Visualizing lecturers' publications submitted to institutional repository during the COVID-19 pandemic: a case of Mataram State Islamic University, Indonesia

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Visualizing lecturers' publications submitted to institutional repository during the COVID-19 pandemic: a case of Mataram State Islamic University, Indonesia

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Abstract

The purpose of this study was to examine and visualize lecturers' writings submitted to the Mataram State Islamic University's institutional repository during the COVID-19 pandemic. The study used bibliometric analysis with the total number of publications was 166 documents in various types.
The results indicated that journal articles accounted for 42.16 percent (n=70) of all publications and more than half (65.66%) of total publications were authored in Indonesian language. Additionally, it was discovered that the terms pendidikan (education) and pembelajaran (learning) were the two most frequent terms in all type of publications, appearing 10,714 and 9,834 times respectively. Furthermore, this study discovered that Abdul Wahid was the most prolific author, while Abdul Quddus was the most collaborative one. This research also found that the terms covid-19 and pendidikan (education) were the most frequently occurring words combined in a single document with at least three co-occurrences. This study was expected to encourage lecturers to have publications and deposited into the institutional repository. It will benefit both lecturers and university in national and international scale.

Keywords: bibliometric analysis, lecturers' publications, institutional repository, mataram state islamic university, covid-19, pendidikan, education

Introduction

Lecturers in all state universities have various duties in consequence with the position and status as permanent lecturers ranging from teaching, administration stuffs, community services and research publications. Furthermore, there are many others works to do such as institutional meetings, supervision, marking, report etc. that, sometimes, disrupt their concentration to conduct the most priority work and lead to the constraint of academic productivity such as writing a book, presenting in conference, seminar etc. (Johnson et al., 2017). The enormous disruption caused by COVID-19 pandemic also has contributed to the limitation of field-work study where lecturers usually conduct the field study to collect the data. On the one hand, they should keep teaching and producing high number of publications for the sake of academic success, but on the other hand, they should follow "stay at home" mantra where every movement is limited. Furthermore, academicians perceive the impact of COVID-19 to writing productivity both negatively and positively (Karakuzu et al., 2020). The present study aims to investigate the number of published articles stored at the university repository system. Lecturers' productivity in research publication during COVID-19 pandemic is fruitful study because little is known about the lecturers' productivity in conducting research during the pandemic apart from teaching as the main duty especially in the context of Mataram State Islamic University.

Extensive number of research articles has been published in the time of COVID-19 pandemic. Darsono et al. (2020) discussed number of international publications on COVID-19 in the world during December 2019-March 2020. They found that there were 1,475 documents in the form of articles, reviews, notes, editorials, letters, book chapters and various types of publications. However, the research did not specify detail of the publications in terms of disciplines. It rather reported that the most productive author was from Saudi Arabia and China experienced the lead as the most active research country. In contrast, a research with larger scale has been conducted by Grammes et al. (2020) which gauged a total of publications in the early phase of COVID-19. After extracting around 7,185 publications, they came up with the finding that the top 3 countries contributed in COVID-19 research were the United States, China and Italy. It was confirmed that the United States built a collaborative work most with China and United Kingdom. A remarkable number of publications indicated in the previous studies above shows that academic productivity was triggered by the critical situation especially those that closely related to the COVID-19 topic. Therefore, it is also pivotal to exhibit the national or local scope of publication productivity experienced by academicians in order to gain a succinct insight of academic contribution.

Mataram State Islamic University serves 23 study programs that belong to 5 faculties, namely faculty of education and teacher training, faculty of Islamic economics and business, faculty of Islamic law, faculty of da'wah and communication and faculty of ushuluddin and comparative religion. Faculty of Education and Teachers Training seems to be the largest faculty in terms of the number of study programs, lecturers as well as students. However, as the ultimate vision of the university to be a knowledge horizon, where Islamic religion and science are merged, the university does not only open the Islamic-related study programs, but also accounts natural and social sciences as well as humanistic studies. It is the reason why lecturers' work on academic articles varies according to the background of their academic disciplines.

The purpose of this study was to investigate and visualize lecturers' publications during the COVID-19 pandemic which had been deposited into Mataram State Islamic University's institutional repository. This study is expected to encourage lecturers to write articles, journals, or other types of publications and submit their work to the institutional repository where they are working at.

Research method

This research employed bibliometric analysis to visualize the map of observed publications. Bibliometric analysis is beneficial for the majority of research due to a variety of reasons, including providing an overview of a study area and analyzing researchers (Bjork et al., 2014). Bibliometrics is a statistical method that is functioned to quantitatively analyze research articles related to a particular topic through mathematical ways (Chen et al., 2014). Recently, the development of various bibliometric softwares allows scientists to use visual methods to evaluate journals in order to analyse and determine the best articles, authors, institutions, and countries. (Saberi et al., 2019).

Three computer applications were employed in this study, namely Microsoft Excel, VOSviewer, and NVivo 12. Microsoft Excel was beneficial for gathering and categorizing publications' identities. VOSviewer was used to carry out bibliometric analysis and visualize

co-authorship and keyword clusters, while NVivo 12 was used to create word cloud visualization. A word cloud is a graphic representation of the words that appear in documents. It assists in assessing the relevance of a text to a certain information need. One of its shortcomings is that it just summarizes individual words statistically, but ignoring linguistic information about the words and their connections. As a consequence, the majority of systems use word clouds to summarize text in a static way, without or with limited interactive capabilities. (Heimerl et al., 2014).

The publications for this research were obtained from the Mataram State Islamic University's institutional repository website (http://repository.uinmataram.ac.id/). The publishing time is limited to two years, between 2020 and 2021, during the COVID-19 outbreak. The website has 166 documents in different types of publication. There were 135 documents in 2020 and 31 publications in 2021, according to the institutional repository.

Results and discussion

Publication type

Numerous publications of various types were uploaded to the institutional repository database. The most published documents are journal articles at 42.16 percent (n=70), followed by books at 38.55 percent (n=64), reports at 7.83 percent (13 percent), and other kinds of publications (see Figure 1 below).
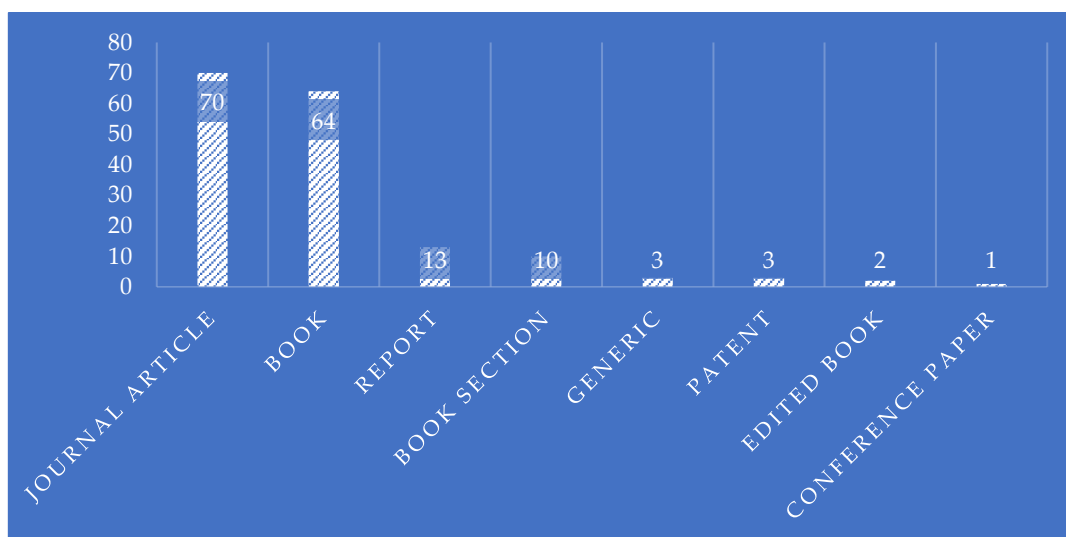

Figure 1. Type of publications

This result showed that the majority of lecturers at Mataram State Islamic University preferred to publish journal articles over other types of publishing. However, the number of journal articles written by lecturers that were published both in national and international journal publishers is not specified. As a form of publications, books came in second place. The Faculty of Education and Teacher Training at this institution organized book writing competition to urge academics at Mataram State Islamic University to publish books. This may explain why books uploaded to the institutional repository are ranked second in terms of document type.

Additionally, the number of lecturers grew by more than 100 individuals in 2019 after the selection process of Indonesian civil servants, which indirectly resulted to the increasing number of publications in 2020.

Language use

This study also classified documents according to the languages they used. Indonesian is the most widely used language, at about 65.66 percent (n=109), followed by English at 31.92 percent (n=53) and Arabic and mixed languages at 1.20 percent (n=2).
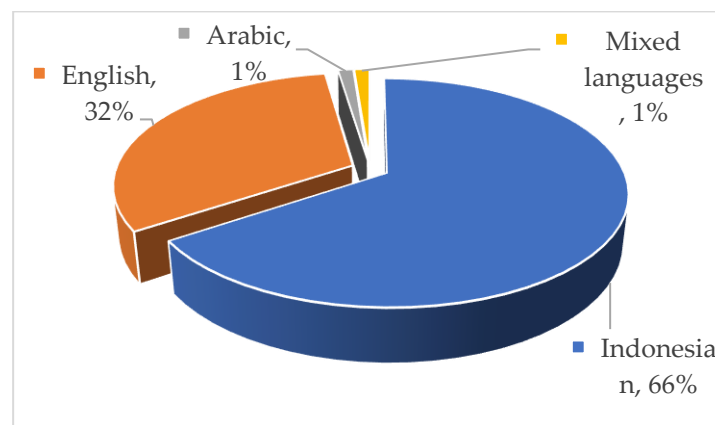

Figure 2. Languages utilized by publications

Mataram State Islamic University is located in Indonesia. This is the reason why the majority of publications were written in Indonesian, as is the case in other nations where their mother tongue is the most common use of language both in written documents and spoken contexts. English was ranked second in terms of frequency of usage in publications. It showed that lecturers are pursuing international publications, which indirectly contributes to the university's worldwide recognition. However, there were only two publications in Arabic. The university should encourage lecturers to publish their works in this foreign language, other than English, since State Islamic University is well-known for its ties to Islam and Arabic. The term "mixed languages" refers to the usage of two or more languages inside a single document. The use of mixed languages was found in two books authored by Emawati (2020) and Syarifudin and Warseto (2020). These books were well-written in Indonesian and Arabic. All of these books were published and recorded in the Faculty of Education and Teacher Training category, indicating that they were intended for educational purposes.

Word cloud visualization

The word cloud visualization was used to identify the word that appeared the most often in the texts. This study identified the ten most frequently used terms based on a minimum of 5,000 occurrences in all texts. With 10,714 occurrences in all types of publications, the most often occurring word was pembelajaran (learning).

Figure 3. Word cloud visualization of words appeared within all documents

Table 1. Ten most popular words

Word	Number of occurrences	Weighted percentage (%)
pembelajaran (learning)	10,714	0.44
pendidikan (education)	9,834	0.41
nilai (value)	7,730	0.32
anak (children)	7,317	0.3
islam (Islam)	7,166	0.3
penelitian (research)	6,366	0.26
manusia (mankind)	5,639	0.23
belajar (study)	5,294	0.22
guru (teacher)	5,279	0.22
huruf (letter)	4,949	0.21

The most frequently used terms in this research were pembelajaran (learning) and pendidikan (education). The majority of the top 10 occurrences also have a connection with learning and education, such as the words nilai (value), belajar (study), guru (teacher), and huruf (letter). This implies that the majority of publications in Mataram State Islamic University's institutional repository deal with learning and education processes. Because the primary aim of a university is to teach students, it seems that the greatest number of publications would deal with education and the learning process. Lecturers should be concerned with their students' education in their institutions. Along with the findings, the words Islam and nilai (value) were often used, indicating that in addition to addressing education and learning processes, it was critical to include Islamic values into the process. Another reason why pembelajaran (learning) and pendidikan (education) became the most popular terms is because the Faculty of Education and Teacher Training had the highest number of lecturers in comparison to other faculties. In addition, this faculty encouraged its lecturers to increase book publication during the COVID-19 pandemic by organizing book writing competition.

Co-authorship patterns

This study revealed that lecturers at Mataram State Islamic University were very prolific writers. The dataset included 127 authors, with Abdul Wahid was being the most productive author with 11 publications during the COVID-19 pandemic, followed by Suhirman and Kadri in second and third position with 10 articles, respectively, and other lecturers, as indicated in Table 2.

Table 2. Ten most productive lecturers during the COVID-19

Name of authors	Total documents
Abdul wahid	11
Suhirman	10
Kadri	10
Syarifudin	8
Muammar	8
H. Udin	7
Kristayulita	7
H. M. Zaki	7
Ismail	6
Syamsul Arifin	5

Abdul Wahid as the most prolific author, at least, had collaboratively written numerous publications during the COVID-19 pandemic with other authors. As documented in the institutional repository, he had authored four journal articles, two books, three reports, and two book sections. Two of journal articles were written in English, while the remaining publications were written in Indonesian language, the author's native language.
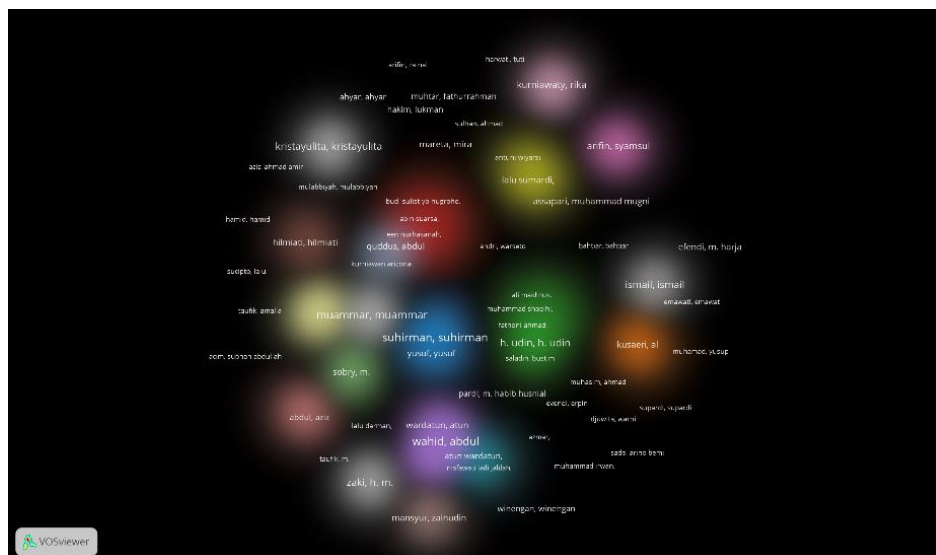

Figure 4. Co-authorship cluster visualization of publications

Numerous lecturers were seen that they had collaboration on publishing their research. At least five clusters with several authors were identified. It showed that more than five lecturers collaborated on document authoring.

By analyzing all co-authorship patterns, our analysis determined that Abdul Quddus was the most collaborative author with 14 other contributors to generate four documents. Most publications were written in 2020, with none being written in the other year. Figure 5 depicts the overlay visualization.
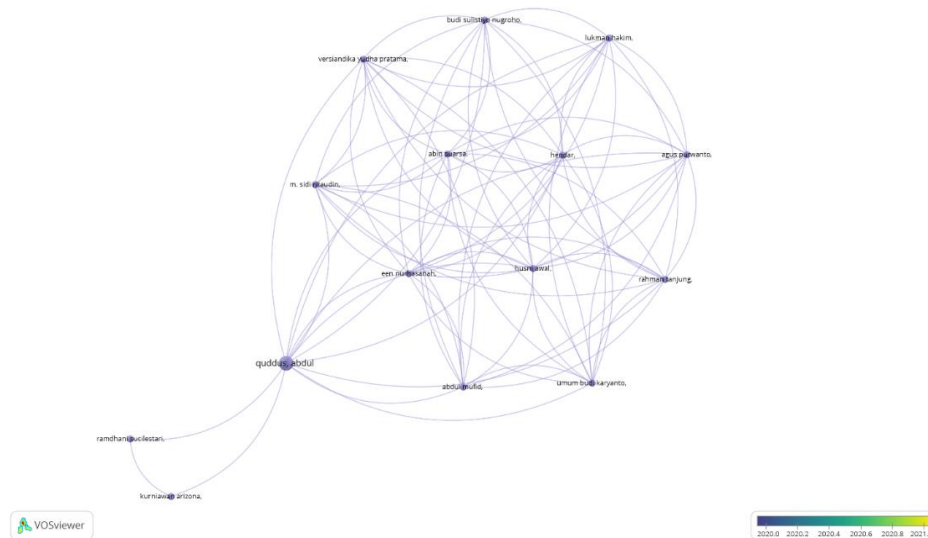

Figure 5. Overlay visualization of Abdul Quddus co-authorship

As shown in Figure 5, Abdul Quddus as the most collaborative author had 14 networks, indicating that he collaborated with 14 other authors. Budi Sulistiyo Nugroho, Lukman Hakim, M. Sidi Ritaudin, Een Nurhasanah, Abin Suarsa, Umum Budi Karyanto, Rahman Tanjung, Hendar, Versiandika Yudha Pratama, Husni Awal, Abdul Mufid, Agus Purwanto, Ramdhani Sucilestari, and Kurniawan Arizona were the joined writers. They had submitted four publications to the institutional repository of Mataram State Islamic University. It was not specified if all of the writers were university lecturers or not. The document that had the most authors was a journal article entitled "Effect of Ecological, Servant and Digital Leadership Style Influence University Performance? Evidence from Indonesian Universities".

Keyword clusters

Keywords were classified in this research based on their co-occurrences. There were thirteen terms categorized into ten clusters where each cluster with a minimum of three co-occurrences across all texts. Two clusters had two keywords, whereas the other clusters contained only one. First cluster included three keywords: bahan ajar (learning materials), hasil belajar (learning outcomes), and pembelajaran (learning). The second cluster classified the terms covid-19 and pendidikan (education). Each of the remaining clusters included a single keyword: analogical reasoning, bahasa indonesia (indonesian language), communication, dakwah, efl, higher education, learning, and problem-based learning.

Figure 6. Cluster visualization of keywords co-occurrences

Keywords in this study addressed several topics within the publication documents. However, the majority of them deal with higher education and the learning process. The term covid-19 was associated and clustered with the term pendidikan or education (see Figure 6 above). It indicated that lecturers of Mataram State Islamic University concerned with publications related to the COVID-19 and education. The current outbreak has been discussed not only from health and economic perspectives, but also from education standpoint.

Numerous studies have examined the effect of COVID-19 on the learning process, as the majority of institutions have adopted distance learning through a variety of mobile and computer applications. Marinoni et al. (2020) stated that about 29% of HEIs' learning processes have been replaced by remote teaching and learning in Africa, 72% in the Americas, 60% in Asia and the Pacific, and 85% in Europe. Additionally, the research discovered that 24% of HEIs' learning processes have been cancelled in Africa, and 3% in the Americas, Asia and Pacific, and Europe, respectively.

Conclusion

Lecturers of Mataram State Islamic University had produced up to 166 publications during the COVID-19 pandemic. The majority of them were journal articles, books, reports, and other types of publications. This study found that the word pembelajaran (learning) was the most frequently occurring word within all type of publications. This study also discovered that 127 authors were collaborating to produce these documents. The most prolific author was Abdul Wahid, while the most collaborative author was Abdul Quddus. In regard to the most co-occurring word, covid-19 and pendidikan were at the top. It indicated that lecturers concern with publications related to these two words.

Lecturers of a university are obliged to publish their work and deposit it in the university's institutional repository. It will assist them in expanding the readers for their publications. Besides, depositing their journal articles, books, and other forms of publications benefits their university library. It is expected to have an impact on national and international recognition from other institutions.

Limitation of the study

This research has limitations. First, this study does not include all of the lecturers' publication documents (journal articles, books, reports, etc.), as not all of them uploaded and deposited their scientific writings into the institutional repository; thus, the result does not accurately reflect the actual number of lecturers' publications. Second, there might be error in calculating the number of publications due to errors possibility made by lecturers when deciding the kind of documents to deposit in the institutional repository.

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