

Halal Supply Chain Management: A Bibliometric Study

Syarifa Hanoum^a, Mushonnifun Faiz Sugihartanto^{*a}, Hana Zuhriya^a

^a Department of Business Management, Faculty of Creative Design and Digital Business, Institut Teknologi Sepuluh Nopember, Surabaya, 60117, Indonesia.

ABSTRACT

This research aims to provide a literature review using a bibliometric approach to analyze research trends in Halal Supply Chain Management (HSCM). It examines 149 papers from the Scopus and Web of Science databases during 2011-2021. It involves citation and co-citation analysis with the help of VOSviewer software to find out information about research trends, journals, authors, countries, citations, methodology, and the research content. The analysis divides HSCM research into five research clusters: (1) Halal Food Industry; (2) Challenges and Opportunities of Halal Logistics; (3) Integrity Guarantee of Halal Food; (4) Integrity Guarantee of Halal Logistics; (5) Halal Logistics Performance. This study helped to explore halal supply chain management in practice and be useful for researchers and practitioners to know the current development of HSCM research and map the potential topic for future research.

Keywords: *Halal Supply Chain Management, Bibliometrics, Halal Products.*

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1 Introduction

A halal product has become a consumer need, especially for Muslim consumers [1]. People are starting to care and are very concerned about halal certification [2]. Halal comes from a word taken from Arabic, which means permissible. Halal itself is a practice applied to every Muslim's activities, and this is not only a commandment, but it becomes very obligatory for a Muslim to obey [3]. The word "Halal" comes from Qur'an Surah Al-Baqarah verse 168:

"O, people! Eat from (food) that is lawful and good on earth, and do not follow the devil's steps. Indeed, Satan is a real enemy to you."

In the translation of the verse, Halal will always come with favour or *Tayyib*, where these two things will always come together [4]. It means the halal product should have a quality advantage over non-halal products because *Tayyib* guarantees quality. Therefore, it is not enough to declare Halal products by just relying on the certification; but must also ensure that the production processes follow halal standards, such as covering the procurement of raw materials, processing, storage, packaging processes, distribution processes, sales, and the appearance of the product [5].

It is essential to note that global demand for halal products will always increase along with the global development and distribution of the Muslim population [6]. Currently, there is a known projection that the growth of Muslims will increase from 1.6 billion in 2010 to 2.7 billion in 2050, and between 2010 and 2050, the world population will increase to 9.3 billion, which means that the world's population has increased by 35% [7].



Fig. 1a Top 5 Halal Food Consumer Market. Fig. 1b Top 5 Countries Exporting to OIC
Outlook of the Halal Food Industry [8]

Based on the data above, halal products and demand increase when the Muslim population increases. Several factors cause public awareness regarding halal products to continue to increase, such as the existence of a belief, or belief that the command to use Halal and *Tayyib* products exists in Islam, which is this belief that makes people continue to obey Islamic religious orders and stay away from the prohibition [2]. In addition, based on data on the export and import of halal food above, halal food is closely related to Muslim communities or Muslim countries and closely related to non-Muslim communities or countries with a non-Muslim majority. Brazil is known to have an enormous contribution to the halal food supply [8]. Besides that, the expenditure or consumption figures for halal food and beverages worldwide in 2017 reached US\$ 1,303 billion and are estimated to reach US\$1,863 billion in 2023. Figure 1a shows the top five countries as halal food consumer markets and it comes from countries with large numbers of residents, thus, this is the reason why Malaysia is not listed as top 5. The demand for halal food and beverages comes from the Muslim and non-Muslim communities that care about health and food hygiene issues [9].

Based on the previous discussion regarding halal products, the halalness of a product is assessed from the existence of halal certification and must be reviewed further regarding the process of producing the product. When discussing the production process that must pay attention to sharia, it is closely related to the halal supply chain [5]. Based on existing research, discussions on the halal supply chain began in 2008. Research on the halal supply chain continues to be carried out and has experienced significant developments. The following graph shows the development of halal supply chain research from the scopus database.

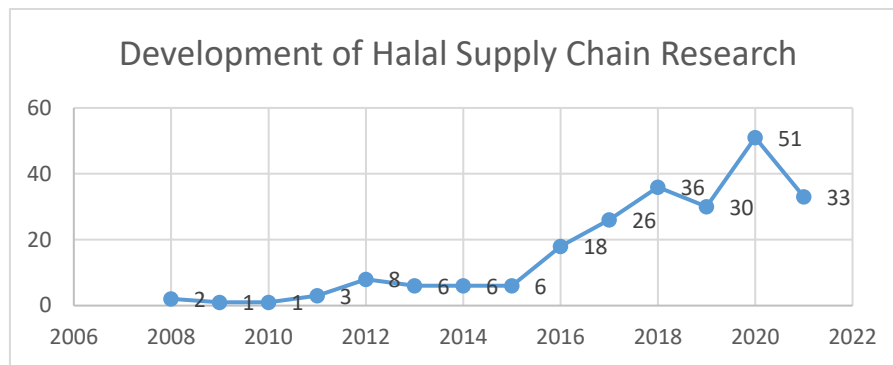


Fig. 2 Development of Halal Supply Chain Research

Research related to halal supply chains, especially those using the bibliometric method, is new [6], but based on the projected data on Muslim population growth in the previous discussion, research related to halal supply chains is predicted to grow. Therefore, it is essential to know the trend of research development, considering that there will always be an increase in the world Muslim population [7].

This research extends previous research in Halal Supply Chain using a bibliometric method. There is a research which only focused on the halal integrity of the food supply chain [1], while other papers only discussed food safety and halal food in the supply chain [10]. Another research also examined Halal Value Chain [11], but the research area coverage is too narrow. Contrastingly, other papers was too broad as it explored all Halal area research [12]. In addition, another research also explores the Halal Supply Chain literature [6]. However, it only used a single database (Scopus) which is too narrow as the novelty of the HSCM area.

Therefore, this study extends the literature by expanding the Halal Supply Chain Management research area. It also can provide a new understanding of the importance of the halal supply chain and maintain the halalness of the products they consume. We use a bibliometric study to know research trends related to the halal supply chain. Moreover, the bibliometric approach is prominent in systematically building a scientific structure of the research topic [1]. This study will also complement the shortcomings of previous studies, which mostly only focused on halal food. Therefore, this research will expand to the halal supply chain in many products.

2 Research methods

2.1 Bibliometric Analysis

Bibliometrics is an analysis based on the bibliography contained in an article or publication and is a quantitative method [13]. This analysis was carried out from a publication to classify a particular phenomenon from all the data. The various data found, including those related to academic fields, can be deeply analysed using bibliometrics [14]. Bibliometrics is a field that uses quantitative methods to evaluate academic productivity. This quantitative analysis of the scientific literature is changing rapidly with new evaluation tools, parameters, and

normative data. The most widely recognised bibliometric parameter for evaluating individual authors is the number of publications, followed by the number of citations [15].

The bibliometric method has three main functions: a descriptive analysis function, an evaluation function, and monitoring the development of science and technology. As a tool for descriptive analysis, bibliometrics will present reports related to research publishing activities at the state, provincial, city, or even institutional level and analyse differences in productivity between levels. Then, an assessment of the performance of a research unit is conducted as complementary data for standard evaluation procedures. Finally, bibliometric data can undoubtedly be used as a benchmark for monitoring science and technology because research conducted longitudinally or raising similar topics in different periods will help identify research areas developing or experiencing setbacks [16].

2.2 Citation Analysis

Word citation is another term for citation that means work or research quoted or rewritten in a study [17]. As an action carried out in a social process, quoting plays a vital role in the communication process in the scientific field, and this will be done through an article publication. When writing an article, the author of an article or a written work will quote similar works produced by other authors before. The quoting process connects the writer of the article and the author of the work just because they quote as a complement to the scientific work carried out [18].

Citation analysis can be used to discover more about scientific works' quality, influence, and impact through citations [18]. In addition, citation analysis can also be used to examine the average citation in each article based on the year of the article, the type of article quoted, and others [18].

2.3 Co-Citation Analysis

Co-citation is an action to rewrite two documents carried out together, published in at least one document, where two documents are analysed simultaneously and then rewritten. It should be noted that the more documents issued due to the rewriting of the two documents, the frequency or strength of co-citation is referred to as the frequency or strength [19]. Co-citation analysis determines the relationship between articles based on citations. A relationship is assumed between two articles when a third article cites the two articles simultaneously. The strength of linking articles cited together is proportional to the number of articles cited simultaneously. It is possible to identify a network of articles and authors. The network provides clues regarding the development of the specialisation of a science. Moreover, this will be very helpful in determining new research topics [16].

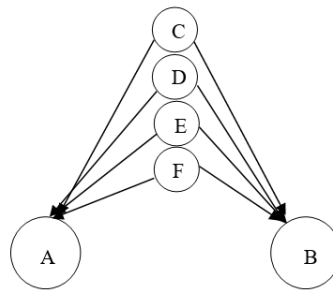


Fig 3. Co-Citation Analysis Illustration [20]

Figure 3 is an illustration of co-citation. For example, there are several pieces of literature, such as literature A, B, C, D, E, and F, where A and B are literature cited simultaneously by literature C, D, E, and F. It shows that literature A and B is a co-citation where the article is quoted jointly by at least one subsequent piece of literature.

2.4 Data Collection and Filtering

The data collection and data filtering were conducted by checking the publication database. In this case, we chose Scopus and Web of Science as the databases for this research. After that, the search strings were determined to find the related article. The subject area is limited to business, management, and accounting, as we want to focus on this research area. Only article and conference proceedings were analysed, and the language was limited to English. There are many duplications from both databases, and they were expelled. From around 190.063 articles, we determined the selection and exclusion criteria. First, the paper that involves the halal industry was chosen to focus on this industry. We also choose papers that present the development of the Halal supply chain in practice. Next, we exclude the paper outside the service industry and with keywords outside the topic. Then, the manual filtering was done by reading the title of the publication, abstract, and keywords according to those used in the search, namely article titles, keywords, and abstracts, to determine whether the publication is appropriate with this research. This manual screening was carried out on data obtained through Scopus and the Web of Science. The process is illustrated in Figure 4 below.

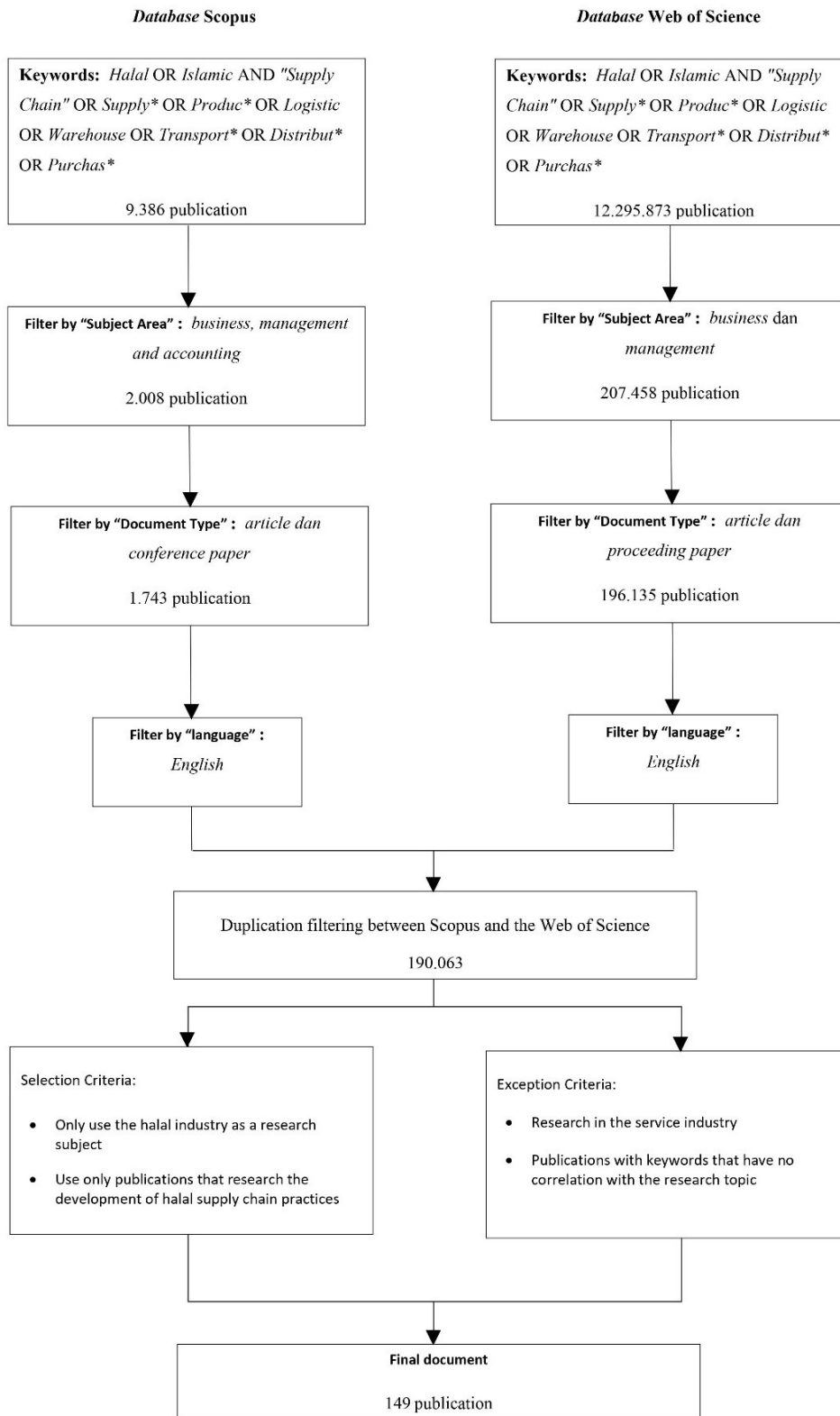


Fig. 4 Research Methodology

3 Results and discussion

3.1 Descriptive Analysis Stage

The descriptive analysis stage provides an overview of HSCM research topics. Statistical data is also presented to know the number of publications, paper origins, and methodology used. Initially, the number of publications that exist each year from research related to HSCM is portrayed.

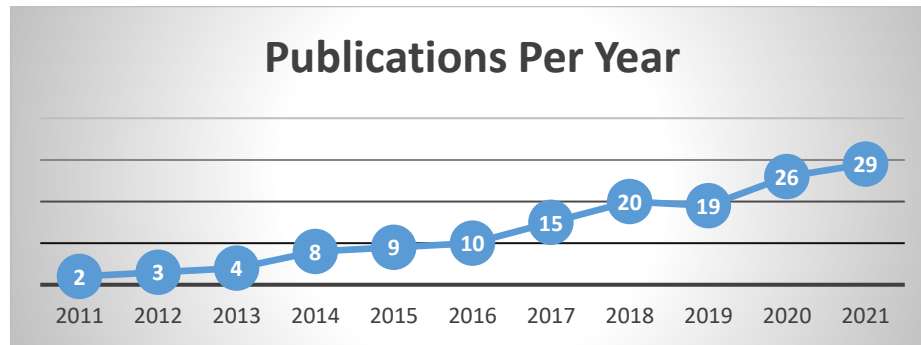


Fig. 5 Publications per Year

Figure 5 depicts the significant developments of research in HSCM. Although the developments were not very drastic in the first three years, they rose significantly in the following years. Therefore, the HSCM topic received much attention from researchers. Next, data regarding countries that contribute to the HSCM topic is presented.

Table 1. Distribution of Publications by Countries

Countries	N	%	Countries	N	%
Malaysia	61	55	China	1	1
Indonesia	20	18	France	1	1
India	8	7	Italy	1	1
Australia	3	3	Lebanon	1	1
Japan	2	2	Nigeria	1	1
Korea	2	2	Oman	1	1
United Kingdom	2	2	Pakistan	1	1
Azerbaijan	1	1	South Africa	1	1
Bangladesh	1	1	Turkey	1	1
Brunei	1	1	USA	1	1

Table 1 shows countries that contribute to the HSCM topic. Twenty countries are researching the topic of HSCM. It can be seen that researchers from Malaysia and Indonesia published 70% of the research, and in India, 61, 20, and 8 papers, respectively. The rest of them are spread out in 17 countries.

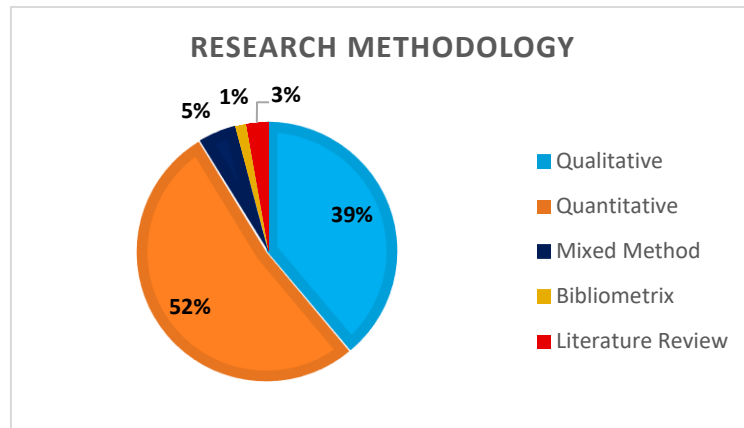


Fig. 6 Overview of Research Methodology

The next stage is describing the research methodology. There are qualitative, quantitative, mixed methods and literature reviews. Figure 6 shows that the most widely used methodology is the quantitative method, which accounts for 52%, followed by the qualitative method with a percentage of 39% and lastly are mixed methods and literature reviews, 5% and 4%, respectively.

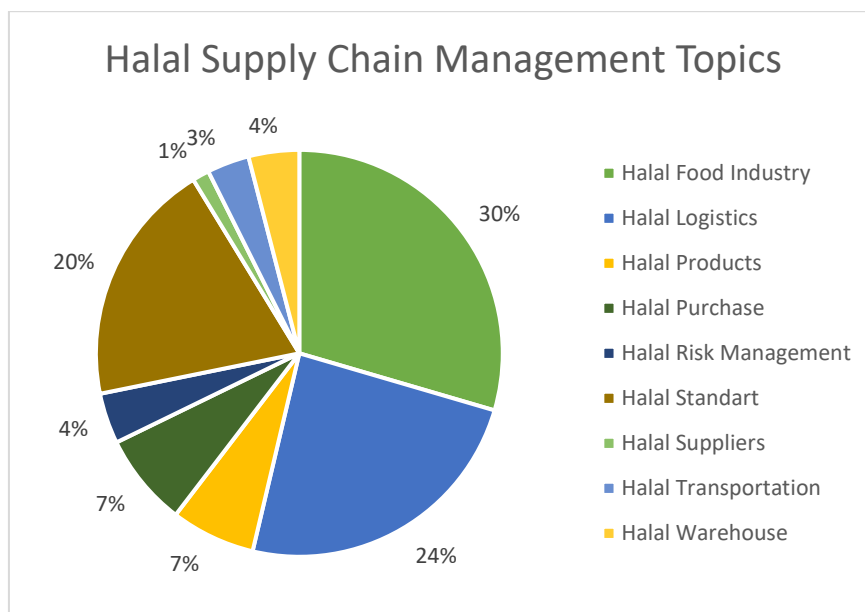


Fig. 7 The Proportions of Halal Supply Chain Management Topic

Figure 7 illustrates the topic of the chosen papers. Currently, the HSCM research topic is still dominated by Halal Food, which is almost one-third of all publications, followed by Halal Logistics and Halal Standard, 24% and 20%. The rest of the topics are very few, less than 10%.

3.2 Citation Analysis Stage

The citation analysis stage carries out several analyses, including citation analysis, co-citation analysis, and co-occurrence analysis. In addition, this stage aims to find out research trends based on the keywords used by researchers.

Citation number analysis

In the analysis of the number of citations, there are two types of citations available, namely local citations and global citations, where these are presented along with the number they have. Table 2 contains the authors' names, each with a different number of local and global citations. The number of local citations indicates the size of the frequency of citations that occur in a publication cited by other publications in the chosen publications of this study (149 publications). In comparison, the number of global citations is the frequency of a publication cited by other publications in both Scopus and the Web of Science data sources.

Table 2. Researchers and the Number of Local Citations and Global Citations

<i>Author (year)</i>	Local Citation	<i>Author (year)</i>	Global Citation
Zailani S; Iranmanesh M; Aziz K (2017)	7	Tieman M (2011)	156
Tieman M (2011)	6	Tieman M; Van d.v.j; Ghazali M (2012)	119
Tieman M (2015)	5	Olya H; Al-Ansi A (2018)	103
Tieman M; Van d.v.j; Ghazali M (2012)	5	Ab T.M; Hamid A; Zulfakar M (2015)	75
Ab T.M; Hamid A; Chin T (2016)	4	Omar E; Jaaf ar H (2011)	70
Zulfakar M; Chan C; Jie F (2018)	4	Haque A; Sarwar A; Yasmin F; Tarofder A; Hossain M (2015)	69
Maman U; Mahbubi A; Jie F (2018)	4	Soon J; Chandia M; Regenstein J (2017)	64
Ab T.M; Sawari S; Hamid A; Chin T (2016)	4	Ngah A; Zainudin Y; Thurasamy R (2017)	61
Tieman M; Ghazali M (2013)	4	Tieman M; Ghazali M; Van d.v.j (2013)	57
Ngah A; Zainudin Y; Thurasamy R (2015)	3	Ali M; Tan K; Ismail M (2017)	57
Ab T.M; Hamid A (2014)	3	Ab T.M; Hamid A (2014)	54
Tieman M; Van N.M (2014)	3	Tieman M; Ghazali M (2013)	46
Tieman M; Ghazali M; Van d.v.j (2013)	3	Haleem A; Khan M (2017)	44
Omar E; Jaafar H (2011)	2	Said M; Hassan F; Musa R; Rahman N (2014)	38

Table 2 shows the number of local citations and global citations. It reveals that local and global citations are not always linear, meaning that the author with the highest number of global citations does not necessarily have the highest number of local citations. For instance, the researcher with the highest local citations [21] has seven local citations. However, this research has a low number of Global citations. On the other hand, the highest number of global citations is owned by [22], reaching 156 global citations. Interestingly, this research is also the second most cited in the article Local Citation, hitting six citations. It means that this research is recognised both locally and globally.

The result in Table 2 also proves the significant difference between the number of local and global citations. It happens because the comparison of data for local citations is only on data selected to be processed with VOSviewer with a total of 149 data, while for global citations, it has a high number of citations because the comparisons made are based on the Scopus and Web of Science. In general, the number of citations shows that research related to the HSCM is an interesting topic for researchers in wide-range topics.

Citation Network Visualization

Data was visualized in the citation network visualisation stage using VOSviewer software. There were nodes and connecting lines between nodes, forming a network, meaning they have linkages. VOSviewer will automatically classify the network into several clusters or groups based on the similarity of the topic and the citations made by researchers in existing publications. The characteristic distinguishing one cluster from another is based on the colours so that the cluster will have the same colour as adjacent nodes. VOSviewer will not display unrelated publications between local citations or have (links = 0).

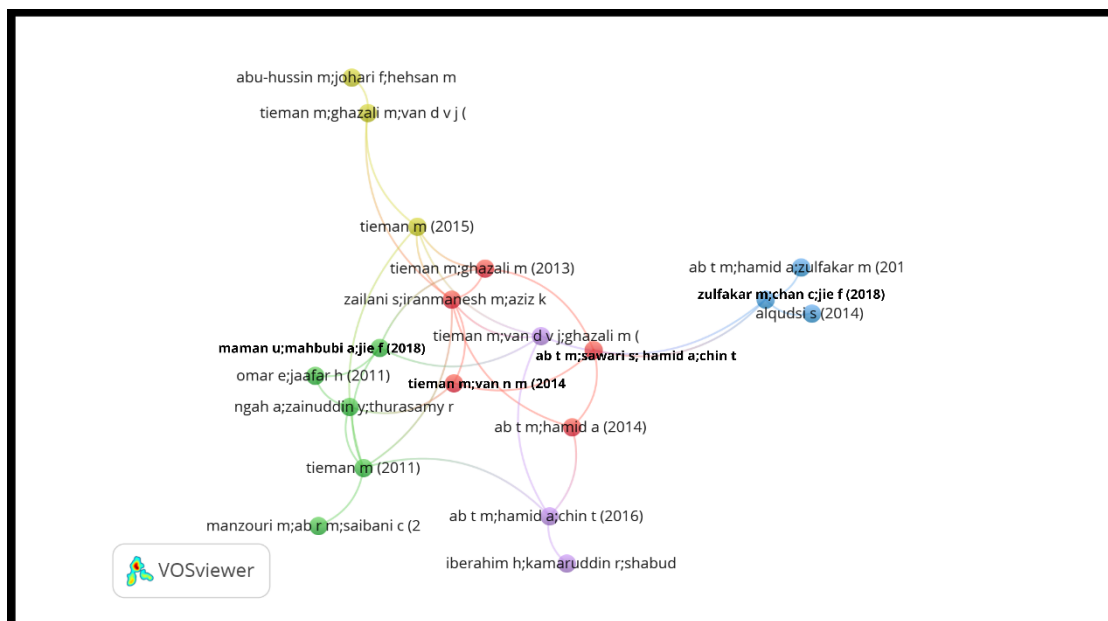


Fig. 9 Citation Network Visualization

Figure 9 depicts publications that quote each other. Nineteen publications can be displayed out of the total publications. The data presented are only publications with local citations. The different colour there shows several clusters of the articles. There are five different colour nodes, meaning five clusters or groups of citations from published data.

Cluster 1 - Halal Food Industry

The first cluster connects some studies from Zulfakar et al. (2018), Alqudsi (2014), and Talib et al. (2015). Alqudsi (2014) discusses halal products and their requirement to fulfil the HSCM process, while Talib et al. (2015) discuss the critical success factors of HSCM. Zulfakar et al. (2018) expanded those two articles by discussing halal requirements of food products.

Cluster 2 - Challenges and Opportunity of Halal Logistics

The second cluster shows that five studies have connected each other. For example, research from Tieman & van Nistelrooy (2014) cited Tieman & Ghazali (2013) as providing a similar discussion regarding how a company can see "halal" as an excellent opportunity to run its supply chain. In addition, HSCM is seen as an excellent strategy to solve its supply chain weaknesses and deal with its business's threats. Therefore, the five studies have thoroughly discussed how to respond to an opportunity and seize the opportunity with a comprehensive strategy starting from fostering good relations with supplier partners to seeking halal certification to cover the weaknesses and threats of the existence of the HSCM.

Cluster 3 - Integrity Guarantee of Halal Food

The third cluster discusses the integrity guarantee of Halal Food. Five studies cite each other in this cluster. For instance, Akhmad Mahbubi (2015) cited Tieman (2011) and Omar & Jaafar (2011). This cluster discusses how HSCM can help firms have an integrity guarantee to produce genuinely "halal" and "tayyib" meat. These studies take examples from livestock industry cases on how efforts should be made to guarantee HSCM, especially in slaughter.

Cluster 4 - Integrity Guarantee of Halal Logistic

The fourth cluster discussed halal logistics, halal certification, and maintaining the integrity of halal products from the point of production to the end consumers. While the previous cluster only focused on food, this cluster focused on the whole supply chain system. It was started by research from [26], which discussed consumer preference in choosing food guaranteed to be Halal in its logistics process. For instance, the separation between halal and non-halal meat when it is stored, transported and placed in the store. This study reveals that Muslim countries intend to pay more for a halal guarantee in their supply chain.

The above research is cited by Tieman (2015). It proposes a halal cluster model to improve halal food industries' production and trading. The cluster is based on five pillars: Muslim Consumers, education and research, halal integrity network, halal supply chain and enabler or facilitator. Moreover, Abu-Hussin et al. (2017) discuss consumer behaviour regarding purchase intention of halal-certified products. These research are categorised in the same cluster as they cite each other.

Cluster 5 - Halal Logistics Performance.

The last cluster connects three studies from Tieman et al. (2010), Iberahim et al. (2012), and [33]. The first empirical study discusses the most optimum HSCM framework to improve logistics business processes. The second research discusses the Malaysian government's problems and challenges in its halal logistics system. It yields several strategies to tackle the challenges to improve its performance, such as RFID technology, web-based real-time information, cold chain system in the truck, and other cutting-edge technologies. Finally, the last research revealed the relationship between halal certification and logistics performance improvement. All previous research is connected as they cited each other.

Based on the analysis that had been carried out, the top three studies that have a significant contribution and influence on HSCM are:

1. Tieman, 2011 "The application of Halal in supply chain management: In-depth interviews."
2. Tieman et al., 2012 "Principles in the halal supply chain management."
3. Omar & Jaafar, 2011 "Halal supply chain in the food industry - A conceptual model."

3.3 Co-Citation Analysis Stage

After conducting a citation-related analysis, the next step is to conduct a co-citation analysis. First, the data is processed using the VOSviewer software, and then the co-citation feature is selected to produce a more specific visualisation related to the co-citation network. After processing with VOSviewer by utilising the co-citation feature, a mapping network shows the relationship between one publication and another. Figure fifteen shows the visualisation of a co-citation network. The connected lines between articles mean that the publications are cited together.

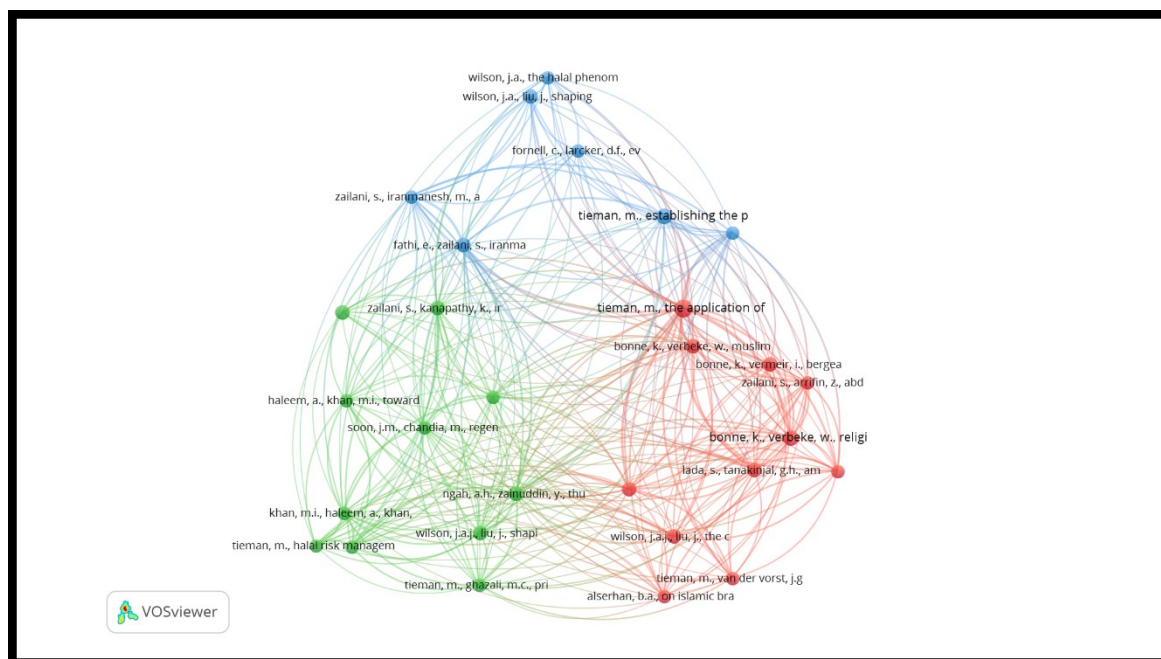


Fig. 10 Visualisation of Co-Citation Network

The visualisation consists of three clusters, shown from the colour differences. Each node represents the research, and the colour similarity means they have similar topics. Figure 10 shows that research on the halal supply chain was started by Tieman (2011), which discusses the basic requirements for implementing a halal food supply chain and halal integrity. This research is connected to Tieman et al. (2010), which discussed the new framework as a form of optimising the design of the halal supply chain. Those are connected to Ab Talib et al. (2015) research, which identified the critical factors determining success in implementing halal supply chain practices in this study.

Furthermore, this research is connected to a study by Khan et al. (2018) that examines the definition of comprehensive and inclusive Halal Supply Chain Management more deeply. It aims to assist future researchers in reducing the difficulty in building theory, defining, and examining the relationship among Halal Supply Chain Management components. This research is critical because definitions without clear boundaries can continue to hamper Research and Development (R&D) in this growing field of halal supply chains.

In the next stage, an analysis related to the co-citation network was carried out in each cluster. The co-citation analysis shows that the cited publications have the same topic of discussion. Furthermore, this analysis reveals that Tieman (2011) and Tieman (2013) are researchers connected to almost all nodes in the co-citation cluster. Therefore, the publications of these researchers have been quoted together by other publications.

3.4 Research Trend Analysis

At this stage of analysis, it is carried out to find out in a study related to the halal system in the supply chain what keywords are often used and appear in the study. The emergence of these keywords can be seen through the research title and abstract.

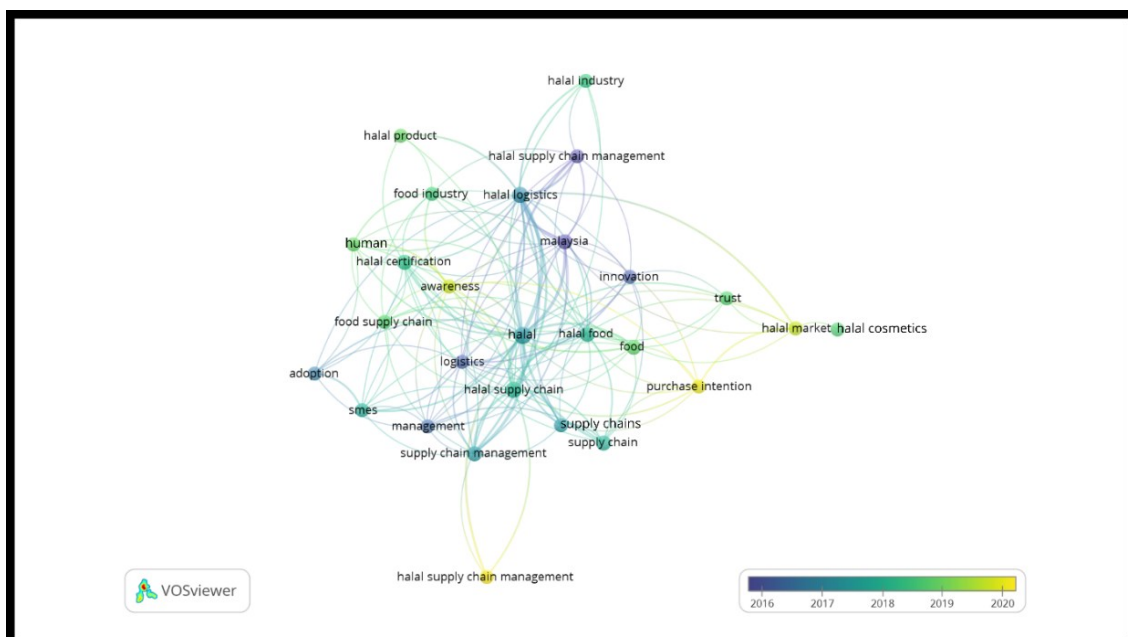


Fig. 11 Keyword Trending Network Visualization

Figure 11 visualises the most frequent keyword from all articles. The darker the node colour, the older the year of research using that keyword. In contrast, the brighter colour means research using keywords that have appeared in recent years.

From 2016 backward, the most popular keywords are "halal supply chain management," "Malaysia," "innovation," "logistics," and "management." Then, from 2016 onwards, around 2017 to 2019, the most frequently appeared keywords were "halal logistics," "halal," "supply chain management," "SMEs," and "supply chains."

One of them is research by Mahidin (2017). It mainly discusses the challenges Food and Beverages SMEs face in Malaysia when integrating halal integrity in Halal Food Logistics to the Logistics Service Provider. The increasing demand for halal products from Muslim consumers, especially in the food and beverage sector, increases the potential for implementing halal food logistics services. However, current conditions indicate that the implementation of halal food logistics is low due to several challenges emerging throughout the halal supply chain. These challenges are described from two perspectives: logistics service providers (LSPs) offering halal food logistics services and halal product manufacturers, specifically on small and medium enterprises (SMEs). That is why the "SMEs" keyword appears in the middle of the keyword "logistics" because this is an expansion of research related to "logistics".

The keywords that often appear next are related to "food industry", "halal industry", "halal product", "food supply chain", "food", "trust", "human", "halal cosmetics", and "halal certification.". These keywords often appear when the articles discuss halal food. One of the discussions on halal food is in a study by Azmi et al. (2020). This study mainly focuses on identifying the risk of the halal food supply chain. According to this research, identifying risk can be the preliminary step to proposing either a reactive or proactive strategy. This research reveals that HSCM research was expanded to discuss risk in the supply chain.

The keywords that frequently appeared in the latest timeframe, ranging from 2020 to the present, are related to "halal market", "purchase intention", "awareness", and "halal supply chain management". It reveals that research on this timeframe has been expanded from only focusing on "halal food" to "halal market", and "purchase intention", and also related to "awareness".

The development of research trends or keywords that often appear recently has a very close relationship with the keywords above because, in the end, the purpose of research related to the halal supply chain process is to be able to provide good service to consumers, who need to be able to consume halal products. Therefore, research related to the halal supply chain is now also starting to have an impact, one of which is related to purchase intentions, and of course, this research will be very much needed and valuable for the future.

3.5 Discussion

The results reveal that the topic of discussion regarding the halal supply chain has grown significantly in the last ten years, which is more about how to guarantee the halal integrity of a product. Through this analysis, there are five clusters of halal supply chain management

research: the first topic is the Halal Food Industry, where research was conducted by Zulfakar et al. (2018). It discusses the processes and requirements of the halal food supply chain in the food industry, citing research by Alqudsi (2014), which discusses halal products and various halal supply chain requirements that must be met [3].

The second topic is the Challenges and Opportunities of Halal Logistics. In this topic, Tieman & van Nistelrooy (2014) cites Tieman & Ghazali (2013), who outlines how companies see "halal" as an opportunity and how to overcome the existing barriers.

The third topic is the Integrity Guarantee of Halal Food; where this topic, it is known that research by akhmad mahbubi (2015) cites Tieman (2011) and Omar & Jaafar (2011). It discusses the halal system in the food supply chain, which focuses on livestock to produce meat that is genuinely "halal" and "*tayyib*".

The fourth topic is the Integrity Guarantee of Halal Logistics. Abu-Hussin et al. (2017) cite Tieman et al. (2013), who discuss halal logistics, certification, and maintaining halal integrity products from the point of production to the consumer's final point of purchase. It broadly focuses on ensuring the product's halal integrity.

The fifth topic is Halal Logistics Performance, which Ab Talib et al. (2016), citing Iberahim et al. (2012), generally discusses the condition of halal logistics performance requiring certain policies and design parameters. After being identified, it turns out that policies and parameters still have low performance, so the success rate of implementing the halal system in logistics is still shallow.

In the co-citation analysis, Tieman (2011) and Tieman (2013) are publications with a network connected to almost all nodes in the co-citation cluster, meaning that these two publications have been quoted together in many other publications. The research trends show that the keywords that often appear include "halal", "halal logistics", "halal supply chain", and "halal food". It means that research related to halal supply chains is identical to these keywords because keywords will always be related to each other. However, there are also new keywords that have started to emerge, including "halal market", "purchase intention", and "awareness."

4 Conclusion

This study highlights the development of HSCM research in the last decades using the bibliometrics approach. It reveals that the highest global and local citation is achieved by the article entitled "The application of Halal in supply chain management: In-depth interviews", written by Marco Tieman in 2011 [22]. In addition, the highest local citation is shown from article entitled Halal logistics opportunities and challenges, written by Suhaiza Hanim Zailani [21].

The analysis also divides HSCM research into five clusters: (1) Halal Food Industry; (2) Challenges and Opportunities of the Halal Logistics System; (3) Integrity Guarantee of Halal Food; (4) Integrity Guarantee of Halal Logistics; and (5) Halal Logistics Performance. The co-citation analysis reveals that Tieman's research in 2011 and 2013 has a network almost connected to all nodes in co-citation clusters. It means these publications are ever cited

together in other publications. The trend analysis shows that the most frequent keywords that appeared are "halal", "halal logistics", "halal supply chain", and "halal food". However, some new keywords have recently appeared, such as "halal market", "purchase intention", dan "awareness".

In general, it is essential to maintain the *halalness* integrity of the product by implementing the halal system in the whole supply chain. It is because even if only one process is not guaranteed using the halal principle, the halal integrity will be doubtful, resulting in potential product contamination with non-halal and making the product not guaranteed to be halal and "*tayyib*".

The implementation of HSCM in practice is still facing numerous challenges, especially regarding the different perspective on halal between countries. This mainly happens because there is still a lack of standards among those countries. Therefore, it is essential to create written regulations and uniform halal standards among multiple countries to eliminate confusion or differences in understanding among practitioners of the halal supply chain.

This research has limitations, such as the database sources only refer to Scopus and Web of Sciences. Future research needs to increase the number of databases used, such as ProQuest, Taylor and Francis, ScienceDirect, Wiley, Sage, and others, to broaden the articles covered as the novelty of HSCM research. Furthermore, the software used is VOSviewer, which has some limitations, such as not reading the data source directly from different databases. Therefore, the coding process needs to be conducted. Other software that might be used includes R Studio, keylines, gephi and others. For instance, Gephi can use a particular algorithm to customise the visualisation, and Keylines can visualise the data related to network behaviour, structure, and interactions.

Future research also can discuss the implementation of HSCM in service industries, as no published research has been conducted in this area. It can provide a comprehensive comparison between the manufacturing and service industries. The keywords also can be expanded to increase the coverage of the articles.

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