Research Trend on Physics Studies in The Qur'an Through Bibliometric Analysis During 2016-2020

Alisa Arrizkiyah[1] Selsy F. Alfany[2] Nadi Suprapto[3,*] Utama A. Deta[4]

[1,2,3,4]*Department of Physics, Universitas Negeri Surabaya, Indonesia*
[*]*Corresponding author. Email:* nadisuprapto@unesa.ac.id

ABSTRACT
The purpose of this study is to analyse research trends regarding the topic of physics studies in the Qur'an during the period from 2016 to 2020 through bibliometric analysis using the Scopus database. The results showed that the number of publications in 2016-2019 increased dramatically. However, after 2019 it decreased in 2020. Conference papers dominated document sources related to this topic using English. Indonesia is the first country to publish the most research on this topic, where Adiwijaya is the most prolific writer who publishes seven documents. The Journal of Physics Conference was contributed the most to the research with 47 documents. Most Indonesian universities researching physics studies in the Qur'an are UIN Sunan Gunung Djati Bandung. However, the most dominating research in this study came from public universities. There are two clusters of visualization of research trends on physics studies in the Qur'an during 2016-2020, including (1) sources of information on physics studies in the Qur'an and (2) implementation of the study of physics in the Qur'an. The results of this study can help researchers recognize research trends on physics studies in the Qur'an over the world and provide direction for further research.

Keywords: Physics studies, Qur'an, Bibliometric.

1. INTRODUCTION

The Qur'an is a miracle that was revealed to the Prophet Muhammad through the intermediary of the Jibril. The Qur'an contains the content of noble values that cover all aspects of human life in dealing with God, relationships with other human beings, and relationships with the natural surroundings. All Muslims believe in the truth contained in the Qur'an. According to Syukri [1], the Qur'an is a source of knowledge, both theology and general sciences, including natural science. The Qur'an emphasizes the importance of mastering science and technology. The modern interpretation also explains that the Qur'an is not only the main source of Islamic teachings but also the source and inspiration for the emergence of modern scientific theories. Scientists who use the Qur'an as a source of inspiration in developing their theories are even more convinced that Islam is closely related to modern science. From here, various studies have emerged that reveal the synergistic relationship between Islam (the Qur'an) and modern science, one of which is physics [2]. Knowing, studying, and learning the meaning of the Qur'an is worship with an excellent reward [3]. As a source of literature, the Qur'an provides many descriptions of ideas (explanations) that textually examine the concept of physics.

Allah SWT created everything with its size. Creating and perfecting His creation determines the level (regularity) of each. Physics, as one of the sciences, tries to study and read these predetermined sizes and regularities. The language in expressing these sizes and regularities in physics is called the empirical formula of physics [4]. Physics is a science that studies the essential components of the universe and its interactions [5].

Meanwhile, Physics is a science that studies natural phenomena (objects), both micro, macro, and their interactions also try to find relationships between these symptoms and reality. Physics is related to finding out about nature systematically so that the results of learning Physics are not only mastery of a collection of knowledge in the form of facts, concepts, principles but is a process of discovery [6]. Physics must be proven by concrete human reason through scientific performance. Furthermore, it must be tested for the truth to understand facts, concepts, and even theories. As long as a new theory cannot break the physical theory, then the theory is still considered the truth [3].

The relationship between Qur'an and physics can be proven with Kauniyah verses, which contain the greatness of the universe and all its contents. One of them is the letter of Ali Imran verse 190 which gives an implied meaning regarding natural phenomena that can be studied with physical theory [7]. All knowledge of the world has been written in the Qur'an either explicitly or implicitly. Therefore, the meaning and interpretation must be correct.

Based on the previous research findings, if the study of the verses of the Qur'an related to science is further improved, it will obtain the appropriate truth. If lessons in the world of education regarding the study of the Qur'an are added, then the student's love of the Qur'an will be embedded so that young people who have the morality of the Qur'an appear [8]. In addition, based on the results of interviews with students at MAN Purwodadi, it shows that many students think that science has nothing to do with religion (Al-Qur'an). They never study the Qur'an with the science they learn [9]. Therefore, it is crucial in studying physics in the Qur'an because earlier scientists also formulated the concept of physics-based on the Qur'an.

Based on the description above, the author intends to analyse research trends in the study of physics in the Qur'an using bibliometric analysis for the last five years (2016-2020), including (1) publication output, document sources, and language sources, (2) the distribution of publications across countries, (3) the top author in researching of physics study in the Qur'an in the world. (4) publication patterns based on source titles, (5) the contribution of Indonesian researchers on researching the study of physics in the Qur'an, and (6) the visualization results of the research trends of physics study in the Qur'an. Therefore, this study uses bibliometric analysis because it is very helpful for researchers to identify the research trends and impactful studies [10]. Bibliometric analysis is an appropriate method to evaluate the contribution of journals in the advancement of knowledge [11]. Journals are considered prominent channels of sharing the scientific and scholarly research to rest of the world. These channels of communication are receptive parameters of current and emerging trends in any area of knowledge [12]. Bibliometric analysis is a technique used to provide a network structure that refers to questions, such as the main topics in a particular field of science, how these topics relate to one another, and how a particular topic develops over time [13]. This study reviewed the research trends on physics studies in the Qur'an during 2016-2020 to identify the research trends and help researchers in future studies [14].

2. METHODS

This study uses a literature study method that applies bibliometric analysis by optimizing the Scopus Elsevier database, which is the most extensive collection of

literature summaries globally, with citations that provide abstracts from various peer-reviewed scientific and research literature. "ABS (Qur'an)" and "physics" were used as the filter to search for titles, abstracts, and keywords from 2016 to 2020. While the search strategy was little:

ABS (Qur'an) AND physics AND LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017) OR LIMIT-TO (PUBYEAR, 2016)).

Data collection was carried out on April 12, 2021. Based on the search, 128 documents were obtained that matched the keywords. Then the data obtained is exported to CSV format so that all recorded information from each article is downloaded. The results obtained are then analysed using VOSviewer software to visualize and explore bibliometric knowledge maps [15].

3. RESULT AND DISCUSSION

3.1. *Publication Output, Document Sources, and Language Sources*

Based on a search using the Scopus Elsevier database obtained 128 documents related to the study of physics in the Qur'an. The search is limited to the 2016-2020 period, and there are 5 document sources, namely book chapters, reviews, books, articles, and conference papers.
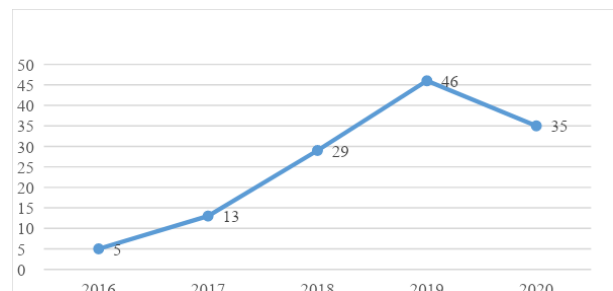

Figure 1 The number of documents on physics study in the Qur'an during 2016-2020.

Based on Figure 1, the graph in 2016-2019 increased dramatically. In 2016 there were only five documents, and it became eight times that in 2019, namely 46 documents. After 2019 it decreased in 2020 with a difference of 11 documents..
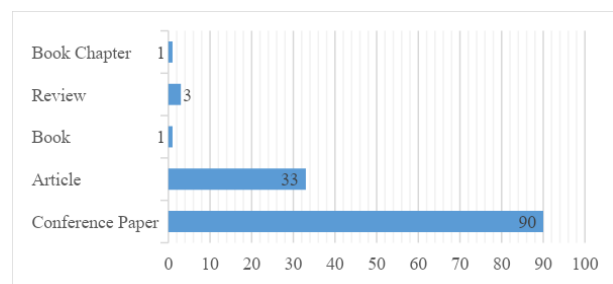

Figure 2 The number of documents on physics study in the Qur'an based on source.

Figure 2 shows that the largest source of documents is conference papers, totalling 90 documents. Then followed by articles and reviews. In this case, it can be seen that the book and book chapter issued at least 1 document.
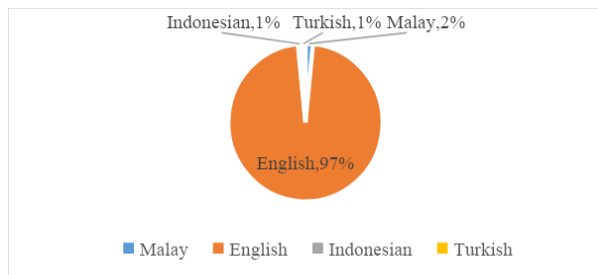

Figure 3 The percentages of documents on physics study in the Qur'an based on Language.

Based on Figure 3, it can be seen that the research related to the study of physics in the Qur'an, which amounted to 128 documents, mostly used the English language, which was about 124 documents with a percentage of 97%. Other documents using the Malaysian language amounted to 2 documents with a percentage of 1%. Documents that use Indonesian and Turkish have the least amount of 1 document each with a percentage of 1%.

3.2. Countries Distribution

Based on the number of cross-border documents shown in Figure 4, Indonesia dominates with 89 documents from 2016-2020. It was then continued with Malaysia. Other countries such as Egypt and Arab contributed 4 and 3 documents, respectively. Meanwhile, France, Italy, Iran, UK, Germany, Turkey, India, and Iraq contributed the same number of documents.
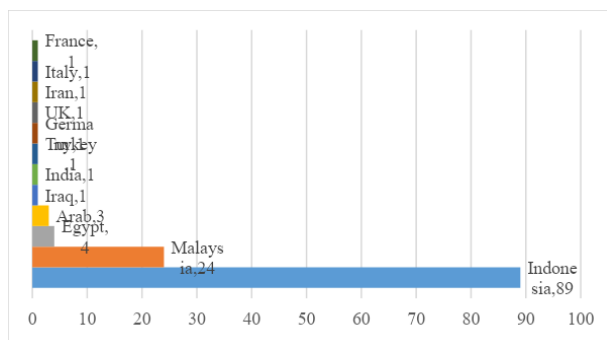

Figure 4 Countries distribution of physics study in the Qur'an during 2016-2020.

3.3. Top Authors in Researching of Physics Studies in The Qur'an

The productivity of the top writers on physics studies in the Qur'an during 2016-2020 with the Scopus index is shown in Figure 5, where Adiwijaya is the most productive writer on this topic, with seven publications.
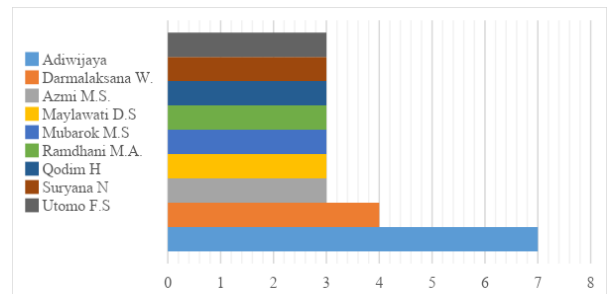

Figure 5 Top authors in researching of physics studies in the Qur'an (2016-2020).

3.4. The Pattern of Publication of The Study of Physics in The Qur'an Based on The Title of The Source

Table 1 describes the journals or proceedings that contribute to the study of physics in the Qur'an in the world. The Journal of Physics Conference was the journal that contributed the most to the research, with 47 documents. This is in line with research conducted by (Suprapto et al., 2021b; 2021c), which stated that the Journal of Physics Conference was a series of leading conferences that contributed the most to the research [16-17]. Then IOP Conf. Ser. Earth Environ. Sci. ranks as the second-largest contributor to the research. While IOP Conf. Ser. Mater. Sci. Eng. ranks third in publishing as many as 14 documents

Table 1. Number of documents of physics study in the Qur'an (2016-2020) across source tittle

No	Name of Journal or Proceeding	Number of documents
1	J. Phys. Conf. Ser.	47
2	IOP Conf. Ser. Earth Environ. Sci.	15
3	IOP Conf. Ser. Mater. Sci. Eng.	14
4	AIP Conf. Proc.	4
5	Intl. J. Adv. Comput. Sci. Appl.	3
6	Indones. J. Electrical Eng. Comput. Sci.	2
7	Opcion	2
8	Sains Malays.	2
9	Telkomnika Telecomun. Compt. Electr. Control	2
10-42	32 others journal and proceeding (with 1 document)	1

3.5. The Contribution of Indonesian Researches on Physics Study in The Qur'an

Table 2 shows the top universities in Indonesia that contribute to the study of physics in the Qur'an. Public universities dominate the top thirteen universities in Indonesia as many as nine universities. Meanwhile, there

are only 4 Islamic universities/institutions. However, in this case, UIN Sunan Gunung Djati Bandung ranks first as the most published university with 14 documents. Higher education rankings tend to be a more subjective popularity race where these factors do not always indicate the quality of a university. For example, the number of publications does not necessarily match the quality or usefulness of the article. Therefore, quality improvement based on ranking cannot be seen from the number of publications, but by upholding the principles of openness, completeness, fairness, and accommodation for the diversity of universities in Indonesia [18].

Table 2. Top universities/institutions in the physics study in the Qur'an in Indonesia (2016-2020)

No	Name of Journal or Proceeding	Number of documents
1	UIN Sunan Gunung Djati Bandung	14
2	Universitas Telkom	11
3	Universitas Sumatera Utara	4
4	Universitas Amikom	3
5	Universitas Brawijaya	3
6	Universitas Pendidikan Indonesia	3
7	IAIN Kendari	3
8	UIN Syarif Hidayatullah	2
9	UIN Maulana Malik Ibrahim	2
10	Universitas Sebelas Maret	2
11	Universitas Darussalam Gontor	2
12	UIN Raden Intan Lampung	2
13	Universitas Negeri Semarang	2

Figure 5 shows the top Indonesian writers who contributed to the study of physics in the Qur'an. While picture 6 shows their collaboration. It was stated that Adiwijaya, Darmalaksana, Maylawati, Qodim, Azmi, Suryana, Utomo, Mubarok, and Ramdhani were the most prolific writers in this research in 2016-2020. In this case, Adiwijaya ranks first with seven documents.
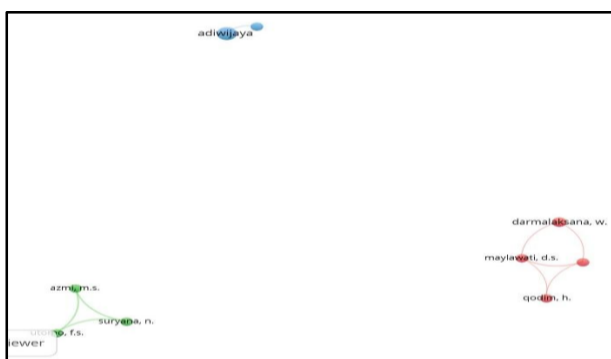

Figure 6 Collaboration of top Indonesian authors on research of physics studies in the Qur'an (2016-2020).
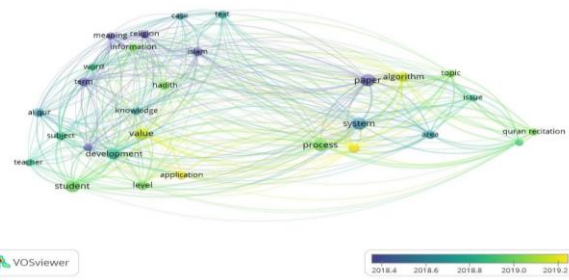

Figure 7 Visualization of physics study research in the Qur'an (2016-2020).

3.6. Visualization of Research Trends on Physics Study in The Qur'an

A total of 128 documents related to physics studies in the Scopus indexed Qur'an were visualised through the VoSViewer software that was useful to find the novelty of the research, the relevance of the topic, and the influence of the research results.

Figure 7 shows a visualization of research on the study of physics in the Qur'an 2016-2020. Researchers in the world produced two clusters. Cluster 1 in green consists of text, cases, understanding, religion, information, Islam, words, terms, hadith, Al-Qur'an, knowledge, subjects, development, values, teachers, students, levels, and applications. While the red cluster 2 consists of topics, algorithms, papers, issues, systems, processes, areas, case studies, implementation, and Qur'an recitation.

Figure 8 a shows the relationship between the Qur'an and the teacher where there is a system and process when the teacher teaches it to students to gain knowledge. In addition, there is development and application. In the current era, teachers are required to maximize existing applications related to learning related to the Qur'an.
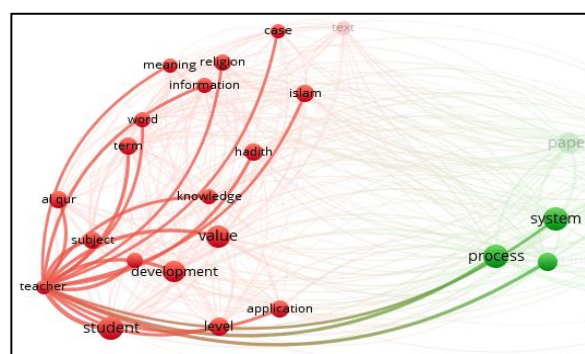

Figure 8a Teacher as the central variable on physics studies of the Qur'an.
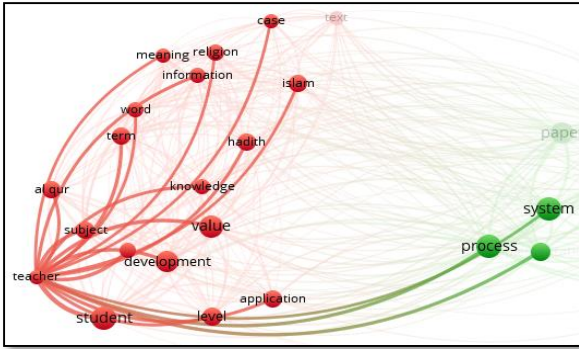
Figure 8b Student as the central variable on physics studies of the Qur'an.

While Figure 8 b shows the relationship between the Qur'an and students where there is a case study. In learning, the teacher usually provides case studies to understand the material provided more efficiently. In addition, the same as Figure 8, there is development and application.

4. CONCLUSION

Several essential points related to research trends in physics studies in the Qur'an in 2016-2020 have been analysed using bibliometrics. The number of publications in 2016-2019 increased dramatically. However, after 2019 there was a decline in 2020. Conference papers dominated the document sources related to this topic by mostly using English. Indonesia is the first country to publish the most research on this topic, where Adiwijaya is the most prolific writer from Indonesia who publishes seven documents. The Journal of Physics Conference was the journal that contributed the most to the research, with 47 documents. Most Indonesian universities researching physics studies in the Qur'an are UIN Sunan Gunung Djati Bandung. However, the most dominating research in this research comes from public universities, while Islamic universities only number 4. Visualization of research trends in physics studies in the Qur'an in 2016-2020 there is two clusters of which are: (1) sources of information on physics studies in the Qur'an and (2) implementation of the study of physics in the Qur'an. The results of this study can help related researchers recognize research trends in the study of physics in the Qur'an in the world and provide direction for further research.

AUTHORS' CONTRIBUTIONS

Alisa Arrizkiyah: Data curation, data visualization, method and drafting manuscript, final manuscript. Selsy Florensia Alfany: data curation, data visualization, and editing of manuscript. Nadi Suprapto: review and editing of manuscript, conceptualization. Utama Alan Deta: review and editing of manuscript.

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