | Sarjana_komui, n.d.). The same step can be taken by the Rector of UIN Sunan Ampel Surabaya-Indonesia regarding the socialization of uniform affiliate writing so that it will affect the ranking of reputable international scientific journals, especially Scopus.

Most Relevant Sources

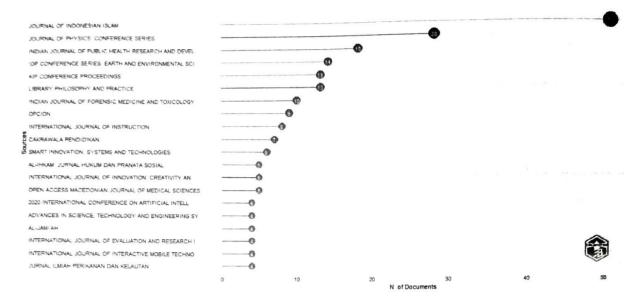


Figure 3. Most Relevant Sources

Figure 3. shows that the Journal of Indonesia Islam is the most relevant source of UIN Sunan Ampel Surabaya lecturers, with 61 publications. The second place is the Journal of Physics Conference Series, with 28 publications. The third place is the Indian Journal of Public Health Research and Development, with 18 publications. The next ranked is IOP Conference Series Earth and Environmental Science with 14 publications and the AIP Conference Proceedings with 13 publications. Then, it is followed by the Library Philosophy and Practice with 13 publications and the Indian Journal of Forensic Medicine and Toxicology with 10 publications. There are Indonesian journals indexed by Scopus, namely Cakrawala Pendidikan, Al-Ihkam Journal of Law and Social Institutions, Al jami'ah, and Scientific Journal of Fisheries and Marine Affairs. Other journals listed in the chart contain scientific publications of UIN Sunan Ampel Surabaya lecturers with a minimum of 4 publications.



Annual Scientific Production

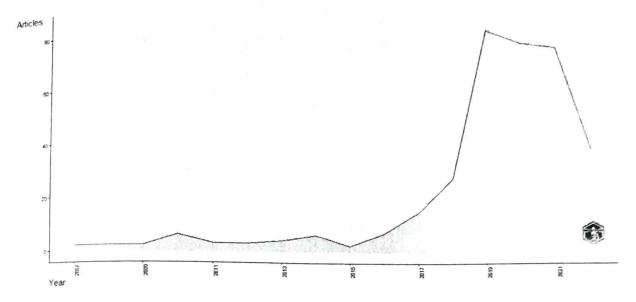


Figure 4. Annual Scientific Production

The annual scientific production can be seen in Figure 4, which shows the ups and downs from 2007 to 2015. Then from 2015 to 2019, the production of research and publications began to rise consistently. The production of research and publications in 2019 reached the highest point of 90 scientific publications. In 2020 research and publications indexed in Scopus decreased by 80 publications. In 2021, there was a decrease of 70 publications indexed by Scopus. The number of declines in scientific publications for three consecutive years proves that other factors affect the productivity of UIN Sunan Ampel Surabaya lecturers. This is strengthened by research conducted by Pardjono in 2017, stating that the factors inhibiting the productivity of the publication of scientific papers of UNY PPs students in international journals are external factors such as busy work, high costs, limited access to subscriptions to printed journals and online journals (Pardjono et al., 2017). Meanwhile, according to research conducted by Fatchullah and Eko Nugroho, three factors affected the productivity of scientific work in 150 permanent lecturers of UPN Veteran East Java in 2017: human capital, motivational, and information literacy factors (Fatchullah, 2017). The human capital factor consists of individual ability, leadership, organizational climate, and the effectiveness of the working group. Based on the research of Daradasih (2019), it is known that individual ability is the factor that contributes the most to improving permanent employees' performance (Daradasih, Hardyastuti, Utami, 2019). Further studies are needed to identify human capital factors to increase the production of scientific publications of UIN Sunan Ampel Surabaya lecturers indexed by Scopus.

Average Article Citations per Year

A citation is an act of quoting (Citation Definition & Meaning - Merriam-Webster, n.d.). Citations are quotations and references in a scientific work to other writings taken from books, papers or other sources (Hasil Pencarian - KBBI Daring, n.d.). In this case, the citations are quotations from scientific publications by lecturers at UIN Sunan Ampel Surabaya, indexed by Scopus.



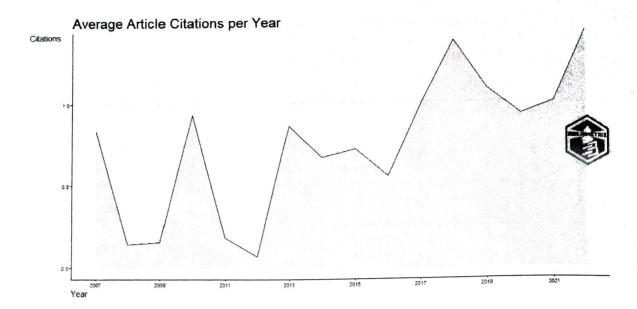


Figure 5. Average Article Citations per Year

Based on Figure 5, it is known that the average articles of lecturers at UIN Sunan Ampel Surabaya, which were cited from 2007 to 2021, fluctuated, which had significant ups and downs. 2018 was the highest peak for citations of scientific publication articles by lecturers at UIN Sunan Ampel Surabaya. Furthermore, in 2019 it decreased by 1% and again by 0.5% in 2020. Meanwhile, in 2021, there was an increase in citations of 0.2%, and in 2022, there was a significant increase in citations. This is suitable with the 2020 Minister of Education, Culture, Research, and Technology target that stated two things that need to be improved: publications and citations (*Menteri Ingin Sitasi Dan Kualitas Publikasi Ilmiah Indonesia Meningkat - ANTARA News*, n.d.). Scientific publications and citations affect world-class university ranking.

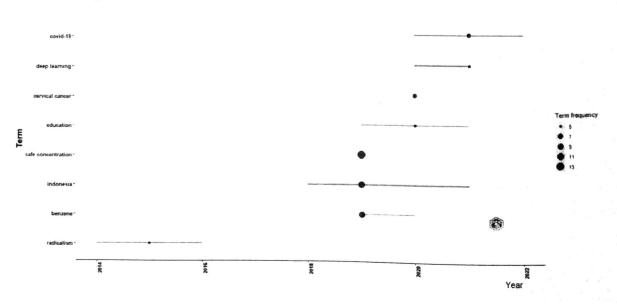


Figure 6. Trending Topic

Trend Topics



The research and publication of international standard trending topics among lecturers at UIN Sunan Ampel Surabaya are very diverse. The highest trending topic for research and publication is "Safe Concentration", with 13 publications researched in 2019. The next trending topic is "Indonesia", with 11 publications studied from 2018 to 2021. The third trending topic research is "benzene", with nine (9) articles researched in 2019 and 2020. The fourth ranking for research topics are "cervical cancer", with seven (7) publications in 2020 and "covid-19", with seven (7) publications which are trending research topics from 2020 to date. In addition, there are trending research topics from "education", "deep learning", and "radicalism", with five (5) publications from 2014 to 2021.

Subtopic Thematic Maps

The thematic map is divided into four subtopic quadrants in safe concentration based on density and centrality. The thematic map can be seen in Figure 7.

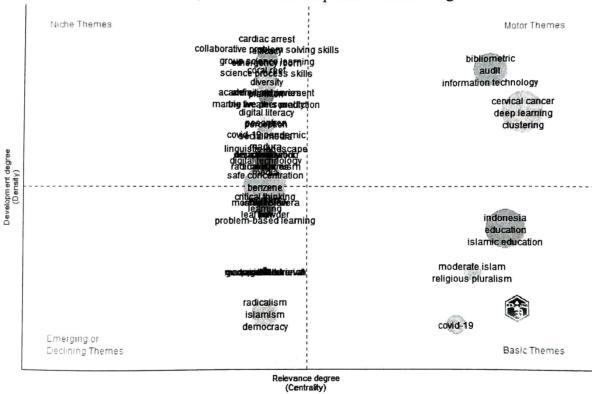


Figure 7. Subtopic Thematic Maps

Figure 7. shows that the subtopics in the upper right quadrant need to be further developed and studied because of their high density and centrality, such as bibliometrics, auditing, and information technology in the same cluster. Furthermore, there are also cervical cancer, deep learning, and clustering in the same cluster. This subtopic has a great influence because many citations and publications have been made on this subtopic.

The subtopics in the upper left quadrant are subtopics with a wider reach and have been widely researched and published but still need to be more influential due to the low number of citations. The subtopics are grown science learning, coral reel, science process skills, diversity, digital literacy, pesantren, pandemic, social media, Madura, linguistic escape, digital technology, media, and safe concentration.



The sub-topics in the lower left quadrant are research and publication sub-topics that are still little discussed or still not yet developed or can also start to decline and have a low level of influence because of their low citation rate. The subtopics are benzene, critical thinking, learning, leaf powder, and problem-based learning in the same cluster. There are subtopics of radicalism, Islamism, and democracy in another cluster.

Finally, the lower right quadrant subtopic is a fundamental subtopic with high centrality but low density, which means that the subtopics in that quadrant have a great influence because of the large number of citations. Even though the citation is high, the research and publications that discuss it are still few or have yet to develop much. The subtopics are *Indonesia*, education, and Islamic education in the same cluster. A subtopic of Moderate Islam and religious phuralism is in the same cluster. There is a Covid-19 subtopic which is in a separate cluster. Research related to bibliometric analysis about the publication trend of covid-19 and tourism has been researched by Alba Viana-Lora (2022), with 921 publications found, and most of them came from China (Viana-Lora & Nel-lo-Andreu, 2022). This strengthens proof that covid-19 is one of the crucial subtopics that can be studied further. Research on Covid-19 can also be linked to other factors, for example, *Islamic education*, which is characteristic of academics at UIN Sunan Ampel Surabaya in Indonesia.

Therefore, based on the thematic maps related to the research subtopics and publications that have been explained, the subtopic in the right quadrant, such as "Indonesia, education, Islamic education, moderate Islam, religious phuralism, and covid-19", can be further studied and researched because the number of citations and influences is high. However, there is still little research on this subtopic. This is an opportunity that can be used for further research.

Conclusion

The conclusions obtained from the results of bibliometric analysis related to international scientific publications by lecturers at UIN Sunan Ampel Surabaya in Scopus using the Bibliometrix package in R Studio are:

- 1) The most active lecturer of UIN Sunan Ampel Surabaya in writing between 2007 and 2021 was Rahmawati P. with 33 publications.
- The affiliation or college institution that conducts research collaborations with lecturers at UIN Sunan Ampel Surabaya is Airlangga University, with 71 publications.
- 3) The Scopus-indexed international standard journal that most often publishes scientific publications from lecturers at UIN Sunan Ampel Surabaya is the Journal of Indonesia Islam, with 61 publications.
- 4) The production of scientific publications by UIN Sunan Ampel Surabaya lecturers from 2007 to 2015 fluctuates. From 2015 to 2019, research production and publications began to increase consistently. 2019 was the highest point for scientific publications, with 90 publications. In 2020, research and publications indexed in Scopus decreased by 33.2%, and in 2021 decreased by 29.1%.
- 5) The average number of articles cited every year fluctuates. The citation of scientific publication articles by lecturers at UIN Sunan Ampel Surabaya accomplished the highest peak in 2018. In 2019, it decreased by 1% and decreased again by 0.5% in 2020. However, in 2021, it increased by 0.2%.



6) The most researched and published trending topic by UIN Sunan Ampel Surabaya lecturers is "Safe Concentration" in 2019, with 13 publications, the second-ranking trending topic is "Indonesia" that have 11 publications from 2018 to 2021. The third trending topic is "benzene", with 9 articles studied in 2019 and 2020.

Recommendations

The recommendations obtained from the results of bibliometric analysis related to international scientific publications by lecturers at UIN Sunan Ampel Surabaya in Scopus using the Bibliometrix package in the R Studio application are:

- 1) Enforcement of regulations and socialization about uniformity of affiliate writing at UIN Sunan Ampel Surabaya to facilitate Scopus indexation of affiliates which affects the ranking of a world-class university
- 2) Additional library budget related to providing print and non-print collections such as e-journals and e-books as references to increase research and scientific publications
- 3) Writing training about successfully submitting reputable interactional journals such as Scopus to academics at UIN Sunan Ampel Surabaya, not only lecturers but also librarians and students.
- 4) Writing productivity to be increased by making a reward policy like incentives for lecturers and librarians at UIN Sunan Ampel Surabaya with the highest citation rating at Scopus
- Solution of the subtopic "Indonesia, education, blamic education, moderate Islam, religious pluralism, and covid-19" are still low. Libraries, as a source of information, need to increase the budget for procuring books, journals, e-books, and e-journals related to these subtopics as material for developing collections. This provides an opportunity for a significant increase in the number of publications and citations so it can affect UPN Suman Ampel Surabaya in the world-class university ranking.

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