

Bibliometric Analysis of Scopus-Indexed Waqf Studies

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This study aims to determine the development map of waqf research that is indexed by Scopus. The research was conducted in November 2019 by searching through the Scopus database with the keyword "waqf". The data analyzed were 104 publications of Scopus indexed waqf research publications. The development map of waqf research is obtained through the export process into the .txt file format. The export data is then processed and analyzed using the VOSviewer application program to find out the bibliometric map of the development of waqf research that is indexed by Scopus. The results showed that the number of publications on the development of waqf research indexed Scopus from 2010-2019 experienced a significant increase and the most were published in ISRA International Journal of Islamic Finance. Network visualization showed that the map of the development of waqf research was divided into 5 clusters. Cluster 1 consists of 10 topics, cluster 2 consists of 10 topics, cluster 3 consists of 5 topics, cluster 4 consists of 5 topics, and cluster 5 consists of 3 topics. The author who published the most research results in the field of waqf was Hidayatul Ihsan. In addition, the largest contributor to the publication of waqf research that indexed by Scopus is the Faculty of Economics and Muamalat Universiti Islam Malaysia, Institute of Islamic Banking and Finance, International Islamic University Malaysia.

Keywords: Waqf; Bibliometric; Scopus

OPEN ACCESS

ISSN 2715-6346 (Online)

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Received: 17 September 2019

Accepted: 11 October 2019

Published: 30 December 2019

Citation:
(2019) Bibliometric Analysis of
Scopus-Indexed Waqf Studies.
Ekonomi Islam Indonesia. 1:1.

INTRODUCTION

Poverty is a condition of life that is completely deprived by a person or household so that he is unable to meet the minimum or proper needs for life. The minimum basic needs referred to are those related to the needs for clothing, food, shelter, and also the social needs required by each population so that their needs are properly met. According to World Bank data, in 2015 as many as 736 million people or about 10 percent of the world's population lived in conditions of income below US \$ 1.90 per day. Meanwhile, nearly 1.1 billion people are in conditions of extreme poverty. There were 143 million orphans under the age of 18 living in 93 developing countries (Muhammad, 2010).

Efforts to alleviate poverty are now being carried out by each country so that the population of that country is free from the bonds of poverty. However, these efforts are not only dependent on the government. Intervention of various parties and also instruments that have the potential to reduce poverty is also needed so that the problem of poverty in the world can be overcome. Waqf as one of the Islamic social financial instruments is considered to be one way. According to Shaikh et al. (2017), waqf is an important element in the Islamic social framework. Waqf can utilize the potential of selective charitable donations in an effective way to generate better economic impact in the social segment of society.

The development of the world of waqf certainly goes hand in hand with the development of research on waqf. Research related to waqf indexed by Scopus has been around since 2010 with a total of 104 published articles. This means that the development of research on waqf in the world has entered the age of almost a decade. Therefore, it is necessary to discuss the development of research related to waqf. This study aims to determine the map of the development of research related to endowments indexed by Scopus using the VOSviewer software. This analysis is called bibliometric analysis. In addition, before the bibliometric analysis was carried out, these publications related to endowments indexed by Scopus were analyzed based on text mining, namely Meta Analysis. Matters presented in the meta-analysis are related to the year of publication, country case studies, methodological approaches, and methods used by each Scopus indexed publication paper related to waqf.

LITERATURE REVIEW

Bibliometric mapping is an important research topic in the bibliometric field. Two distinguishable bibliometric aspects are the construction of the bibliometric map and the graphical representation of the map. In the bibliometric literature, the greatest concern is in the construction of the bibliometric map. Research

related to the effects of differences in similarity measures and they tested with different mapping techniques (Van Eck & Waltman 2007b). The graphic representation of the bibliometric map has received less attention. Although some researchers seriously study issues related to graphical representations, 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, say, 100 items, a simple graphical representation usually yields satisfactory results. However, there appears to be a trend toward larger maps and for such maps simple graphic representation is not adequate. The graphical representation of a large bibliometric map can be further improved by, for example, a zoom function, special labeling 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 the 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 strength of the association defined in Equation 1 (Van Eck & Waltman, 2007b). VOS determines the location of items in the map by minimizing

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

becomes:

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

Therefore, the idea of VOS is to minimize the weighted sum of the squares of the distance between all pairs of items. The square of the distance between pairs of items is weighted by the equation between those items. 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.

There are two computer programs that 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 & Waltman, 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.

RESEARCH METHOD

This research uses international publication data in the field of waqf sourced from the Scopus database (www.scopus.com). The data was collected through searches for publications on Scopus with the keyword waqf with the categories article title, abstract, keywords in the period 2010 - 2019. From the search results, there were 104 published articles. Data in the form of year of publication, location of research country, methodological approach and methods used by each published article were analyzed using Microsoft Excel 2010. Meanwhile, trends in the development of waqf publications were analyzed using VOSViewer software.

The computer program that we are introducing is called VOSviewer. VOSviewer is a program we developed to build and view bibliometric maps. This program is freely available to the bibliometric research community (see www.vosviewer.com). VOSviewer for example 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. VOSviewer's display capability is especially useful for maps containing at least a large number of items (e.g., at least 100 items). Most computer programs used for bibliometric mapping do not display such maps in a satisfactory manner.

To build maps, VOSviewer uses the VOS mapping technique (Van Eck & Waltman 2007a), where VOS stands for similarity visualization. For previous studies where the VOS mapping technique was used, we refer to Van Eck & Waltman (2007b). VOSviewer can display maps built using suitable mapping techniques. Therefore, this program can be used not only to display maps built using the VOS mapping technique but also to display maps built using techniques such as multidimensional scaling. VOSviewer runs on a large number of hardware and operating system platforms and can be started directly from the internet.

RESULT AND DISCUSSION

This study reviewed 104 studies with publications from 2010 to 2019. During that period, the most research on waqf indexed by Scopus occurred in two consecutive years, 2017 to 2018. The number of papers published in that period was consecutively, namely 23 and 43. At the beginning of the emergence of Scopus indexed papers regarding waqf, from 2010 to 2014, only 1 to a maximum of 4 papers were published en masse.

From 2015 to 2018 there was an increase in the number of Scopus indexed papers regarding waqf. However, in 2019 there were only 7 papers indexed by Scopus related to waqf (Table 1). This means that there is a significant decrease in the number of Scopus indexed papers regarding waqf.

Table 1. Classification of Publication Based on the Year of Issuance

No.	Year of Publication	Number of Papers
1	2019	7
2	2018	43
3	2017	23
4	2016	7
5	2015	13
6	2014	2
7	2013	3
8	2012	1
9	2011	4
10	2010	1

In addition, the papers reviewed were also classified based on the study location. In 104 papers, the most research on waqf indexed by Scopus was conducted in Malaysia, with 64 papers and the second largest in Indonesia with 8 papers. Other waqf research took study locations in Bangladesh, India, and Singapore with the number of papers consecutively, namely 5, 4, and 3. Location of research studies in Nigeria, USA, UK, and Australian each contained 2 papers (Table 2).

Table 2. Classification of Publications based on Country Studies

No.	Country	Number of Papers
1	Malaysia	64
2	Indonesia	8
3	Bangladesh	5
4	India	4
5	Singapore	3
6	Nigeria	2
7	USA	2
8	UK	2
9	Australia	2
10	Turkey	1
11	New Zealand	1
12	Zanzibar	1
13	Thailand	1
14	Qatar	1
15	Japan	1
16	Phillippine	1
17	Pakistan	1

18	Saudi Arabia	1
19	Israel	1
20	Lebanon	1
21	Yemen	1
22	Southeast Asian Country	1
23	Asia	1

The paper classification based on the methodological approach is shown in Figure 1. Based on the 104 reviewed papers, the papers are divided into two categories, namely the quantitative approach and the qualitative approach. Papers that use a quantitative methodological approach are 10 or 9%. Meanwhile, those who used a qualitative methodological approach were 94 or 91%. Research related to waqf is dominated by a qualitative approach. In this study, there are several papers that use two methodological approaches at once, namely a quantitative approach and a qualitative approach.

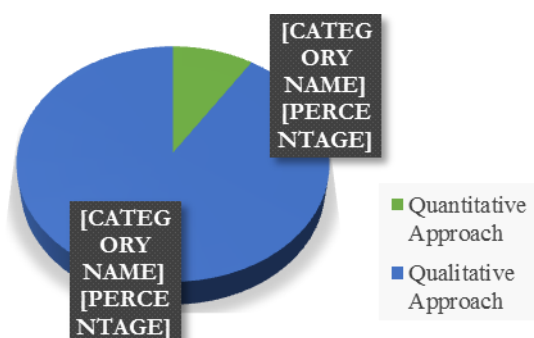


Figure 1. Classification of Publications Based on a Methodological Approach

The paper classification based on the method used in the analysis is shown in Figure 3. Based on the 104 papers reviewed, the most widely used method was descriptive analysis of 53 papers. Descriptive method is a method with a qualitative approach. Research related to waqf uses more descriptive methods because there is still little quantitative data available. Most of the papers obtain data from interviews with waqf experts or practitioners so that they are then put in the form of a narrative or description. Another method used in the Scopus indexed waqf research is a case study of 14 papers, a literature study of 10 papers, 8 papers of archival documentation review and analysis, 6 paper conceptual studies and content analysis, 7 SEM papers, and so on.

Table 3. Classification of Publications Based on the Method of Analysis

Method of Analysis		Total
No.	Methodology	
1	Descriptive	53
2	Case study	14

3	Literature study	10
4	Archival documentation review and analysis	8
5	Conceptual study	6
6	Content analysis	6
7	Structure Equation Modelling (SEM)	7
8	Constructivist paradigm	3
9	Narrative approach	1
10	System dynamic methodology	1
11	Theory of Reasoned Action (TRA)	1
12	Inferensia statistic	1
13	Principal Component Analysis (CPA)	1
14	Regression (logistic, multiple, PLS)	4
15	Thematic analysis	1
16	Policy-centred approach	1
17	Analytic Network Process (ANP)	1
19	Analytic Hierarchy Process (AHP)	1
20	Hybrid analysis	1

Co-word Map Network Visualization

From the search results of the Scopus database, as many as 104 documents were then exported to .txt format, inputted and analyzed with VOSViewer, the following results were obtained. The results of the co-word map analysis of these keywords form the basis for the co-occurrence mapping of important or unique terms contained in certain articles. Mapping is a process that allows a person to recognize elements of knowledge and their configuration, dynamics, interdependencies, and interactions. Knowledge mapping is used for technology management purposes, which includes the definition of research programs, decisions related to technology activities, the design of knowledge base structures, and the creation of education and training programs. Related to bibliometrics, science 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 (Royani, et al., 2013). The results of the visualization of the co-word map network of waqf research can be seen in Figure 2.

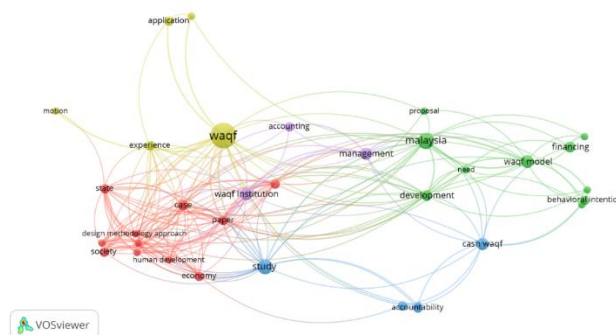


Figure 2 Visualization of the co-word map network of the development of waqf research

Figure 2 shows that the map of the development of waqf research is divided into 5 clusters as follows. Cluster 1 in red consists of 10 topics, namely Muslim community, case, paper, state, design methodology approach, originality value, policy maker, resource, society, human development, and economy. Cluster 2 in green consists of 10 topics, namely Malaysia, proposals, development, factors, needs, waqf models, financing, behavioral intention, cwm, and micro enterprise.

Cluster 3 in blue consists of 5 topics, namely accountability, cash waqf, endowment, Indonesia, and study. The yellow cluster 4 consists of 5 topics, namely waqf, experience, application, motion, and proposed models. Cluster 5 colored purple consists of 3 topics, namely waqf institution, accounting, and management.

Visualization of the Co-Authors Density Map

The cluster density view, is the item (label) which 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. Visualization of the density map of co-authors on the development of waqf research can be seen in Figure 3.

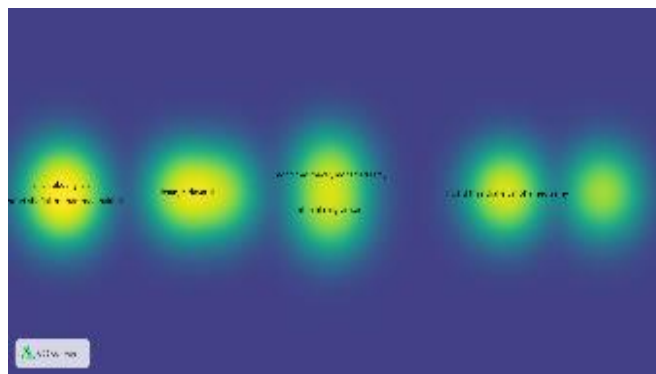


Figure 3. Visualization of the density map of the development co-author of waqf research

Figure 3 shows a density map which is the result of an analysis using all articles on the development of waqf research, both related and unrelated. There are 3 clusters if sorted by author. The authors who write the most publications related to waqf are Hidayatul Ihsan, Abdul Ghafar Ismail, Muhammad Hakimi, Mohd Shafiai, Nazrul Hazizi Noordin, Anwar Allah Pitchay, Mohamed Asmy bin Mohd Thas Thaker, and Mustafa Omar Mohammed.

Visualization of Co-Sources Map Overlay

The results of the visualization of the co-sources map overlay for the development of research on waqf are divided into 5 clusters as in Figure 4 below. Cluster 1 consists of three journals, namely Humanomics, International Journal of Islamic and Middle Eastern Finance and Management, and ISRA International Journal of Islamic Finance. Cluster 2 consists of one journal, namely the Global Journal Al Thaqafah. Cluster 3 consists of one journal, namely the Journal of King Abdulaziz University - Islamic Economics. Cluster 4 consists of one journal, namely the Management Journal. Cluster 5 consists of one journal, namely The Muslim World.



Figure 4. Visualization of the co-sources map overlay for the development of waqf research

Visualization of Network Map Co-Organizations

The results of the visualization of the network map of co-organizations on the development of research on waqf are divided into 2 clusters as in Figure 5 below. Cluster 1 consists of the Faculty of Economics and Muamalat Universiti Sains Islam Malaysia, the Institute of Islamic Banking and Finance International Islamic University Malaysia, and the International Center for Education in Islamic Finance. Cluster 2 consists of the Department of Economics, Faculty of Economics and Management Science, International Islamic University Malaysia.

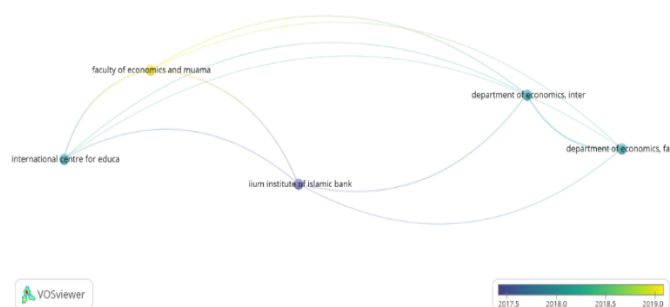


Figure 5. Visualization of the network map of the development of waqf research co-organizations

CONCLUSION

Based on the results and discussion, the following conclusions were obtained. The number of publications on the development of research results in the field of waqf indexed by Scopus from 2010-2019 has increased significantly. Network visualization shows that the map of the development of waqf research is divided into 5 clusters. Cluster 1 consists of 10 topics, cluster 2 consists of 10 topics, cluster 3 consists of 5 topics, cluster 4 consists of 5 topics, and cluster 5 consists of 3 topics. The author who publishes the most research results in the field of waqf indexed by Scopus is Hidayatul Ihsan.

The name of the publication that most publishes research results in the field of waqf indexed by Scopus is ISRA International Journal of Islamic Finance. The largest contributors to the publication of research results in the field of waqf indexed by Scopus are the Faculty of Economics and Muamalat Universiti Sains Islam Malaysia, Institute of Islamic Banking and Finance International Islamic University Malaysia.

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