

A Scientometric Analysis of Zakat Literature Published in times of COVID-19 Pandemic

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ABSTRACT

This scientometric study investigates the development of trends from various studies on the role of zakat in the COVID-19 pandemic published by journals equipped with a digital-object-identifier. The analysis is focused on descriptions of the characteristics and trends of keywords, authors, journals and citations. The data analyzed were 32 Digital Object Identifier-equipped publications indexed by Google Scholar. The search used to determine the research dataset was last updated on March 16, 2021. The data was then processed and analyzed using the VOSviewer application program to select the bibliometric mapping of research developments on the role of zakat in the COVID-19 pandemic. The results showed that the visualization of the mapping of research developments in this theme was divided into 4 clusters. Cluster 1 consists of 17 topics, cluster 2 consists of 17 topics, cluster 3 consists of 16 topics and cluster 4 consists of 8 topics. The most popular authors in this bibliometric study are Dzarfan Abdul Kadir, then Margaret Adamek. Then the most popular journals are the Journal of Islamic Accounting and Business Research and the International Conference of Zakat (ICONZ) Proceeding. Most citations are occupied by papers written by Bin-Nashwan (2020).

Keywords: COVID-19; Zakat; Scientometric

INTRODUCTION

The COVID-19 pandemic harms various sectors, one of which is the economy. This situation certainly raises many parties who need help (Safitri & Huda, 2020). In the country's context, assistance is necessary to prevent, treat, research, and vaccinate the COVID-19. Besides, assistance also needed in the economic sector is in the form of empowerment of affected communities due to weak global economic growth due to COVID-19 (Anshory et al., 2020).

Handling the impact of COVID-19 certainly requires a lot of money. For this reason, the government needs alternative sources of funding, especially those based on social funds (Ninglasari & Muhammad, 2021).

Islamic economics and finance can play a role through its financial instrument, namely Zakat, which is expected to help people by providing social funds in this COVID-19 pandemic situation. Zakat itself is a payment obligation in Islam which is the third of the five pillars of Islam. This instrument requires the payment of an annual tax of 2.5% on the productive wealth of a Muslim who has reached the *nishab* (certain threshold) and *haul* (one year) (Hudaefi & Beik, 2021).

The basis of Islamic law on zakat shows the relevance of using zakat to help recover from the impact of COVID-19. In the Alquran letter At Taubah verse 60, it is stated that there are eight zakat recipients, including the poor and needy, whose numbers are increasing during the pandemic. They

can be the primary target recipients of zakat benefits for COVID-19 assistance (Hudaefi et al., 2021). In addition, the allocation of zakat funds can also be developed for public facilities that can be utilized by the community (Hudaefi et al., 2020).

The development of technology, especially fintech, is one form of innovation that can be optimized to facilitate the collection of Zakat (Nailah & Rusydiana, 2020). Several zakat institutions have made innovations in developing online platforms with mobile-based applications, one of which is the zakat institution in Indonesia, namely BAZNAS (Hudaefi et al., 2019). BAZNAS collaborates with fintech companies for payment services and issues a quick response (QR) code, which aims to facilitate zakat collection, especially during the COVID-19 pandemic. This shows that zakat institutions have an important role in dealing with socio-economic problems, including during the COVID-19 pandemic (Hudaefi & Beik, 2021).

If Islamic financial instruments like this are used effectively and efficiently, Muslim countries can help people fulfil their basic needs (Syed et al., 2020). Several studies have proven that zakat for handling COVID-19 follows sharia regulations, where zakat funds distributed during this pandemic help middle and lower communities affected by the economy (Kadir et al., 2020).

There are 32 scientific research papers published by scholarly journals in the observation period of the last year since the emergence of the COVID-19 pandemic until writing this paper in March 2020, which discusses the role of zakat in the COVID-19 pandemic. A paper with this theme is interesting to discuss to see how the trend of the role

of zakat in dealing with the impact of the COVID-19 pandemic in various published scientific studies.

This research is the first bibliometric study to review 32 papers with the theme of the role of zakat in dealing with the impact of the COVID-19 pandemic to provide a graphic visualization of trends in scientific literature. The limitation of this research is that only articles equipped with a digital-object-identifier and indexed in Google Scholar are the object of study.

This research is structured as follows. The second part reviews, in general, the research method, namely the bibliometric method. The third part presents and reports the results of the bibliometric mapping visualization consisting of keyword trends, authors, published journals, to citation papers on the theme of the role of zakat in the COVID-19 pandemic. The fourth part is the closing remarks, which contains a summary of the main discussion and conclusions.

METHOD

Bibliometric mapping is an important research topic in the bibliometric field (Börner et al., 2003). Two different bibliometric aspects are the construction of the bibliometric map and the graphical representation of the map. In the bibliometric literature, the most significant concern is the construction of the bibliometric map. Research related to the effects of differences in similarity measures (Ahlgren et al., 2003; Klavans & Boyack, 2006; Van Eck & Waltman, 2009), and they tested with different mapping techniques (Boyack et al., 2005; Van Eck & Waltman, 2007; White, 2003). The graphic representation of the bibliometric map has received less

attention. Although some researchers seriously study issues related to graphical representation (Chen, 2003; Skupin, 2004), most articles published in the bibliometric literature rely on simple graphical representations provided by computer programs such as SPSS and Pajek.

For thumbnails containing no more than 100 items, a simple graphical representation usually yields satisfactory results. However, there appears to be a trend towards larger maps, and for such maps, a simple graphical representation is inadequate. The graphical representation of a large bibliometric map can be further improved by, for example, a zoom function, special labelling algorithms, and density metaphors. Such functionality is not included in the computer programs commonly used by bibliometric researchers. In this paper, we introduce a new computer program for bibliometric mapping. This program pays special attention to the graphical representation of bibliometric maps.

This section discusses the use of VOS, which is to build a bibliometric map. The purpose of VOS is to place items in such a low dimension that the distance between two items accurately reflects the uniformity or association of the items. For each pair of items i and j , VOS requires a similarity input s_{ij} ($s_{ij} \geq 0$). VOS treats the equation s_{ij} as a measure on a ratio scale. The equation s_{ij} is usually calculated using the power of association defined in Equation 1. VOS determines the location of the item on the map by minimizing

$$V(x_1, \dots, x_n) = \sum_{i < j} s_{ij} \|x_i - x_j\|^2 \quad (1)$$

to:

$$\frac{2}{n(n-1)} \sum_{i < j} \|x_i - x_j\| = 1 \quad (2)$$

Therefore, the idea of VOS is to minimize the weighted sum of the squares of the distance between all pairs of items. The equation between those items weights the square of the distance between pairs of objects. To avoid worthless solutions, where all items have the same location, a limit is imposed so that the average distance between two items must be equal to one.

Two computer programs have implemented the VOS mapping technique. Both are available free of charge. A simple open-source program is available at www.neesjanvaneck.nl/vos/, and a more advanced program called VOSviewer (Van Eck et al., 2010) is available at www.vosviewer.com. Both programs use the variant of the SMACOF algorithm mentioned above to minimize Equation 1 to Equation 2.

This research uses paper publication data equipped with a Digital-Object-Identifier (DOI) sourced from various Google Scholar indexed journals with keywords, namely analysis on the theme of the role of zakat in the COVID-19 pandemic. Collecting data through tracing papers in the past year since the emergence of the COVID-19 pandemic until March 16, 2021. From the search results, 32 published articles were obtained. Data on the development trend of the theme publication The role of zakat in the COVID-19 pandemic were analyzed using the VOSViewer software.

The computer program that was introduced was called VOSviewer. VOSviewer is a program developed for building and viewing bibliometric maps. This program is freely available to the bibliometric research community (see www.vosviewer.com). VOSviewer can be used to create author maps or

journals based on cocitation data or to build keyword maps based on shared incident data. The program offers a viewer that allows the bibliometric map to be examined in detail.

VOSviewer can display maps in a variety of ways, each emphasizing a different aspect of the map. It has functions for zooming, scrolling, and searching, which facilitate detailed inspection of the map. The viewability by VOSviewer is especially useful for maps containing at least a large number of items (e.g. 100 items). Most computer programs used for bibliometric mapping do not satisfactorily display such maps.

To build maps, VOSviewer uses the VOS mapping technique, where VOS stands for similarity visualization. For previous studies where the VOS mapping technique was used. VOSviewer can display maps built using suitable mapping techniques. Therefore, this program can be used to display maps built using the VOS mapping technique and display maps built using techniques such as multidimensional scaling. VOSviewer runs on many hardware and operating system platforms and can be started directly from the internet.

RESULTS

This section explains the number of published papers on the theme of the role of zakat in the COVID-19 pandemic until March 16, 2021. However, this is because 2021 has not been completed until December 2021, the number of papers is still possible to

increase and increase, the data collection of papers studied in this study is until March 2021. Indonesia and Malaysia become the most studied object countries in the published papers reviewed in this bibliometric study.

Bibliographic Graphic Analysis

This section will present a graphic visual mapping of the publication of a paper on the role of zakat in the COVID-19 pandemic. The results of the keyword mapping analysis form the basis for the co-occurrence mapping of important or unique terms contained in a particular article. Mapping is a process that allows a person to recognize elements of knowledge and their configuration, dynamics, interdependencies, and interactions.

Related to bibliometrics, scientific mapping is a method of visualizing a field of science. This visualization is done by creating a landscape map that can display topics from science. The visualization of the co-word map network publication of the theme paper the role of zakat in the COVID-19 pandemic can be seen in Figure 1.

In Figure 1, several keywords that often appear in papers on the theme of the role of zakat in the COVID-19 pandemic in the past year are displayed and their relation to other keywords in 4 clusters, namely:

- Cluster 1 in red consists of 17 keywords, namely *adverse impact, attention, business, context, factor, intention, knowledge, life, literature, Muslim community, policymaker, previous study, primary data, program, sample, square, zakat distribution*.

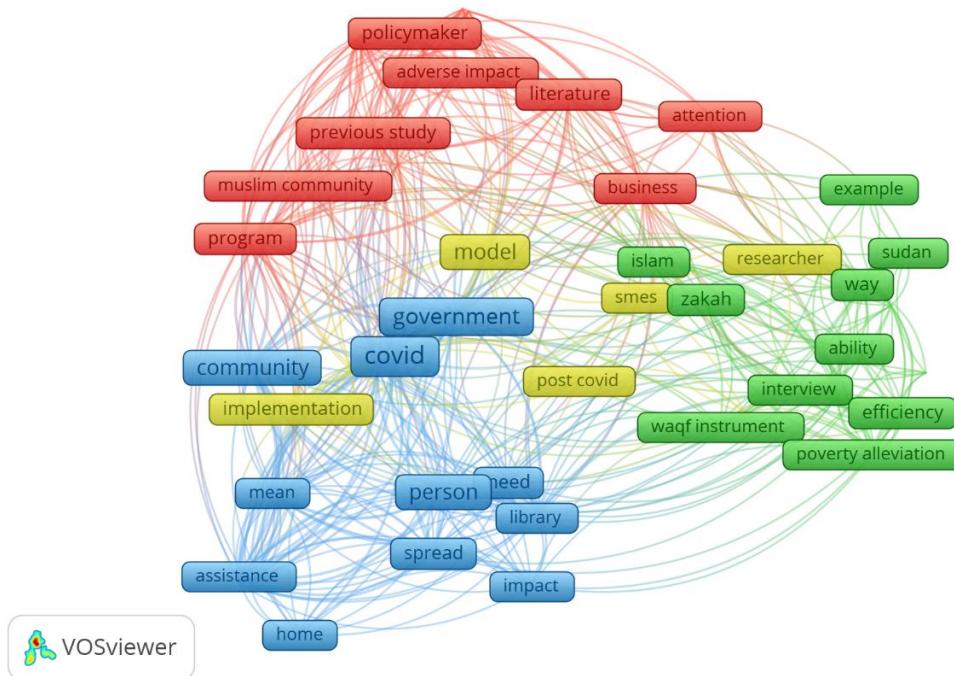


Figure 1. Bibliometric Keyword Mapping

- Cluster 2 in green consists of 17 keywords, namely *ability, creation, efficiency, example, interview, Islam, issue, Muslim society, poverty alleviation, provision, secondary source, source, Sudan, waqf instrument, way, zakah, zakat fund*.
- Cluster 3 in blue consists of 16 keywords, namely *assistance, beginning, community, coronavirus, covid, government, home, impact, library, mean, means, nature, need, pandemic, person, spread*.
- Cluster 4 in yellow consists of 8 keywords, namely *implementation, literature review, model, period, post, post covid, researcher, SMEs*.

The keywords that are divided into the 4 clusters above are arranged in the form of a colored circle indicating the clusters, this data can be used to determine the keyword trend in the last

year. Bibliometric analysis shows several keywords that are widely used in the paper which is the object of study. The keywords that appear the most are indicated by the larger the circle. Meanwhile, the line relation between keywords shows how much it is related to other keywords.

The keywords that are divided into four clusters above are arranged in colored circles that indicate groupings of appearances in the scientific literature. This bibliometric data can be used to determine the development of keyword trends in the theme of the role of zakat in the COVID-19 pandemic over the past year. The bibliometric analysis shows several keywords that are widely used in the paper which is the object of research. The more keywords that appear, the wider the circle indication is shown. Meanwhile, the line relationship between keywords shows how much they are related to other keywords.

Based on the picture above, it can be concluded that the role of zakat in the COVID-19 pandemic is very broad in various sectors. In cluster 1 in red, keywords appear related to matters affected by COVID-19 such as 'adverse impact', 'business' and even 'Muslim community', this data, if you pay attention, shows that the COVID-19 phenomenon has an impact not only on the economy and conventional business but also specifically against Islamic economics. The emergence of keywords in bibliometrics also shows that this link has been widely discussed in this year's research and has had a significant impact on the economy. Suar et al. (2020) state that COVID-19 is a socio-economic problem that needs attention from all levels of society and individuals because the disruption of the country's economic stability also affects the economic welfare of the community.

In green cluster 2, the words 'zakat', 'waqf instrument' and 'poverty alleviation' appear which indicate that there are studies that examine solutions and see opportunities in solving this pandemic problem from an Islamic point of view, one of which is by utilizing the Zakat instrument. This instrument is expected to help economic recovery (Faturohman et al., 2021). As stated by Saputra (2020) in his research, zakat can be understood as an inseparable unit to create social welfare and can minimize the gap between the rich and the poor by increasing economic growth at the individual level which will accumulate at the community level, including during this time of the COVID-19 pandemic.

Furthermore, cluster 3 in blue raises the main keywords in scientific studies from all the papers that are the object of research, for example, there are the keywords 'Covid', 'government',

'community', 'impact', 'need', 'assistance'. This section proves that many parties are involved in making efforts to minimize the impact of COVID-19 on the economy, even some studies such as those written by Moertiono (2021) carry the idea that every element, institution and community related to the development and management of zakat must cooperate with the government to formulate directions and targets in the management of zakat.

The last cluster, cluster 4 in yellow, shows several variables that are widely used as research objects, for example 'post-COVID and 'SMEs'. This is because the use of productive zakat with a community empowerment scheme has enormous potential in restoring the community's economy, especially MSME players after the completion of the COVID-19 pandemic. Ferdaus et al. (2020) initiated a productive zakat-based business incubator model as an effort to restore the economy of micro, small and medium enterprises (MSMEs) that were affected by the pandemic.

Furthermore, using the VOSViewer software, we found the bibliometric mapping of the authors as in Figure 2. The bigger the circle the author's name shows, the more papers he has published in the paper on the theme of the role of zakat in the COVID-19 pandemic in the past year.

The cluster density view, is the item (label) that is marked the same as the visible item. Each item dot has a color depending on the density of the item at that time. This identifies that the color of the points on the map depends on the number of items associated with other items. This section is very useful for obtaining an overview of the general structure of the bibliometric map by

paying attention to which parts of the items are considered important to be analyzed. Through this worksheet, we

can interpret the authors who have written the most publications.

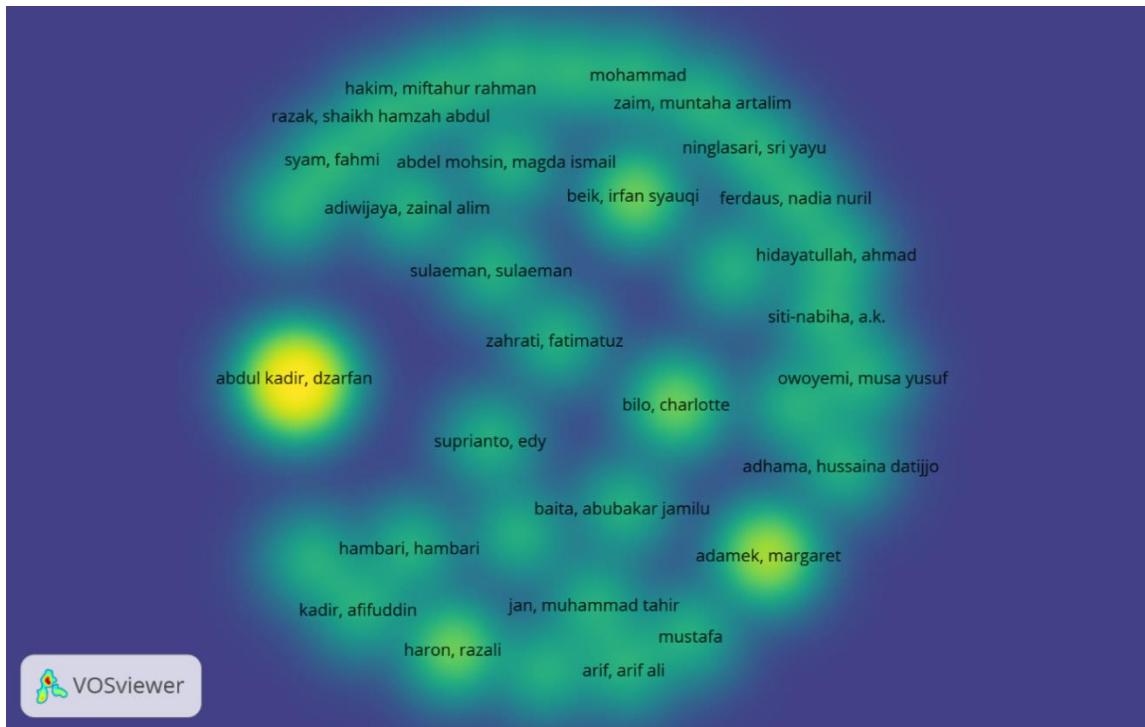


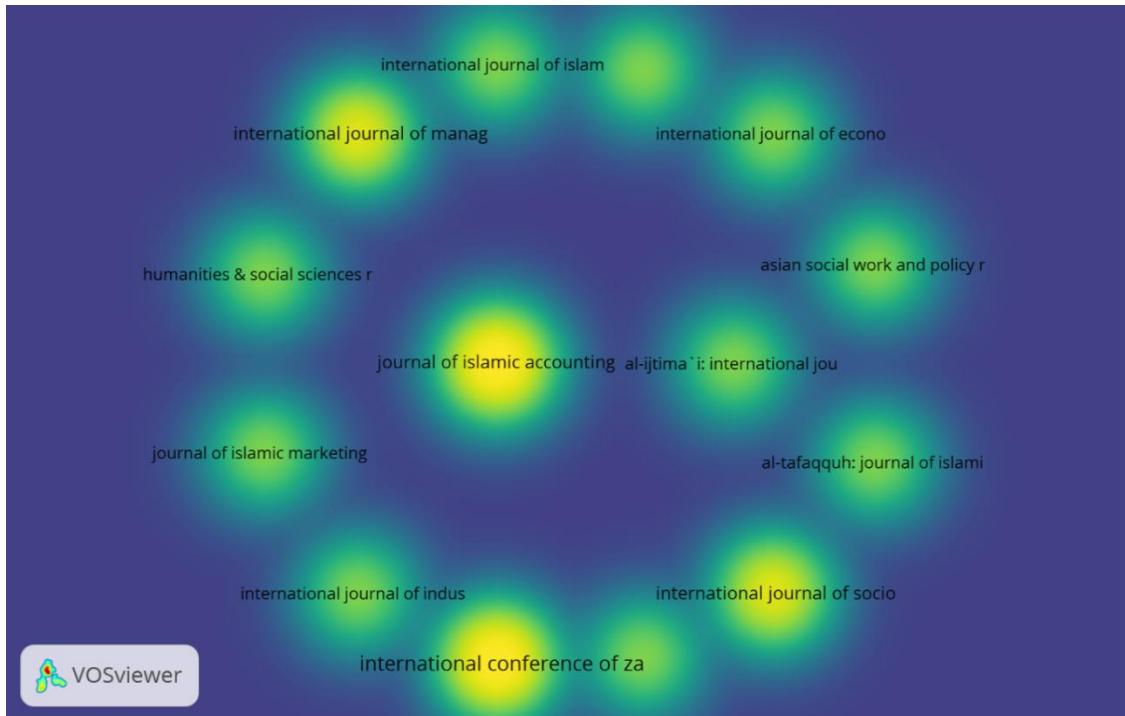
Figure 2. Bibliometric Author Mapping

Based on these results, a density map is displayed which is the result of an analysis using all published articles on the theme paper the role of zakat in the COVID-19 pandemic, both related and unrelated. There are many clusters sorted by author (indicated by colored circles).

In general, every researcher has a different tendency. Some writings are indexed as a single author, others co-author with other researchers so that several clusters appear which are indicated with different levels of density, represented by yellow light. However, authors whose densities are large enough show that they publish more research on the role of zakat in the COVID-19 pandemic compared to authors with lower densities so that

these results can be used as a reference for future researchers who will research in determining which authors are the most Many wrote works on this theme to be selected as the main reference.

Based on these results, a density map is displayed which is the result of software analysis of all published articles with the theme of the role of zakat in the COVID-19 pandemic, both related and unrelated. There are many clusters sorted according to the author. The most popular writer in conducting research and publishing his writings on the theme of the role of zakat in the COVID-19 pandemic based on bibliometric mapping is Dzarfan Abdul Kadir. Followed by Margaret Adamek, Irfan Syauqi Beik, Charlotte Bilo and Razali Haron.

Figure 3. Bibliometric Journal Mapping

Furthermore, the journal mapping visualization is depicted in the bibliometric Figure 3 above. Based on the following picture, the journal clusters that appear to be listed in a luminous circle show how productive the journal is in contributing to publishing its paper on the theme of the role of zakat in the COVID-19 pandemic. The largest number of journals is calculated from the number of published paper quantities and the number of links to other journals, where there is a possibility that a paper writer can write many papers in different journals so that what is calculated is the number of publications in each journal regardless of the number of authors.

The largest number of journals is determined by the number of publications and the number of links to other journals, where a paper writer can write many papers in different journals. The ranking of the most popular journals is shown by the software in the

bibliometric mapping results by looking at the density level of the journal. The density level itself is indicated by a yellow halo. The larger and wider the circle of light in a journal, the greater the level of density.

An interesting finding from the bibliometric visualization of the journal above is the dominance of research publications on the role of zakat in the COVID-19 pandemic only in Islamic economic journals, not many publications in general economic journals. The most popular journal in the first place is the Journal of Islamic Accounting and Business Research, second place is the International Conference of Zakat (ICONZ) Proceeding, third place is the International Journal of Sociology and Social Policy and fourth is the International Journal of Management and Applied Research.

However, this limitation can certainly be an opportunity for researchers to continue to develop their research more deeply and try to send their work to various international

journals that discuss economics in general, as well as journals that discuss specific economic themes, for example, journals that focus on social finance discussions.

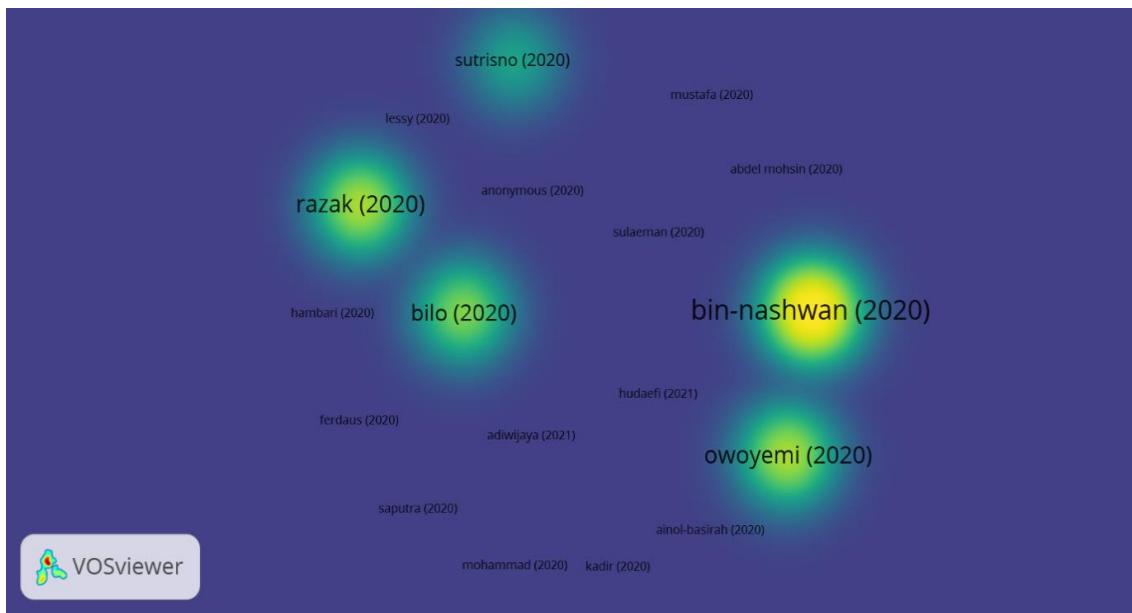


Figure 4. Bibliometric Citation Mapping

The results of data processing show that the most citation mapping is in the paper on the theme of the role of zakat in the COVID-19 pandemic. The results of the VOSViewer analysis show that the most cited paper in the first rank is Bin-Nashwan et al. (2020) which writes about Zakat compliance (Zakah Compliance). His research shows the compatibility between the approach to economic factors in the context of zakat compliance in developing countries. The results of his research also prove that there is a significant positive relationship between religiosity and compliance with zakat, while law enforcement does not affect obedience behavior.

In the second place, the citation paper was occupied by Razak (2020) and Owoyemi (2020). Razak discussed Islamic social funds, especially zakat

and waqf as Islamic financial instruments that have an important and efficient role in poverty alleviation and the application of inclusive finance in Islamic societies. As for Owoyemi, he examines the relationship between zakat management and the crisis of trust in the ability of the state and zakat institutions to distribute zakat to zakat recipients. The study concluded that although it's ideal is to give zakat to the state or zakat institutions, it is permissible for the community to give zakat directly to zakat recipients, especially if there is a problem of trust in the state or existing zakat institutions.

The third rank of the top paper citation is Bilo & Machado (2020) which examines the role of Zakat in providing social protection with the study object countries, namely Jordan and Sudan. They tried to assess the

various zakat modalities in the two countries. Their results indicate that the methods of collecting and managing Zakat used to fund social protection vary considerably. This is also influenced by the geographical and political conditions of the country. As in Sudan, Zakat is an obligation and reaches more people than in Jordan, so the provision of social protection in the two countries is also different.

CONCLUSION

The doctrines of zakat in Islam introduced the first system of social security and welfare, but in practice, zakat has been provided a marginal position in our society. This paper has assessed the dynamic application of zakat employed by Iba Housing Estate Zakat Agency since its inception. Despite the beautiful teachings of Islam, which address poverty alleviation, the efforts of Muslims in Iba Housing Estate in this regard, leave less to be desired. A study on their administration of zakat indicates that, it has limited sources of zakat revenue, even though it is situated amidst pensioners as well as low income earners, but the fact that they are force to be reckoned with in the community, necessitated the aptness of this study.

The focus of this research is to try to find out the development of the theme of the role of zakat in the COVID-19 pandemic in the scientific literature. The results show that there have been quite many published papers on this theme in the last few months since the end of 2019, and as of March 2021, there have been more than 30 published studies.

The bibliometric mapping visualization shows that the map of research developments in the field of

the role of zakat in the COVID-19 pandemic is divided into 4 clusters. Cluster 1 consists of 17 topics, cluster 2 consists of 17 topics, cluster 3 consists of 16 topics and cluster 4 consists of 8 topics, with the most popular keywords ranging from things affected by COVID-19 such as 'adverse impact', 'business', 'Muslim community', then the solution of Islamic financial instruments, namely 'zakat', 'waqf instrument', 'poverty alleviation', then those who play roles such as 'government', 'community', 'assistance', and other fields widely studied, namely 'post-COVID' and 'SMES'.

The most popular authors in the results of this bibliometric study are Dzarfan Abdul Kadir, then Margaret Adamek. Then the most popular journals are the *Journal of Islamic Accounting and Business Research* and the *International Conference of Zakat (ICONZ) Proceeding*. Most citations were occupied by papers written by Bin-Nashwan (2020).

This research is a basic reference to see how a graphical visualization of the development of research trends with the theme of the role of zakat in the COVID-19 pandemic in published scientific research, so that it can still be developed by experts. Further research recommendations can refer to the most popular keywords which still have the opportunity to be discussed more deeply, for example regarding innovations that can be developed in optimizing the role of zakat during economic recovery and public health. Stakeholders such as zakat institutions and regulators can continue to develop strategies in maximizing the potential for broader, more effective and efficient zakat collection and distribution. Digital campaigns, collaboration with financial technology and utilizing technology

development can be priorities in this era of the COVID-19 pandemic.

It should be noted that the purpose of this study is to present an overview of the research trends on the theme of the role of zakat in the COVID-19 pandemic, but the limitation is only in the last year. Although research has been carried out using specific bibliometric indicators so that readers obtain a general representation of the most significant data, the results presented are still dynamic and may change over time with emerging trends.

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