A Scientometric Analysis on Halal Awareness

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Abstract

This study aims to determine the development and trend of halal awareness maps published by Scopus indexed journals. The data analyzed were 200 publications of published documents. The export data is then processed and analyzed using the R Bibliometrix application program combined with VOSviewer to determine the halal awareness bibliometric map for research development. The results showed that the number of publications with the theme of halal awareness experienced a significant increase. The results showed that the most popular journal was the Journal of Islamic Marketing, the most popular author was Abdullah A., and the most popular country was Malaysia. The most popular keyword topics are halal product, food industry, halal certification, halal logo and halal tourism. Furthermore, in conceptual structure, this research has spread thematic maps to place themes and sub-themes on the graph and divided them into four clusters (dropping or emerging themes, basic themes, highly developed and isolated themes, motor themes). Then, the conceptual framework developed will provide the necessary incentives for continued research in this emerging topic, which will benefit academics, researchers and practitioners around the world.

Keywords: Halal Awareness; Scientometric; R; VOSviewer

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INTRODUCTION

Halal lifestyle is a lifestyle by holding Islamic values in its elements of health, safety and security, prosperity and human dignity (Boediman, 2017). The word Halal comes from Arabic referring to the interpretation of the Quran which means that whatever is permitted by sharia (Nurfajri, 2017; Soebahar et al., 2021; Anas, et al., 2010). The concept of halal is also closely related to 'Toyyiban' which refers to 'clean and healthy'. A product that is consumed is not only halal, but must be tayyib. Thayyib (good) is healthy in terms of quality, safety, cleanliness, and has been scientifically tested (Aspan et al., 2017; Shaari, 2020). In short, halal is synonymous with Muslims but is currently well accepted among non-Muslim consumers.

In recent years, research interest on the concept of halal has grown rapidly, especially something good information about what is happening today in halal products. This means that awareness of halal food is related to the concepts of "literacy" and "awareness". The literal meaning of "awareness" in the context of halal is to have a special interest or experience from something that is well informed about what is happening today in halal food, drinks and products. Meanwhile, halal knowledge reveals an individual's understanding of religious injunctions about halal and haram (Muslichah et al., 2020).

In addition, the large and growing business opportunity for the halal industry shows that halal awareness is visible among both Muslim and non-Muslim communities. The increasing awareness of Muslims around the world about their obligation to consume halal products creates a greater demand for halal products (Astuti & Asih, 2021). Currently, halal awareness has been cited as the main determinant of intention to purchase halal products but the lack of understanding of what constitutes halal awareness leads to the need for increased halal literacy (Shaari, 2020). In addition, halal certification and halal logos also have an impact on halal products, which can be considered as a result of awareness of the importance of the halal concept (halal awareness) and has an increasingly important role in increasing global demand for halal products. Moreover, Indonesia as a majority Muslim country, providing halal products is an obligation. Thus the market opportunity for halal products is very open, wide, and promising, so that it can be used as a business opportunity (Nurcahyo & Hudrasyah, 2017).

Several researchers have discussed a lot regarding halal awareness (Aqdas & Amin, 2020; Elías et al., 2016; Nusran et al., 2018; Usman et al., 2021). However, research using the scientometric approach has not been widely carried out. Considering this gap, the researcher tries to develop research that aims to identify and map research related to the development of halal awareness research through reputable journals indexed by Scopus with a qualitative approach. Next, this research will describe some interesting findings obtained from the special application of R for bibliometric analysis, namely Bibliometrix and combined with VOSViewer. The data analyzed consisted of 200 publications published in the last 14 years (2008-2022).

Furthermore, this paper is structured as follows. First, this paper presents the background of the research, followed by a review of the related literature. Then, the following section presents the research methods used and the research findings. Finally, the contributions, practical implications, and limitations of the research are also explained in this paper.

LITERATURE REVIEW

The halal lifestyle has become a trend for all Muslims in all corners of the world. The halal lifestyle is a lifestyle that directs the perpetrators with a moral and objective culture. In Arabic, halal generally means "permissible" and refers to activities that are permitted under sharia regulations for consumption, use, and worship (Akin, 2021; Aziza et al., 2015). In research Bashir (2020) defines that halal is a general term, which covers all sides of Muslim life and all types of food. Furthermore, halal does not only relate to food or food products but also goes further than food products to cover all aspects of a Muslim's personal life. In short, halal is motivated by principles, integrity, and trust, and it pervades every part of a Muslim's life (Vanany et al., 2019).

On the other hand, the growth of the global halal industry has brought about a change in the mindset of both Muslims and non-Muslims alike. This makes the global halal industry a growing and developing consumer segment in the world. The demand for halal products has increased globally due to the growing Muslim population worldwide (Abdalla Mohamed Bashir, 2020).

Indonesia is known as a country with a large population worldwide and this is also an opportunity to increase the halal industry. Quoted from the Global Islamic Economy Report 2018-2019, Indonesia is the country with the largest population of adherents of the Islamic faith, which is 87.18% of 232.5 million people (Bappenas, 2018). This means, with the largest number of Muslims in the world, Indonesia also has great potential to drive the sharia economy and develop the halal industry through a halal and healthy lifestyle.

According to the Deputy Governor of Bank Indonesia, Jada Agung said that for domestic consumption expenditures for all halal products and services to reach US$180 billion in 2020 and are estimated to grow by 14.96% to US$282 in 2025. This number shows that there is halal awareness in Indonesia consuming halal products in the community.
There are many factors that influence halal awareness, including religiosity which has a positive effect on increasing halal awareness (Mutmainah, 2018). In addition, what is no less important is knowledge or literacy in halal awareness which is also a factor that drives awareness to switch to halal products and become a behavior or lifestyle among the Muslim community. Salehuddin (2013) states that halal literacy is defined as the correct awareness and understanding of Muslim individuals about halal commands. This is also in line with the research of Elias et al. (2016) explained that halal knowledge is about how individual Muslims must digest and practice several Islamic teachings about halal and haram, especially on the concept of halalan toyiban. Meanwhile, Nurhayati (2020) explains more specifically that knowledge about halal products is defined as a collection of various kinds of information about halal products, which include product categories, brands, product terminology, product attributes or features, product prices, place and time of sale, how to use them, and beliefs about the halalness of the product. In addition, knowledge of halal products also consists of knowledge about where and when consumers buy halal products and also who sells halal products.

Currently, halal awareness is a topic that continues to grow along with the development of the halal industry in the world. According to Nurcahyo & Hudrasyah (2017) and Astuti & Asih (2021) halal awareness is the level of understanding of Muslims in knowing issues related to the halal concept. Meanwhile, A M Bashir (2019) said that halal awareness is a concept of knowledge and then applying certain behaviors.

Several studies have discussed this theme, among the results of their research is the analysis of the factors of awareness of halal products. In the research, Kurniawati & Savitri (2020) found that religious beliefs, health reasons, logo certification, were the most influencing factors for Indonesian halal awareness.

This research is also in line with Gojali & Asih (2020) and Muslichah (2020) in their research which found that among factors of satisfaction, personal social perception, subjective norms, attitudes, halal certification, interests, beliefs, and halal awareness, religiosity factors contributed significantly. The most significant in shaping the variables. Sama & Trivedi (2019) found that Muslim consumer beliefs had the most significant influence on attitudes towards halal products, leading to brand love. And the same thing is also emphasized by Yasid et al (2016) that Muslim awareness of halal products is influenced by religious beliefs, self-identity and media exposure both from partial and simultaneous analysis.

Furthermore, in awareness of halal certification and halal logos on interest in buying halal products. Jaiyeoba et al (2020) and Nurcahyo & Hudrasyah (2017) found that halal certification marks and halal brand quality are the most influential factors that contribute to consumer purchasing decisions.

Based on this, with the increase in halal literacy, halal certification and halal logos for halal products can be considered as a result of awareness of the importance of the halal concept (halal awareness), both for entrepreneurs in order to produce a product (Elias et al., 2016; Tawil et al., 2016). al., 2015; Viverita & Kusumastuti, 2017) as well as for Muslim consumers in terms of consuming a product (Aqdas & Amin, 2020).

**METHODOLOGY**

Scientometric or bibliometric analysis is a quantitative approach that is useful for summarizing developments in a particular field of study and is based on measurement and study of scientific output (Santos & Simoes, 2021). The graphical representation of bibliometrics has received less attention. However, few researchers seriously study the problems related to graphical representation. Most articles published in the bibliometric literature rely on simple graphical representations provided by computer programs.

In this study using the Scopus database for data acquisition which is stored in a CSV file. The Scopus database was chosen because it is reputable for abstracts and citations. In addition, Scopus has become the home for well-written, trustworthy, peer reviewed and state-of-the-art research papers that achieve good citation rates. It is also evolving as a platform that brings together researchers, research concepts, and associations. Furthermore, a global search for literature published with the theme "halal awareness" is carried out without a specified start date involving an inclusive time span of 14 years 2008-2022. Meanwhile, the last fourteen years were chosen so that historical strength does not obscure the current trend, obtained 200 published articles.

Furthermore, the latest information on publication metrics and bibliometric indexes is sought to provide an updated picture of the extent of research developments related to “halal awareness” in the research world and its impact on the transition to a healthy lifestyle. The publication data processed in the form of papers sourced from various scientific journals and other sources with a research theme with the theme "halal awareness". In this study, we use bibliometric analysis and visualization methods used to characterize research on “halal awareness” published in journals with various multidisciplinary topics over the past few years.

In the processing process, the review process itself will be carried out on July 2, 2022. Figure 1 illustrates the three steps in identifying research documents, namely eligibility, screening, and inclusion, which are involved in the systematic review process. The keywords that will be used in this study try to answer the research questions above. Some general statistics from the data set are presented to get an overview of research related to good
governance. All articles that fulfill the search query are evaluated from the aspect of text analysis. Then the research documents were analyzed using the bibioshiny software, a free software supported by the R environment (CRAN, The Comprehensive R Archive Network, https://cran.r-project.org/) which provides a set of tools for quantitative research in bibliometrics and scientometrics (Aria & Cucurrolo, 2017). In the bibliometric literature, the greatest concern is with the construction of bibliometric maps. Research related the effect of differences on similarity measures (Ahlgren et al., 2003), and they were tested with different mapping techniques (Boyack et al., 2005). Furthermore, text analysis will be carried out on the results of bibliometric mapping related to "word". Several studies using scientometrics analysis in Islamic economics and finance, for example, have been carried out by Marlina et al., (2021), As-Salafiyah et al., (2021), Rusydiana et al., (2021), and also Laila et al., (2020).

### RESULTS AND ANALYSIS

#### Initial Search Results

The initial search results obtained after running a search query on Scopus, we got 200 documents related to “halal awareness”. The allocation of the distribution of scientific articles extracted by type of source is shown in Table 1. All research articles related to “halal awareness” are categorized into five groups as articles (150), conference papers (29), reviews (14), book chapters (6), and letters (1). Most of the research works have been published in articles, namely 75%, followed by 15% conference paper reviews. Furthermore, the annual growth in “halal awareness” publications is presented in Table 2 and Figure 2. The first document was published in 2008 and continues to this day.

<table>
<thead>
<tr>
<th>Document Types</th>
<th>Number of Articles</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>article</td>
<td>150</td>
<td>75%</td>
</tr>
<tr>
<td>book chapter</td>
<td>6</td>
<td>3%</td>
</tr>
<tr>
<td>conference paper</td>
<td>29</td>
<td>15%</td>
</tr>
<tr>
<td>letter</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>review</td>
<td>14</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>200</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 2:** Annual Expansion in Scientific Production

Figure 2 shows that the highest number of scientific articles was published in 2021, followed by 2020 and 2019 along with the spread of the Covid-19 pandemic, meaning that there was an increase in halal awareness during the Covid-19 pandemic. In addition, Figure 2 also shows that the annual scientific production for the last 14 years is from 2008 to 2022. From the analysis of the growth of this publication, it shows the increasing issue of "halal awareness" in the world of research.

**Bibliometric Analysis**

In this bibliometric analysis, we identify the uniqueness of relevant keywords, research trends, most contributing authors, sources, affiliations, citations, document analysis, geographic regions, etc. We show source growth per year by analyzing source data. Next, we analyzed the authors’ notes to identify the authors’ productions over time. The analysis presented is in the form of correlations between authors, sources and keywords, countries, affiliations, and authors. Furthermore, this discussion also presents a network analysis that shows the relationship between co-authors and countries. This detailed bibliometric analysis provides an overview of quantitative and qualitative research trends. This analysis was carried out with the help of bibliometric tools, namely BiblioShiny and VOSviewer.

**Keyword Analysis**

The main purpose of selecting relevant keywords is to find relevant publications from a broad database. The selection of the right keywords by the researcher indicates the direction of the research which is then analyzed to find an accurate combination of relevant
keywords related to knowledge about the topic. With the help of keyword analysis, we can get an understanding of the current trend of research topics. Next, a graphical analysis of the most relevant keywords is shown in Figure 3.

Based on the image of the results of the keyword analysis, it was also found that the dominant words related to the issue of "halal awareness" are halal products, food industry, certification. This is because there is an increase in halal awareness of halal products (Kurniawati & Savitri, 2020) and continues to expand further to expand the economic potential for the food industry (Azmi et al., 2019) as an implication there is an increase in the role of the halal certification component (Aziz & Chok, 2013).

In the keyword analysis, topic trends are also presented which are also an important part of this research. Where the picture above shows an overview of the development of topics related to "halal awareness" from time to time with the distribution per year, so that it is known what topics have been used for a long time and what topics have been used recently. The trend of this topic also considers the frequency value of each word indicated by the log axis.

So, in addition to looking at annual trends, the emergence of topics is also adjusted to the frequency of the number of words appearing in the research theme related to "halal awareness". The higher indicates the more the word is used, and the further to the right, the more recently the word has been used. The development of the “halal awareness” theme began to experience a significant increase since 2015. Based on the description of the data above, the newest and most widely used topics are related to the “halal awareness” theme, namely food quality, meat, and certification.

**Affiliation Analysis**

Table 2 and Figure 5 show university participation, according to affiliations listed in scientific articles. Universiti Putra Malaysia made a significant contribution to the study of "halal awareness" from 2008 to 2022, with a total of 27 publications published. Regarding the three field analyzes of countries, affiliations, and authors, it was observed that most of the research was carried out in collaboration between Malaysia and Indonesia.

**Table 2: Top 10 Relevant Affiliations**

<table>
<thead>
<tr>
<th>Affiliation</th>
<th>Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universiti Putra Malaysia</td>
<td>27</td>
</tr>
<tr>
<td>Universiti Teknologi Mara</td>
<td>23</td>
</tr>
<tr>
<td>Bina Nusantara University</td>
<td>11</td>
</tr>
<tr>
<td>Universiti Malaysia Kelantan</td>
<td>11</td>
</tr>
<tr>
<td>Universiti Utara Malaysia</td>
<td>11</td>
</tr>
<tr>
<td>University Of Malaya</td>
<td>11</td>
</tr>
<tr>
<td>IIUM</td>
<td>10</td>
</tr>
<tr>
<td>Universiti Sains Malaysia</td>
<td>10</td>
</tr>
<tr>
<td>Universiti Teknologi Malaysia</td>
<td>10</td>
</tr>
<tr>
<td>University Utara Malaysia</td>
<td>10</td>
</tr>
</tbody>
</table>

**Documents Citation Analysis**

Citation analysis of retrieved scientific articles, at least 2037 citations were recorded for 200 publications. Citation analysis implies impact and popularity of articles and authors. Table 3 provides details such as DOI, total citations, and total citations per year from the top-cited document.

Furthermore, Table 3 presents a complete analysis of the most cited documents. From this analysis,
it can be concluded that the article written by Aziz & Chok (2013) with the title "The Role of Halal Awareness, Halal Certification, and Marketing Components in Determining Halal Purchase Intention Among Non-Muslims in Malaysia: A Structural Equation Modeling Approach" published in the Journal of International Food & Agribusiness Marketing has the highest number of citations.

Table 3: 10 Most Cited Publications

<table>
<thead>
<tr>
<th>No.</th>
<th>Paper</th>
<th>Total Citations</th>
<th>TC per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aziz Ya, 2013, J Int Food Agribus Mark</td>
<td>188</td>
<td>18,80</td>
</tr>
<tr>
<td>2</td>
<td>Lane S, 2018, Vaccine</td>
<td>186</td>
<td>37,20</td>
</tr>
<tr>
<td>3</td>
<td>Golnaz R, 2010, Int Food Res J</td>
<td>120</td>
<td>9,23</td>
</tr>
<tr>
<td>4</td>
<td>Mohsin A, 2016, Tour Manage Perspect</td>
<td>109</td>
<td>15,57</td>
</tr>
<tr>
<td>5</td>
<td>Rajagopal S, 2011, J Islam Mark</td>
<td>89</td>
<td>7,42</td>
</tr>
<tr>
<td>6</td>
<td>Soon Jm, 2017, Br Food J</td>
<td>71</td>
<td>11,83</td>
</tr>
<tr>
<td>7</td>
<td>Bashir Am, 2019, J Food Prod Mark</td>
<td>61</td>
<td>15,25</td>
</tr>
<tr>
<td>8</td>
<td>Khan S, 2018, Sustainability</td>
<td>56</td>
<td>11,20</td>
</tr>
<tr>
<td>9</td>
<td>Manzouri M, 2013, Int J Lean Six Sigma</td>
<td>53</td>
<td>5,30</td>
</tr>
<tr>
<td>10</td>
<td>Ngah Ah, 2015, J Islam Mark</td>
<td>52</td>
<td>6,50</td>
</tr>
</tbody>
</table>

**Sources Analysis**

Figure 6 provide information on scientific articles published by sources per year on “halal awareness”. Analysis of scientific article sources is in line with the growth of publications from year to year. Figure 8 shows the contribution of journals in articles that discuss halal awareness. Multidisciplinary topics such as marketing, management, food research, environmental, tourism are all areas of research that are interested in discussing halal awareness. It is possible that the number of articles is still possible to change and increase along with the development of science and the increasing trend of halal food in the research world.

**Authors Analysis**

Productivity can not only be measured in journals, but also authors in particular. The author’s analysis shows the activeness of the author in publishing papers in the field of research. Furthermore, Figure 7 presents the correspondence of the top 10 earning authors with some of the published articles and Figure 8 depicts the production for the top ten authors. The parameter measures the frequency for the number of documents is considered to indicate the author’s productivity. In addition, this research produces data where it appears that there are writers who have long started writing papers with the theme "halal awareness" and some are new to writing.
Geographical Region Analysis

A total of 43 countries have contributed to the “halal awareness” research. The leading publications came from Malaysia, followed by Indonesia and then India. Malaysia provided 102 scientific articles both separately and in joint partnership with various other countries. Table 4 and Figure 9 illustrate the number of scientific articles published by certain countries. Geographic area analysis presents the distribution of research results around the world.

Furthermore, in Figure 10 re-emphasizes the network analysis of the co-authors and countries in researching "halal awareness." To design this network diagram a total of 43 countries were considered with the complete counting method used with a minimum of one document. From these results, Malaysia became the most productive country by publishing 102 documents and partnering with writers from 29 other countries in publishing research related to "halal awareness".

Table 4: Number of Documents by Country

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of Documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia</td>
<td>102</td>
</tr>
<tr>
<td>Indonesia</td>
<td>53</td>
</tr>
<tr>
<td>India</td>
<td>7</td>
</tr>
<tr>
<td>United States</td>
<td>6</td>
</tr>
<tr>
<td>Thailand</td>
<td>6</td>
</tr>
<tr>
<td>United Arab States</td>
<td>5</td>
</tr>
<tr>
<td>Turkey</td>
<td>5</td>
</tr>
<tr>
<td>Italy</td>
<td>5</td>
</tr>
<tr>
<td>New Zealand</td>
<td>4</td>
</tr>
<tr>
<td>Egypt</td>
<td>4</td>
</tr>
<tr>
<td>Pakistan</td>
<td>4</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>3</td>
</tr>
<tr>
<td>China</td>
<td>3</td>
</tr>
</tbody>
</table>

Document Analysis

Document analysis was conducted to identify the latest developments in the field of “halal awareness” research. Abstract trend topics as shown in Figure 11. We consider minimum word frequency, word count per year, and word label size as comparison parameters for configuring document topic trends.

Conceptual Structure of Author’s Keywords

To reveal the conceptual structure of the document, we present a thematic map and the thematic evolution of the author’s keywords, as shown in Figures 12. To represent the thematic evolution of the authors' keywords, we included 100 keywords in the analysis. The minimum cluster frequency was set as 1 to 5, and the inclusion index weighted by word occurrence was one of the parameters used in the examination. In the year of chart representation, 2019 is calculated as the cut-off point.
Critical Analysis of The Study

Along with the level of halal lifestyle, it turns out that researchers are interested in reviewing research around the world on the topic of "halal awareness". This research continues to grow considering the number of publications shown in Figure 2. Furthermore, the analysis carried out using bibliometrics is able to promote ideas that are fast, innovative, and creative. This highlights the importance of research in "halal awareness" to motivate emerging researchers and practitioners.

Significant research on halal awareness has been carried out in the past and found peak growth in 2021 (Figure 2). Considering the list of important keywords, we can reveal that many factors affect the level of halal awareness including product availability, accessibility, religiously, halal certification, halal logo, halal product and others. However, the frequency of the keyword “literacy” detected is still relatively low. That is, this can be used as a further discussion for future research. Furthermore, the geographical analysis (Figure 10) implies that most of the research efforts in halal awareness are concentrated in Malaysia followed by Indonesia and India. Finally, as far as researchers observe, no bibliometric survey articles related to halal awareness have been found in 200 scientific publications. With this study, it is hoped that this will be the basis for developing research related to halal awareness and an overview of the scope for researchers in the selected research areas for future research.

CONCLUSION AND RECOMMENDATION

Halal being an upcoming industry seems to have sufficient support from research. Thus, the development of research on halal awareness is needed. In this study, we have tried to analyze the designated area of halal awareness using bibliometric analysis. This study tries to examine and map research related to the development of research trends on the theme of "halal awareness" published by leading journals. The data analyzed consisted of 200 Scopus indexed research publications from 2008-2022. The results show that the number of articles published by Scopus indexed journals with the topic of "halal awareness" has grown quite a bit in the early 2012s, and will have the potential to continue to grow and increase in line with the increasing issue of halal lifestyles around the world. The results of the study indicate that several popular topics and keywords are used in this topic, which can be developed further, especially in the special field of the halal industry as a strategy in increasing halal awareness and literacy that needs to be developed further. In addition, halal certification and halal logos are considered as a result of awareness of the importance of the concept of halal (halal awareness), both for entrepreneurs in order to produce a product and for Muslim consumers in terms of consuming a product.

Furthermore, this research can be used as a basic reference to see how the graphic visualization of the development of research trends with the theme of halal awareness in published scientific research so that it can be further developed by experts. Recommendations for further research can refer to the most popular keywords that can be discussed further, for example on the influence of literacy level on halal awareness. In addition, it is possible to perform a full bibliometric analysis with more items examined or with other type or metadata software such as WoS to obtain more comprehensive results.

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