



Trends of Halal Industry Research: A Bibliometric Analysis

Tren Penelitian Industri Halal: Analisis Bibliometrik

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ABSTRACT

The halal industry provides great opportunities for the provision of goods and services, both domestically and internationally, in the future. The halal industry is one of the topics discussed in several scientific forums. The aim of this research was to discuss the development of research trends in the halal industry over a period of 27 years. This research used bibliometric analysis methods to examine in more depth scientific works and literature that discuss the halal industry in order to study the concept and its development from year to year. Data was collected through searching for articles indexed by Scopus with the acquisition of 960 documents related to the halal industry published between 1997-2023. Data were analyzed using VOSviewer software into three categories, namely network visualization, overlay visualization, and density visualization. The findings show that publications regarding the halal industry have increased significantly. Halal industry research trends based on the author show that Ali, M.H. is the most productive author. The development of halal industry research trends based on keywords shows that halal is the most frequently used keyword, followed by the keywords halal industry, halal tourism, halal food, and Malaysia. Malaysia is the country that has contributed the most to halal industry research.

Keywords: Halal, Halal Industry, Bibliometric, Scopus

ABSTRAK

Industri halal memberikan peluang besar bagi penyediaan barang dan jasa, baik domestik maupun internasional, di masa depan. Industri halal menjadi salah satu topik yang dibahas di beberapa forum ilmiah. Tujuan dari penelitian ini adalah untuk membahas perkembangan tren penelitian pada industri halal dalam kurun waktu 27 tahun. Menggunakan metode analisis bibliometrik untuk mengkaji lebih mendalam karya-karya ilmiah dan literatur tentang industri halal guna mempelajari konsep serta perkembangannya. Data dikumpulkan melalui pencarian artikel yang terindeks oleh Scopus dengan perolehan sebanyak 960 dokumen yang diterbitkan antara tahun 1997-2023. Data dianalisis dengan menggunakan software VOSviewer ke dalam tiga kategori yaitu *network visualization*, *overlay visualization* dan *density visualization*. Hasil penelitian menunjukkan bahwa publikasi mengenai industri halal mengalami peningkatan yang signifikan. Tren penelitian industri halal berdasarkan penulis menunjukkan bahwa Ali, M.H. merupakan penulis yang paling produktif. Perkembangan tren penelitian industri halal berdasarkan kata kunci menunjukkan bahwa halal merupakan kata kunci yang paling banyak digunakan, diikuti kata kunci halal industri, halal tourisme, halal food, dan Malaysia. Malaysia merupakan negara yang paling banyak berkontribusi dalam penelitian industri halal.

Keywords: Halal, Industri Halal, Bibliometrik, Scopus

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I. INTRODUCTION

The halal industry is a market that has great potential in the future in the supply of goods and services both domestically and internationally (Husna et al., 2022). The concept of halal is related to the concept of "Toyyib" which means everything that is permissible in Islam and good for humans (Azam & Abdullah, 2020). The potential for this industry is not only developing in countries with a majority Muslim population, but also in minority countries. This Islamic lifestyle is not only related to the food product consumer sector, but also to the financial, travel, fashion, cosmetics, health, entertainment and even education sectors (Nadhifah & Adinugraha, 2020). Although the halal industry is receiving a lot of attention, businesses in Muslim nations have not yet been able to fully capitalize on this opportunity (Ismail et al., 2023).

Halal, which is defined as anything that is permitted or allowed under Sharia law, has become increasingly popular outside of Muslim-majority countries (Zaki et al., 2023). Halal is everything that is carried out by humans with predetermined conditions, especially for Muslims explained in the Al-Qur'an Surah al-Baqarah verse 168. This verse gives an understanding that Muslims should be good in using everything that is clearly halal (Febriani et al., 2022) "O you who believe, eat you with halal food and while it is good for you who are on earth and you do not follow the steps of the devil. In fact, the devil is a real enemy for you" (Quran Ministry of Religion, 2022). Halal consumption and production will become a major issue as the world's Muslim population grows (Nazaruddin et al., 2023).

After emerging from the "long sleep" phase, where the growth of halal products increased, the phenomenon of the halal boom in society and industry is part of the evolutionary process in the Muslim market. Marketers have ignored the halal market, allowing only certain brands to target Islamic consumers (Putera & Rakhel, 2023). Muslim-majority countries should take the lead in researching and developing the halal industry, as halal is an Islamic value and principle. The halal market should be seen as a socially conscious industry that promotes local inclusiveness (Kamali, 2021). In addition, halal is considered a method that has the ability to influence the economy in various sectors and improve the quality of industry (Hashima et al., 2022). Development strategies emphasize maximizing product quality to maximize policy optimization and the involvement of stakeholders and the community in industry development (Mubarok & Imam, 2020).

The development of the Halal industry has become the main agenda for the development strategy planning of countries in the world. The issue of Halal industry development is not only limited to religious or social perspective, but also extends to discussions from economic and business perspective in global trade. The Halal industry has developed into a new manufacturing sector that has become the fastest growing global business in the world. The development of the Halal industry can also be seen from the fact that each country has a special institution that handles the Halal certification of a product and has its own regulations for carrying out the Halal certification of a product. Halal Certification in Europe, America and Australia (Rahmawati et al., 2022).

A number of halal sub-sectors, including food, financial services, halal travel, media, fashion, cosmetics and pharmaceuticals, and Muslim-friendly travel, can be used as the basis for industrial development. It explains that Muslim spending on food will increase by 6.9% in 2021, from US\$1.19 trillion to US\$1.27 trillion, and is projected to grow by 7.0% in 2022 and reach US\$1.67 trillion in 2025 at a 4-year CAGR of 7.1%, based on data from The State of the Global Islamic Economy Report 2022. Then, at a 4-year CAGR of 16.5%, Muslim travel spending is projected to increase from US\$58 billion to US\$102 billion in 2021. It is expected to grow by 50.0% to US\$154 billion in 2022 and US\$189 billion in 2025. With a 4-year compound annual growth rate (CAGR) of 7.9%, Islamic financial assets, valued at US\$3.6 trillion in 2021, are projected to increase by 8.0% in 2022 and reach US\$4.9 trillion in 2025 (DinarStandard, 2022).

Muslim spending on fashion will increase by 5.7% in 2021, from US\$279 billion to US\$295 billion. With a 4-year compound annual growth rate of 6.1%, it is projected to grow by 6.0% to US\$313 billion in 2022 and US\$375 billion in 2025. The amount Muslims will spend on pharmaceuticals will increase by 6.5% in 2021, from US\$93.5 billion to US\$100 billion. With a 4-year compound annual growth rate of 6.7%, this amount is projected to increase by a further 6.7% to US\$106 billion in 2022 and reach US\$129 billion in 2025. The amount Muslims will spend on cosmetics will increase by 6.8% in 2021, from US\$65 billion to US\$70 billion. With a 4-year compound annual growth rate of 7.4%, this amount is forecast to increase by a further 7.2% to US\$75 billion in 2022 and reach US\$93 billion in 2025. The amount Muslims will spend on media will increase by 7.2% in 2021, from \$216 billion to

\$231 billion. With a 4-year compound annual growth rate of 7.5%, this amount is projected to increase by another 7.5% in 2022 to US\$249 billion and US\$308 billion in 2025 (DinarStandard, 2022).

The halal industry plays an important economic role in the community and is also expanding into a global market that increasingly values products and services that comply with halal principles. Due to the growth of the Muslim population and awareness of halal principles, this industry continues to grow and has great potential to contribute to the global economy and trade. The halal industry has been identified as a new economic stream that has the potential to drive global economic growth. A halal industrial ecosystem is a very important thing to be realized in Indonesia, considering that the ecosystem will promote the development of the halal industry more optimally and Indonesian halal products will become increasingly competitive in the global market (Kemenag, 2023).

Previous research has discussed bibliometric analysis regarding halal such as halal cosmetics, halal tourism, halal food, halal clothing and others. However, there is still little research on the halal industry using bibliometric analysis. Research conducted by Febriani et al., (2022) explained that scientific publications in the Southeast Asia region have developed quite well as evidenced by the existence of documents relating to the halal industry in countries where the majority of the population is non-Muslim. This research only examines the Southeast Asia region for the period 2006-2022 using bibliometric analysis processed with biblioshiny. Then, research conducted by Darmawati et al., (2023) used bibliometric analysis selected using criteria carried out in 2009-2022. While research by Suryani et al., (2022) and Azmi et al., (2021) focused on halal cosmetics by mapping its development over ten years, research by Cahyani et al., (2022) discussed halal tourism and research Anam (2022) which discussed halal food.

From previous research, it is evident that there is still a lack of literature reviews and trend analysis discussing the halal industry. Furthermore, multiple databases can be used in addition to one database for bibliometric analysis and literature review. Therefore, this research seeks to enrich the literature by using additional databases and adding years to be used. Although bibliometric studies provide some idea of areas of interest, researchers must always interpret the results carefully because they use different approaches or search strategies (Hashima et al., 2022). The Scopus database is used in this study in compliance with the recommendations made by earlier studies. This study's focus of this research is to examine earlier halal industry research trends.

The contribution of this research can be seen from several aspects. First, researchers conducted the recent study to determine the development of halal industry trends in scientific publications, where previous study had not yet focused on this. Second, this research used bibliometric analysis with VOSviewer software, the results of which are categorized into 3, namely network visualization, overlay visualization and density visualization. Third, this research was conducted from 1997-2023. Based on the research gaps, researchers were encouraged to conduct research on halal industry publication trends using bibliometric analysis to strengthen the results by using other databases to search for articles. This research was to analyze how research trends in the halal industry include document types, year of publication, document language, publications by country, publications by institution, leading journals, co-authorship, co-occurring author.

II. LITERATURE REVIEW

The halal industry is not just about the food on your plate, it is a way of life that encompasses the entire ecosystem, from the process of food creation to consumption. The halal industry is a rapidly growing sector of the global economy. Islamic finance, halal food, modest fashion, media and recreation, Muslim-friendly travel, pharmaceuticals, and cosmetics are seven parts of the global Islamic economy (ISA, 2023). This means providing goods that are "sustainable, environmentally sound, and based on ethical, responsible, and non-exploitative business models" in the context of the global halal industry. With this thorough knowledge of *tayyib* and *halal*, one can combine Islamic banking and finance with the halal sector to create a *tayyib* supply chain and business that works as a whole (Kamali, 2021).

When talking about Halal and the Halal industry, there are three main points of focus: *Fiqh*, *Shariah* and *Maqasid al-Shariah*. It is imperative to understand the differences between these three areas in order to avoid misinterpretation and misuse of the rapidly expanding Halal market (Kamali, 2021). Currently, Halal has become a global trend, many countries are competing to become the center of the world's halal industry. The fact is that currently many non-Muslim countries dominate the Halal Industry. Like Brazil,

a country with a Muslim population of less than 1% has become the largest supplier of poultry meat to Middle Eastern countries. Australia is currently the largest supplier of halal beef to Muslim countries that are members of the OIC (Rahmawati et al., 2022).

There are currently 1.8 billion Muslims worldwide, and the number is still growing. There is little doubt that the Islamic economy will flourish as a result of the population's rapid growth. According to the 2019 State of the Global Islamic Report, Muslims spent almost USD 2.2 trillion on halal goods, including food and drink, medications, and other items that promote a halal way of life. By 2024, this amount is expected to rise to USD 2.4 trillion, with the halal food and beverage industry, cosmetics, pharmaceuticals, Islamic financial services, modest fashion, halal travel, and Islamic media all expected to play significant roles (ISEF, 2023).

However, Indonesia's place in the global halal industry has not been noteworthy thus far, despite the halal industry's many opportunities. Speaking more broadly internationally, the national halal industry still faces a number of obstacles in the nation. These difficulties are First, because there are still a lot of products on the market without halal certification, there hasn't been legal certainty regarding the halal status of the products that are in use. Second, the goal of growing the national halal industry is not yet included in the government's long-term plan. Third, expanding the halal industry's economic scope. This is evident from three angles at the very least: the price of halal certification, connections with the halal industry, Islamic finance, and halal research and development. Fourth, as a public servant, the government ought to be involved in establishing a suitable infrastructure for halal products in order to facilitate their production, distribution, and consumption. The presence of a supervisory body to enforce halal production regulations is the fifth and equally significant measure. This body is responsible for pursuing infractions, particularly from companies or manufacturers that do not adhere to the regulations (Hasan & Pasyah, 2022).

Bibliometric analysis is a method of quantitative analysis of scientific publications, especially through the use of bibliographic data. A bibliography includes a list of quotations found in a work or article, and can provide information about the sources the author uses to support his arguments or gain knowledge about a particular topic. Bibliographies can be organized by various categories, such as source type (books, articles, journals, and so on), alphabetically, or topics. Bibliography Placed at the end of a publication or scientific work as a reference for readers (Harmoko, 2023).

VOSviewer software plays an important role in data processing related to data collection, formation, management, analysis, simulation, etc. VOSviewer can produce mapping images in three types including network visualization, density visualization, and overlay visualization. VOSviewer is capable of mapping various types of bibliometric analysis resulting in the ultimate bibliographic database and advanced visualization with visual labeling. In this Vosviewer application, researchers can find research variables that are still little researched and variables that have been researched. Based on the keywords used, the results of the analysis using Vosviewer in the space include studies whose use is still small, which can be used as a reference.

III. RESEARCH METHODS

The method used in this study was the bibliometric method which is used to explore and classify published literature in the field of Halal Industry. As a quantitative method, bibliometric analysis uses an evaluative and descriptive approach to represent research trends and the characteristics of a series of publications. The analysis in this study includes document type, publication year, document language, publication by country, publication by institution, leading journal, co-authorship, co-occurrence author are part of scientific mapping. This research used publication data published on the research topic "Halal Industry" and "industri halal". Data was collected through searching articles indexed by Scopus and what is downloaded was the year of publication, author name and affiliation, keywords, language used, and geographic distribution of these items. The search resulted in 960 documents related to halal industry in the Scopus database published, between 1997 and 2023. The data was downloaded in the a.csv (comma-separated value) file format. Then the data was analyzed using VOSviewer software. VOSviewer is used with the aim of visualizing network patterns or relationships between bibliometrics into three categories, including network visualization, overlay visualization and density visualization. The mapping obtained by VOSviewer will later be used as a reference in conducting accurate content analysis based on the name of the researcher, year of publication, researcher productivity, and industry halal research trends.

IV. RESULTS AND DISCUSSION

Result

This section explains the development of the halal industry which is reviewed from scientific publications on scopus.id. In the table below it is explained that the types of documents with the theme Halal Industry which are indexed by Scopus. The number of documents obtained was 960 documents which were divided into 11 types of documents, namely articles (642 documents), conference papers (132 documents), book chapters (80 documents), reviews (71 documents), conference review (10 documents), books (8 documents), short survey (7 documents), notes (5 documents), letter and retracted respectively (2 document), editorial (1 documents).

Table 1. Document Type

Document Type	Number of Articles	%
Article	642	66,88
Conference Paper	132	13,75
Book Chapter	80	8,33
Review	71	7,40
Conference Review	10	1,04
Book	8	0,83
Short Survey	7	0,73
Note	5	0,52
Letter	2	0,21
Retracted	2	0,21
Editorial	1	0,10
Total	960	100

Based on the results of this grouping, it shows that the type of document was 66.88% for articles, 13.75% for conference papers, 8.33% for book chapter, 7.40% for review, 1.04% for conference review, 0.83% for book, 0.73% for short survey, 0.52% for note, 0.21% for letter and retracted, 0.10% for editorial. From the results of the table it can be seen that the type of source that dominates most is journals. This is possible due to the increasing demand for the halal industry theme in various journals. Halal conferences around the world continue to grow, and this may be the reason why conference papers are in second place. Halal industry topics written in books, short surveys, notes, letter, retracted and editorial are the least likely to be as they may be more difficult to publish in these types of documents. As a result, it can be said that halal industry is increasingly popular among researchers, but it also needs to be explored further.

Table 2. Year of Publication

Year	Publication per Year	%
1997	1	0,10
1999	2	0,20
2000	1	0,10
2001	1	0,10
2003	3	0,31
2004	3	0,31
2006	2	0,20
2007	3	0,31
2008	5	0,53
2009	8	0,83
2010	6	0,63
2011	15	1,56
2012	28	2,92
2013	21	2,19
2014	32	3,33
2015	37	3,85
2016	44	4,58
2017	81	8,47

2018	69	7,19
2019	93	9,69
2020	123	12,81
2021	106	11,04
2022	115	11,98
2023	161	16,77
Total	960	100

Furthermore, documents were actively written in English as 945 more than 960 publications were written in English and the rest in Indonesian, German, Malay, Arabic, Chinese, French, Slovenian, and Spanish as listed in Table 3. English is a very important international lingua franca in many places around the world. So, no doubt, that's why most of the documents are written in English. In this case, more people will understand and know the topic of Halal Industry if it is written in English.

Table 3. Document Language

Language	Number of Articles	%
English	945	98,43
Indonesian	5	0,52
German	4	0,42
Malay	3	0,31
Arabic	1	0,10
Chinese	1	0,10
French	1	0,10
Slovenian	1	0,10
Spanish	1	0,10
Total	960	100

Based on table 4 depicts the contribution of various countries in terms of publishing worldwide. In this analysis, only the top 15 countries are considered based on the number of publications per country.

Table 4. Publication by Country

Rating	Country	Frequency
1	Malaysia	488
2	Indonesia	233
3	United Kingdom	55
4	United State	35
5	India	26
6	China	21
7	Pakistan	21
8	Undefined	21
9	Egypt	20
10	United Arab Emirate	20
11	Australia	19
12	Bangladesh	17
13	Brunei Darussalam	17
14	Thailand	17
15	South Korea	15

According to the Scopus database as listed in the table 4, it shows that Malaysia had contributed 488 documents about halal industry, followed by Indonesia with 233 publications, United Kingdom with 55 publications, United States with 35 publications and India with 26 publications. In addition, publications were also documented from China, Pakistan, Undefined, Egypt, United Arab Emirate, Australia, Bangladesh, Brunei Darussalam, Thailand and South Korea. Some countries were not included in this analysis because they had written fewer papers. These findings indicate that Malaysia and Indonesia are widely involved in the topic of halal industry because these countries have the largest Muslim populations. The rise of halal industry brands among these countries, especially Malaysia and Indonesia, has attracted various studies conducted in the region. The large gap in halal industry publications can be seen from two aspects, namely the top halal industry producing countries and

awareness of halal industry in that country.

The number of publications produced by authors from various universities is shown in Table 5. Out of 160 universities, the top 15 were selected for this analysis. From the analysis, it was determined that the authors from Universiti Teknologi MARA had published 91 documents, the authors from Universiti Putra Malaysia had published 65 documents. Then with 62 documents published by Universiti Kebangsaan Malaysia and International Islamic University Malaysia had published 57 documents. The results reveal that institutions from Malaysia have published studies on halal industry.

Table 5. Publication Based on Institutions

Rating	Institution	Frequency
1	Universiti Teknologi MARA	91
2	Universiti Putra Malaysia	65
3	Universiti Kebangsaan Malaysia	62
4	International Islamic University Malaysia	57
5	Universiti Malaya	43
6	Universiti Teknologi Malaysia	38
7	Universiti Utara Malaysia	35
8	Universiti Sains Islam Malaysia	35
9	Universiti Sains Malaysia	24
10	Universiti Kuala Lumpur	23
11	Universitas Indonesia	16
12	Universiti Teknikal Malaysia Melaka	16
13	Universiti Malaysia Kelantan	16
14	Universiti Brunei Darussalam	14
15	Universitas Islam Indonesia	14

Based on table 6, you can see the subject areas related to halal industry research. In this research, only 10 subject areas were taken, namely Business, Management and Accounting had 426 documents, Social Sciences had 223 documents, Economics, Econometrics and Finance had 184 documents, Agricultural and Biological Sciences had 173 documents, Engineering had 142 documents, Computer Science had 132 documents, Arts and Humanities had 100 documents, Environmental Science had 80 documents, Decision Sciences had 79 documents and Biochemistry, Genetics and Molecular Biology had 44 documents. The results show that the subject areas that contribute most to halal industry research are Business, Management and Accounting.

Table 6. Publication Based on Subject Area

Rating	Subject Area	Frequency
1	Business, Management and Accounting	426
2	Social Sciences	223
3	Economics, Econometrics and Finance	184
4	Agricultural and Biological Sciences	173
5	Engineering	142
6	Computer Science	132
7	Arts and Humanities	100
8	Environmental Science	80
9	Decision Sciences	79
10	Biochemistry, Genetics and Molecular Biology	44

Table 7 lists articles that have been published about "halal industry", "halal", "industry", and other keywords used in this research. Knowing the journals that publish about halal industry is very important for selecting journals for literature reviews and understanding the emphasis of each journal. In this study, only the top 15 journals were included and journals with less than 6 publications were excluded.

Based on table 7, it shows that the Journal of Islamic marketing indexed Q2 had 98 documents published, while the International Journal of Supply Chain Management indexed Q3 had 27 documents published, the Global Journal Al Thaqafah indexed Q3 had 16 documents published and the British Food Journal indexed Q2 had 14 documents published. These four journals were followed

by the Food Research, Malaysian Journal of Consumer And Family Economics, and International Food Research Journal indexed Q2 which had 12 documents published. Furthermore, the Advanced Science Letters (Q4), Journal of Islamic Accounting And Business Research (Q2), Journal Of Islamic Monetary Economics And Finance (Q2), and Pertanika Journal Of Social Sciences and Humanities (Q1) had 8 documents published, the Asian Social Science (Q4) and the Sustainability Switzerland (Q2) had 7 documents published, the International Business Management and Journal of Environmental Management and Tourism indexed Q4 have 6 documents published.

Table 7. Leading Journal

Rating	Journal	Quartile	Frequency
1	Journal of Islamic Marketing	Q2	98
2	International Journal of Supply Chain Management	Q3	27
3	Global Journal Al Thaqafah	Q3	16
4	British Food Journal	Q2	14
5	Food Research	Q3	12
6	Malaysian Journal Of Consumer And Family Economics	Q3	12
7	International Food Research Journal	Q3	12
8	Advanced Science Letters	Q4	8
9	Journal Of Islamic Accounting And Business Research	Q2	8
10	Journal Of Islamic Monetary Economics And Finance	Q2	8
11	Pertanika Journal Of Social Sciences And Humanities	Q1	8
12	Asian Social Science	Q4	7
13	Sustainability Switzerland	Q2	7
14	International Business Management	Q4	6
15	Journal Of Environmental Management And Tourism	Q4	6

Table 8 shows the top 10 most prolific authors publishing articles on the halal industry. It can be seen that the highest number of authors per document was recorded, namely 1 author with a frequency of 10 documents. The minimum number of authors per recorded document was 5 authors with a frequency of 2 documents. The most active writer recorded was Ali, M.H. and Zailani, S with 10 published documents. Then, Jamaludin, M.A, Jaswir, I. and Kamarulzaman with 8 documents. The other five authors accounted for two published documents each. The table explains that some authors have published more documents than others because most of their research is ongoing and from the same influential institutions or organizations.

Table 8. Most Prolific Authors

Rating	Authors	Number of Articles	Number of Citation
1	Ali, M.H.	14	396
2	Zailani, S.	11	134
3	Jaswir, I.	10	10
4	Jamaludin, M.A.	8	9
5	Kamarulzaman, N.H.	8	3
6	Tan, K.H.	8	67
7	Tieman, M.	8	432
8	Vanany, I.	8	104
9	Ab Talib, M.S.	7	239
10	Adham, K.A	7	13

Citations based on author can be seen that Tieman, M.'s research was the author with the most citations, with 432 citations. Furthermore, Ali, M.H with a total of 396 citations, Ab Talib, M.S with 239 citations, Zailani, S with 134 citations, Vanany with 104 citations, and Tan, K.H. as many as 67 citations. For the next 3, namely Jaswir, I. with 10 citations, Jamaludin, M.A. with 9 citations and Kamarulzaman, N.H with 3 citations.

Then, figures 1, 2 and 3 are visualization maps of the co-authorship network obtained using VOSviewer. The figure shows the relationship between authors who published at least 4 documents, resulting in 30 authors that have an authorship network. Here is shown in the image below.

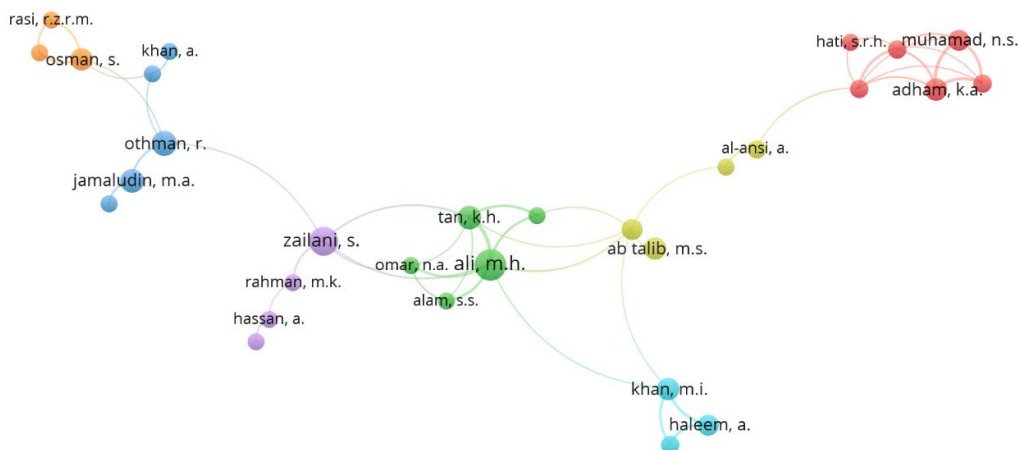


Figure 1. Network visualization for Co-Authorship Author

Figure 1 shows a network visualization of co-authorship which is characterized by nodes (circles) representing authors or researchers, and edges (networks) representing relationships between authors or researchers. A collection of nodes equipped with edges explains that there is a correlation or relationship between researchers in research on the halal industry. Network shows the existence of a relationship or collaboration of authors. Cluster 1 includes authors related to the halal industry studied, namely Adham, K.A, Hati, S.R.H, Masood, A., Muhamad, N.S., Rahim, A.A., and Said, M.F. Cluster 2, namely Alam, S.S., Ali, M.H., Makhbul, Z.M., Omar, N.A. and Tan, K.H. Cluster 3, namely Fadzillah, N.A., Jamaludin, M.A., Khan, A., Othman, R. and Tukiran, N.A. Cluster 4, namely Ab Talib, M.S., Al-ansi, A., Han, H., and Ngah, A.H. Cluster 5, namely Hassan, A., Rahman, M.K., Rahman, N.A.A., and Zailani, S. Cluster 6, namely Haleem, A., Khan, M.I., and Khan, S. Cluster 7, namely Osman, S., Rasi, R.Z.R.M., and Ustadi, M.N.

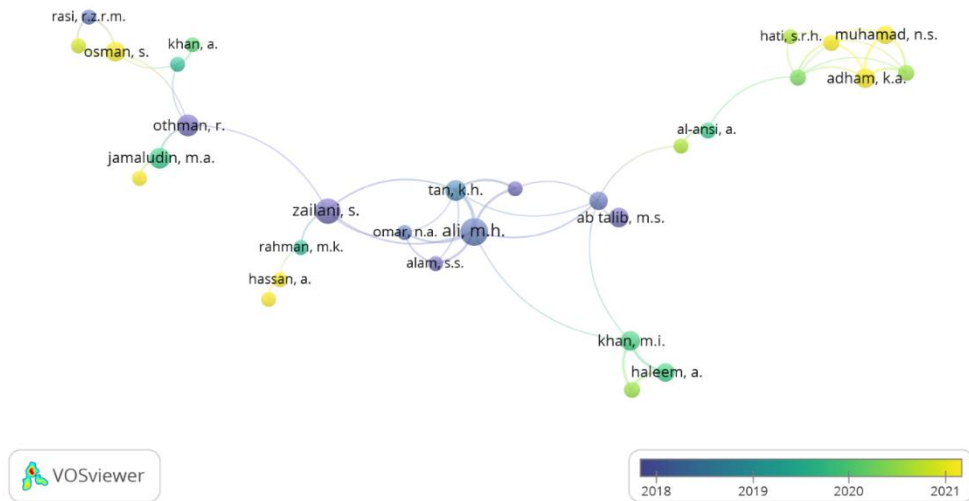


Figure 2. Overlay visualization for Co-Authorship Author

Figure 2 shows an overlay visualization that maps the author's historical footprint in research on the halal industry. This mapping is characterized by nodes that have varying colors and edges that connect one researcher to another researcher. The dark color on the node indicates research that has been carried out in the past over a specified time period. It can be seen that the author has a dark color, namely Zailani, S., and Othman, R which has been around since 2016. Meanwhile, the author has bright colors namely Masood, A who started contributing in 2022.

From the results of the density visualization shown in Figure 3, it can be identified that there is a density or emphasis on nodes which means that groups of researchers who research the halal industry have a relationship with each other. In addition, the level of node saturation in density visualization is indicated by the number of studies involving other studies by citing the author. As shown by Ali's research, M.H. which shows the brightest node density color, in other words the author

conducted research by citing several studies alongside it as a form of research collaboration in the field of halal industry.

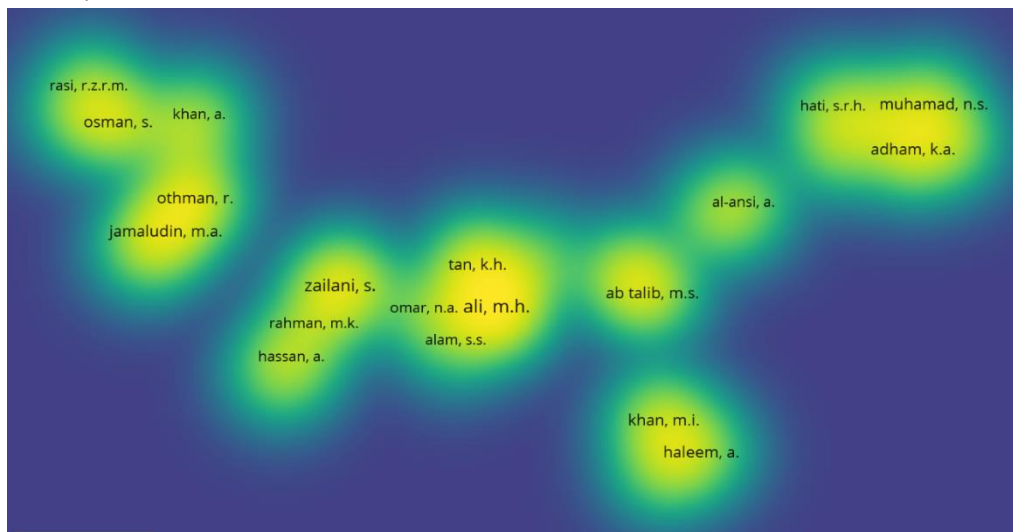


Figure 3. Density visualization for Co-Authorship Author

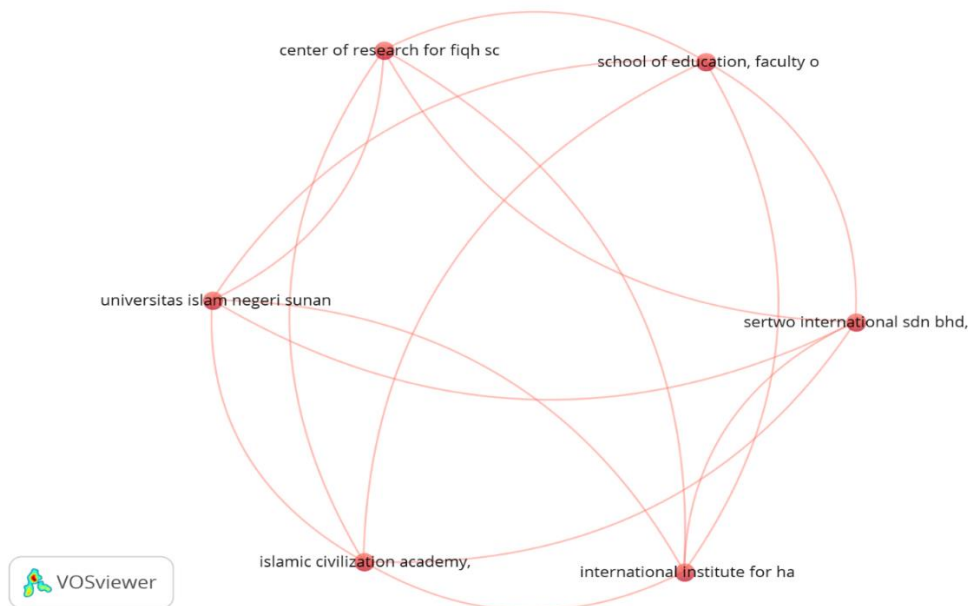


Figure 4. Co-Authorship Organization

Then, figure 4 shows the organizations involved regarding the authors of published articles with at least one document for each organization. The minimum number of document of an organization were 2 documents, resulting in 6 organization that had an authorsip network. From the figure 4, organizations can be grouped into 1 cluster, including organizations related to the halal industry that have been researched. The cluster consists of Center of Research for Fiqh Science and Technology (Universiti Teknologi Malaysia), International Institute for Halal Research and Training (International Islamic University Malaysia), Islamic Civilization Academy (Universiti Teknologi Malaysia), School of Education (Universiti Teknologi Malaysia), Sertwo International Sdn Bhd, and Universitas Islam Negeri Sunan Kalijaga.

Figure 5 shows the relationship between countries and individual authors, contributed to publications related to halal industry. In this section the minimum number of document of a country are 5 documents, resulting in 31 country that have an authorsip network.

The results of this study are different from the results of previous research. Research conducted by Suryani et al., (2022) and Azmi et al., (2021) focused on halal cosmetics by mapping its development over ten years. Then, research by Cahyani et al., (2022) discussed halal tourism and research Anam (2022) which discussed halal food. Several previous studies did not focus on the halal industry globally but focused more on sub-sectors of the halal industry, even though the analysis used was the same, namely bibliometric analysis. On the other hand, there is research with the same subject and analysis, namely researching the halal industry using bibliometrics. Research conducted by Darmawati et al., (2023) used bibliometric analysis selected using criteria carried out in 2009-2022 and research conducted by Febriani et al., (2022) only examined the Southeast Asia region for the period 2006-2022 using bibliometric analysis processed with biblioshiny.

The differences between this research and previous research make this research new. The main difference is the period of years used. In addition, this research also uses bibliometric analysis with VOSviewer. VOSviewer is used with the aim of visualizing network patterns or relationships between bibliometrics into three categories, including network visualization, overlay visualization, and density visualization. Network visualization aims to visualize whether the network or relationship between research terms is strong or not, overlay visualization aims to visualize historical traces based on the year the research was published, while density visualization aims to display the density or emphasis of research groups. From this research, not only research trends were found, but also several challenges in the Halal industry, which can be used as a basis for adding future research directions.

V. CONCLUSION

Based on the results of the analysis and discussion carried out, the following conclusions can be drawn. The development of halal industry research trends seen from the most productive authors is Ali, M.H. who contributed the most to this research. The most widely used article written by Tieman, M. is "The application of Halal in supply chain management: In-depth interviews". The most researched country is Malaysia. The most used keywords are halal, Malaysia, halal industry, halal tourism and halal food.

This research contributes to the related literature as well as researchers interested in exploring this area. The findings of this research will help students, researchers and practitioners in the halal industry to determine its global distribution. These findings will also be useful for funding bodies to identify sectors that need support, and for industry to collaborate with academics in industrial halal research. It is hoped that this collaboration will have a great impact on the development of the Halal industry, which will indirectly introduce the Halal industry to society. For government agencies, this research can be used as material for consideration in creating regulations and developing relevant policies.

In addition, our study serves as a roadmap for future research by highlighting the strengths and limitations of halal industry publications. One of the limitations is that this research adopts a single source or database for data collection and synthesis, which is only the Scopus database. So, by including other data sources, it will strengthen the analysis results. Then, this bibliometric research uses a single database to avoid duplication. There is a possibility of including other methods in the analysis of literature, so that the interpretation and analysis of data will be more accurate when comparative studies are conducted with other tools. Meanwhile, another limitation is the inability to capture the broader and deeper context of the article's citation structure. However, this research has sufficiently explained several other citation structures for halal industry literature.

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