Halal Food Quality and The SDG-3 Goal

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This study tries to review research on halal quality food in Scopus indexed journals. This analysis uses descriptive statistical analysis based on 868 selected papers relating to halal food research on international reputable journals. The data is then processed and analyzed using the VOSviewer application program to find out the bibliometric visualization map of halal food quality research development. The results of this bibliometric mapping study show a map of the development of research in the field of halal food quality. The most popular authors are in the red cluster which consists of 25 authors. The most popular countries are Malaysia and Indonesia. The most popular keywords are halal, safety, quality food, bibliometrics. In addition, this study also found a link between halal food quality and the third goal of the SDGs, namely ensuring a healthy life and promoting well-being for all people of all ages.

Keywords: Halal; Safety; Food Quality; Bibliometrics, SDG-3
INTRODUCTION

Good food quality will be a benchmark for consumers to consume and buy a product. Because it is one way to maintain the health of consumers in an era that is completely susceptible to disease today. Moreover, the current world condition after the Covid-19 pandemic, which until now has continued with a new variation of the virus, namely Omicron. This unstable world condition makes people vulnerable to impaired immunity and health. Therefore, to maintain healthy immunity in the midst of this condition, awareness is needed to maintain a quality and healthy diet. Related to this, it is closely related to the concept of halal food and tayyib in Islam.

Islam does not only regulate the procedures for worship and prayer for its adherents. More than that, Islam regulates all aspects of life. Starting from the way of transactions, politics, economics, social, business, behavior, including the issue of food and drink consumed by its adherents, everything has been confirmed by Islam through the word of Allah SWT. " O human! Eat from (food) that is lawful and good that is found on earth, and do not follow the steps of Satan. Indeed, satan is a real enemy for you (QS Al-Baqarah: 168). Halal food is food whose ingredients and manufacturing processes comply with Islamic values and teachings. This food is in demand by Muslim customers because it fulfills their physiological needs while complying with their religious obligations (Suhartanto et al., 2020).

The concept of good food according to Islam is based on the basis of the Qur'an Surah Al-Baqarah verse 168, namely halal and tahyyib. With the basis of halal and thayyib, it provides a regulation for Muslim consumers to eat halal food, which is permitted by Islamic law to be consumed both in terms of its substance and also how to obtain it. Thayyib which means good is also a word that cannot be separated from the word halal. Thayyib food is definitely halal. Not only that, the words halal and tahyyib have a broader meaning for producers and consumers. This is very dependent on the quality of food, food safety, nutritional value, how to obtain and handle it. This will have a significant impact on consumer health.

Indonesia is known as a country that has the largest Muslim population in the world. Become a major factor in increasing the production of halal food and other halal products in Indonesia. Awareness to consume halal products is a huge market potential for producers to produce halal products for the sustainability and glory of their companies. Currently, halal is not only purely a matter of religion, but also a matter of business and trade. There are several factors that are indirect indicators that influence consumer purchase intentions, namely food safety, halal certification, brand image, and perceived quality which show a good effect on health (Nurhasah et al., 2018).

The development of the halal food industry which is quite rapid at this time does not only focus on producers and also the government. In fact, banking has a fairly comprehensive role. The role of Islamic banking is not only limited to sharia-based financing that is free of usury (interest), maysir (uncertainty), and gharar (gambling). But also at all stages of the production process (halal value chain management). The important role that Islamic banking can play in order to develop and improve the halal food industry, including in the three processes of halal integrity. The first is the halal control stage, the second is the logistics process and the last is the halal verification stage. This is a strategic step that is able to develop and maintain certainty and guarantee the halalness of a product (Waharini & Purwantini, 2018).

Currently the information system is quite highly developed. Making it easier for consumers to find more accurate information on all aspects of life including religious beliefs that have a significant effect on halal awareness, the role of halal certification has a significant effect on halal awareness. So that Muslim consumers prefer companies that have been certified halal to maintain and comply with religious regulations and also awareness as a Muslim to be able to choose food concepts that meet good quality standards based on halal certification (Pramintasari & Fatmawati, 2017).

LITERATURE REVIEW

Consumer perception of a halal service quality in a restaurant has a very significant impact. Service quality is not only to meet consumer satisfaction but also an effort to meet halal certification standards in a restaurant that is labeled halal. It is a great advantage for food service operators when they comply with Halal certification to meet the demand for Halal certified restaurants. In addition, the perspective of Muslim consumers is also an important factor in assessing the food service industry and evaluating the service quality of a halal-certified restaurant. However, currently the concept and theory of service quality assessment is still very limited (Saaidin et al., 2018).
In Japan in food production, the quality and safety aspects of the product must be at an optimal level. To maintain good quality and nutrition, all aspects of the food chain must be monitored. In Japan, all actions are taken seriously from handling, preparing and storing food and various other matters related to food production procedures and processes. Japan is committed to protecting the integrity of the food chain in accordance with the integrity of producing food of good quality. Japan also applies regulations regarding food production. It is considered very important to ensure that every food product follows international and national food assessment standards. Thus, this can be related to the concept of quality and safety of halalan thayyiban food in Islam. The thayyiban aspect of food is supported in the general concept of halal food in Islam, focusing on food quality and safety in Japan. Halalan thayyibah has a very close relationship with food quality and safety based on regulations from the Japanese government (Raffi & Hasan, 2019).

The current development of the halal food industry is based on the Halalan Tayyiban food quality management (HTFQM) or Halalan Tayyiban food quality management framework. The HTFQM framework is based on a universal index with the orientation of assessing the quality of product excellence so that it is maintained in cleanliness, safety and purity. But there are still many gaps between the external factors of the product which are emphasized more than its internal characteristics. This is a problem that can hinder the effectiveness of the HTFQM framework. Based on the analysis conducted by Dahlal and Saniff (2019), this research was conducted by obtaining primary data through face-to-face interviews and after that content analysis of the HTFQM framework. It was found that the HTFQM framework has not implemented all the elements contained in the concept of halalan tayyiban. Proving that an ideal HTFQM framework can be established provided physical, and material, spiritual and supernatural aspects are accompanied by practical suggestions.

Currently, the concept of halal food has become a very interesting issue to be studied further. Because the concept of halal food is in accordance with the needs of the community, namely healthy and safe food of course quality. Several countries have implemented regulations on international and national assessment standards for quality food. There is a common thread that is very closely related between international and national assessment standards on the concept of halal food.

**METHODOLOGY**

This study uses data in the form of study journals and other study publications that have been published under the theme Halal Food Quality using metadata sourced from the Scopus database (www.scopus.com). Data collection was carried out by taking the keywords Halal Food Quality in the category of article titles, abstracts, keywords and findings from previous studies. The methodology used in this study is a qualitative study with a descriptive statistical method approach to literature studies from published journals related to Halal Food Quality and analyzed using Microsoft Excel 2010 or in csv form. Meanwhile, the development trend of Islamic business education publications was analyzed using VosViewer software.

VOSviewer was developed for building and viewing bibliometric maps and is freely available to the bibliometric research community (see www.vosviewer.com). VOSviewer can create author maps or journal maps based on co-authorship data and co-occurrence keywords, i.e. build author and keyword maps based on shared incident data. This program offers the reader that the map allows bibliometrics to be examined in detail.

Bibliometric analysis or method (bibliometrics) according to research by Ellard and Wallin (2015) also known as scientometrics is part of the research evaluation methodology, and from the various literatures that have been produced, it is possible to carry out bibliometric analysis using separate methods. The form of analysis refers to mapping as material for conducting analysis. (Sidiq, 2019). Studies on Islamic economics and finance by using bibliometric analysis has been done by other researcher, for example Marcella et al., (2021), As-Salafiyyah et al., (2021), Rusydana et al., (2021), and also Laila et al., (2020).

**RESULTS AND DISCUSSION**

1. **Bibliometric of Co-Authorship Author**

In using the VOSViewer software, it was found that the bibliometric mapping of the author is as shown in the following figure.
Co-authorship analysis is a form of analysis based on the interrelationships between items determined based on the number of documents co-written by the authors. One type of co-authorship is the authors' unit of analysis. In this analysis, the software will process the entire literature to find a description of the cluster of authors who have published their studies with the theme “Halal Food Quality”.

The results of software processing will display the author's name in a colored circle according to the type of co-authorship, or better known as network visualization. Related authors are marked with the same color and have a line between each other. The names that appear in the cluster show that they collaborate with each other in their studies. The size of the circle also indicates the number of papers written by the authors. The bigger the circle, the more papers written by the author.

Based on the picture above, the results show that clusters are produced if the literature is grouped by author's name in the Halal Quality Food themed study. The picture also shows the author's involvement in collaborating in writing a journal with the theme Halal Quality Food. There are 208 clusters of related authors which are marked with the same color and there is a fine line between one another. Among them there are clusters of red, blue, orange, green, purple, brown, and so on. Meanwhile, the authors listed in the gray circle and have no association with other circles indicate that the authors conducted individual studies and did not have co-authors. Based on the results shown, the red cluster is the largest cluster with 25 authors namely Ab Kadir MZ, Ab Kadir MZA, Abdulla NR, Abu Bakar F., Abubakar AA, Adeyemi KD, Aghwan ZA, Akhtar MT, Bello AU, Chaudhary SU Ebrahimi M. Goh YM Imran JC Kadir MZAA Kaka U. Mukhtar H. Mumtaz MW, Nakayinsige K., Sabow AB, Samar M., Sazili AQ, Shahzad-Ul-Hussan S., Shami AA, Tahir A., Zulkifli I.

One of the papers written by the author from the red cluster is Ahmad Faizul Shamsudin with a paper entitled 'Efficient halal bleeding, animal handling, and welfare: A holistic approach for meat quality'. The study discusses the balance between halal animal slaughter procedures related to science and animal welfare. In this study, it was found that competent procedures for handling animal slaughter, use of appropriate tools, and efficient slaughtering processes according to halal procedures according to Islamic teachings were able to maintain the quality and

Figure 1: Co-Authorship Authors
integrity of the animal's meat and were able to increase consumer satisfaction and food safety.

2. Organizations

VOSViewer software can display a bibliometric map of the authors' organization with the theme Halal Food Quality. The bibliometric mapping of the organization can be seen in the image below. Organizations that are larger in shape and lighter in color indicate that many writers come from this organization and produce journals with themes related to Halal Food Quality.

![Figure 2: Co-Authorship Organization](image)

Organizations that have larger shapes and lighter colors indicate that many writers come from these organizations and produce journals with the theme Halal Food Quality.

Co-authorship by organization is the unit of analysis in this type of co-authorship analysis determined by the number of documents co-authored by the authors. From the results of this bibliometric, it provides an overview of the most popular author-affiliated institutions in the literature with the theme Halal Food Quality.

In the picture of the co-authorship organization, the results used are generally in the form of density visualization. That is, each item of the name of the institution is depicted in a yellow halo without indicating the relationship between items. The brighter the light, the higher the density and the greater the number of papers produced by authors affiliated with the institution.

The picture above shows the collaboration that exists between organizations in publishing journals with the theme of Halal Food Quality. Of the 595 organizations and 2 that exist. This shows that studies on Halal Food Quality are published by authors from various institutions in different countries, so it can be concluded that the theme of Halal Food Quality is already quite popular among researchers and experts in various parts of the world.
3. Countries

Next is Co-Authorship by country, which shows the relationships built by countries in the publication of a paper on the theme of Halal Food Quality.

![Figure 3: Co-Authorship Countries](image)

In this type of co-authorship analysis, another unit of analysis that can be generated is co-authorship countries which show the names of the most popular countries in the publication of papers with the theme Halal Food Quality. The most popular country can be calculated either based on the number of authors who come from that country or based on the number of papers conducting studies in that country, meaning that it is calculated from the number of times the number of countries that are the object of study.

In this study, the countries listed and emerging from the software process results are based on the number of authors originating from that country. Based on the co-authorship countries above, the results shown are network visualizations in the form of a circle with each item having a relationship and colored according to its cluster division.

Based on the picture above, from 45 countries, with 12 clusters the largest collection of items that are interconnected. This means that these countries collaborate with each other in publishing papers. Malaysia and Indonesia are the countries that publish the most journals and collaborate with each other. Other countries which also publish many journals after Malaysia and Indonesia are United Kingdom, Thailand, Pakistan, Australia, China etc. These results indicate that writers from Malaysia (158) and Indonesia (51) are the countries with the most collaborations with various other countries in making papers on the theme of Halal Food Quality.

Among the very interesting studies on the theme of Halal Food Quality is 'Developing a model of halal food purchase intention among Indonesian non-Muslim consumers: An explanatory sequential mixed methods research' which was published by a writer from Indonesia. This study aims to examine the effect on the purchase intention of non-Muslim consumers in Indonesia from the perception of halal food, quality of halal food and safety of halal food.
The results of the study found that acceptance of halal food has a significant impact on repeat purchases. Halal food quality has a significant effect on repeat purchases. The results of the study show that the halal food industry increases the purchase intention of non-Muslim consumers by considering 2 aspects, namely the quality of halal food and the safety of halal food (Purwanto H.et al 2020).

4. Bibliometric of Co-occurrence All Keywords

In addition to Co-Authorship, VOSviewer software can display bibliometric results with the type of Co-occurrence analysis. This type of analysis is carried out based on the relevance of items which are determined based on the number of documents that appear together. So that in the results of the Co-occurrence image with the all keywords analysis unit, papers that use these words will be analyzed by the software to then classify the level of occurrence quantity, the relationship between words, and the division of word grouping clusters.

The results of co-occurrence of all keywords are generally displayed in the form of network visualization. Each item in the form of a keyword is placed in a colored circle. Each color has a cluster, which indicates that the keywords in that color are related to each other. Then, between the keywords there are also several links depicted with colorful lines that connect one item to other items both in the same or different clusters.

The image above is the most widely used keyword in writing journals with the theme of Halal Food Quality and has links with other keywords as a form of expansion of the theme being discussed. Based on the results obtained, the word halal appears 57 times and is the most widely used word and has the highest association with the theme of Halal Quality Food. Then followed by keywords that often appear, namely food quality, halal food, article, human, food safety, etc. Interestingly, these various keywords have a very large relationship, which is indicated by the many small threads that appear in the co-occurrence all keywords image.
5. Bibliometric of Co-occurrence Authors Keywords

Next are the keywords most used by the author in the Islamic microfinance theme. Like the results of bibliometric co-occurrences in the all keywords analysis unit, the authors keyword analysis unit also displays a keyword description in the network visualization. However, in this author keyword, the words analyzed by the software are only specific to the keywords mentioned by the authors. The author's own keywords are a number of words that are placed on the first page under the abstract section listed to make it easier for the reader to see an overview of what words are widely discussed in the entire contents of the paper.

The results shown in the authors keyword co-occurrence image are different from the previous images. This is a form of overlay visualization that displays images in a certain frame (either circle or rectangle) and is colored not based on the cluster, but based on the year of publication. The purpose of the overlay visualization is to provide an overview of the development of keywords based on their evolution every year, so that it will be seen which keywords have been used for a long time, and which ones have been used recently.

In the overlay visualization, the color division is adjusted according to the year division, where the darker the color, the farther the publication year is and the lighter the color, the newer the publication year. While the size is adjusted to the number of appearances in the literature.

Based on the picture above, the word that is most often used by the author and has the most associations is the word halal which is related to many other words. Words that have been used for a long time and are marked with a dark purple color include the words animal welfare, quality, safety, food, halal certification, purchase intention, Indonesia, Malaysia, etc. These results indicate that the issue of halal food will always be one of special concern for Malaysia and Indonesia. It has also been proven that the quality of halal food is able to increase repurchase intention, food safety and of course animal welfare.
The keywords used recently by writers in 2019 to 2020 include, namely, Muslim, sustainability, satisfaction, Islamic attribute, consumer satisfaction, and so on.

The discussion on the relationship between halal food and supply chain is contained in a paper entitled 'Impact of supply chain integration on halal food supply chain integrity and food quality performance' written by Ali MH et al (2021). The purpose of this research is to explore the impact of integration SC (SCI) on the integrity of Halal food SC and, consequently, food quality. The results confirm that SCI, including internal, supplier and customer integration, has a significant effect on the integrity dimension of Halal food SC which, in turn, leads to the safety and quality of Halal food. Practical implication: The importance of SCI in SC halal food is highlighted in this study. The impact of SCI is contextualized in the integrity of SC halal food and food quality. Hence, providing a clear understanding to managers of SC implementation in the halal food industry. Originality/value: Based on RBV theory, this study contributes to limited research on the relationship between SCI from the context of the halal industry with a particular focus on food supply chain integrity and food quality.

6. Bibliometric of Co-Occurrence Index

Then, this study also obtained results in the form of co-occurrence with index analysis units that are often used by the author and are interrelated as shown in the picture above. This type of unit of analysis still shows up keywords, but specifically only those keywords that make up a list of pointers or identifiers in a particular web search box or a particular journal.

![Figure 6: Co-Occurrence Index](image-url)
analysis, anesthesia, animal, animal welfare, animals, food handling, halal slaughter, islam, meats, slaughterhouse.

An example of a paper that uses several keywords in this index cluster is a paper entitled 'Meat and meat-based products: Challenges and opportunities in halal food security' written by Ruzulan Z. et al. (2021) discussed that the demand for Halal meat and meat-based products among the Muslim population in Malaysia has increased because meat is an important food. Meanwhile, non-Muslims are also increasingly aware of the quality of halal meat, so access to halal meat and meat-based products is also increasing. However, local production of halal meat is insufficient to meet the demand and this has led to a dependence on imported beef to ensure that halal meat is available and accessible to people in Malaysia. For this reason, this study demands to focus on feasible opportunities to increase local meat production essential to ensure that meat supply is sufficient and halalan tayyiban.

This research found that the quality of halal food has been widely discussed in various published papers. This fact shows that the quality of halal food plays an important role in supporting public health in order to create social welfare. The role of halal food in the health sector is also in line with the third objective of the Sustainable Development Goals (SGDs), which is ensuring a healthy life and supporting well-being for all for all age groups. Through this goal, all institutions that are involved in the success of the SDGs strive to ensure a healthy life and improve people's welfare regardless of the age factor.

All health issues related to halal food are integrated into SDGs goal number 3, which is to ensure a healthy life and promote well-being for all at all ages. In addition to the problem of increasing immunity due to the COVID-19 pandemic for the community, also reducing maternal mortality (MMR) and infant mortality (IMR), controlling various diseases that have become a scary scourge where the main factor mostly comes from food, namely the heart, stomach, Liver, Tumor, Cancer, TB, Malaria and improvement of reproductive health

The development of the Halal Food Quality and SDGs health sector is of course highly dependent on the active role of all levels of society. In this case, the parties that really play a role are producers, the government and the world. In order to be able to create good health inclusion for the whole community through efforts to consume quality food with halal standards that have been able to meet all types of aspects of international and national food assessments

CONCLUSION

The focus of this research is to try to find out how far the theme of halal food quality has developed in the scientific literature. The results show that there have been quite a number of paper publications on the theme of halal food quality in the last... year from... to..., there have been 898 studies involved in the theme of halal food quality.

Visualization of the bibliometric mapping shows that the development map of research on halal food quality is divided into types of co-authorship and co-occurrence, with the most popular authors in the results of this bibliometric research being in the red cluster consisting of 25 authors namely Ab Kadir MZ, Ab Kadir MZA, Abdulla NR, Abu Bakar F., Abubakar AA, Adeyemi KD, Aghwan ZA, Akhtar MT, Bello AU, Chaudhary SU Ebrahimi M. Goh YM Imlan JC Kadir MZAA Kaka U. Mukhtar H. Mumtaz MW, Nakyinsige K., Sabow AB, Samar M., Sazili AQ, Shahzad-Ul-Hussan S., Shami AA, Tahir A., Zulkifli I.

Whereas in co-occurrence, the most popular keywords from the results of the analysis unit are all keywords, author's keywords to index keywords ranging from 7 keywords namely, halal, food quality, halal food, animal welfare, safety, halal certification, purchase intention. The findings from this study are the standards for assessing quality food on an international and national scale in accordance with the concepts of halal and tayyib. So that halal food can be an indicator to see a quality of food, apart from that because this is an interesting and sustainable study it makes it very relevant to the SDGs especially on the third goal, which is to ensure a healthy life and promote prosperity for all people at all ages.

It should be noted that the purpose of this study is to present an overview of research trends on the theme of halal food quality, but this research has only been limited in recent years. Although research has been carried out using specific bibliometric indicators so that readers can get a general representation of the most significant data, the results presented are still dynamic and may change over time.
REFERENCES


