

Review

Revisiting the Halal supply chain: A bibliometric visualization and future research direction

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Abstract: In the past twenty years, market dynamics have had a substantial impact on different industrial sectors, ultimately influencing their level of competitiveness. The field of operation management in terms of halal logistics has gained considerable attention and recognition among scholars and researchers in the academic community, as evidenced by the growing body of literature in the field of management. This article presents a bibliometric examination of scholarly literature pertaining to the halal supply chain in the domain of business. In addition, bibliographic material is organized and analyzed through the utilization of software tools such as VOSviewer, R Studio, and Microsoft Excel. A comprehensive analysis was conducted on a dataset comprising 278 scholarly papers that had been indexed by Scopus. The process of identifying and categorizing relevant research on the topic was carried out using certain criteria, including journal publications, articles, authorship, and geographical origin. The results suggest a significant rise in scholarly investigations carried out in this specific domain during the previous two decades. Our study also acknowledges several countries as the most productive domains of halal supply chain studies. It is imperative to recognize, though, that scientific advancement continues in this field, as well as in all other areas of study, and that data undergoes significant changes over time. This article examines potential avenues for future research, incorporating quantitative analysis and collaborative inquiry undertaken by researchers.

Keywords: Halal; supply chain; Halal supply chain; bibliometrics

1. Introduction

Over the course of the last two decades, the phenomenon of globalization, together with the evolving consumer lifestyle and preferences, has exerted a significant influence on various industries. These factors have played a crucial role in shaping the competitiveness of multiple industrial sectors (Kurniawati and Cakravastia, 2023). The Halal business, like many others, has been impacted by these issues. The term "Halal" originates from the Arabic language and finds its roots in the Islamic scripture, the Quran (Karia, 2019). It signifies permissibility and holds significance as one of the fundamental foundations of Islamic law, known as Sharia (Ab Talib et al., 2020). The utilization of Halal-labeled items within the Muslim community is associated with spiritual advantages, since it guarantees adherence to Islamic principles while purchasing such products (Sukardani et al., 2020).

In recent times, there has been an increase in the production of halal items in order to cater to the needs and preferences of the Muslim population (Rejeb et al., 2021; Sarwar et al., 2021). According to Fachrurazi et al. (2022), the concept of halal has been transitioning from a focus solely on halal products to including a broader perspective that includes the halal supply chain and value chain. Therefore, it is imperative to provide substantial support for the establishment and enhancement of resilient, effective, and efficient halal logistics in order to facilitate the growth and advancement of the halal business.

Utomo et al. (2020) posits that the halal supply chain can be conceptualized as a complex system of interconnected organizations that collaborate and coordinate their efforts to effectively manage, regulate, and enhance the movement of materials and information in accordance with the fundamental principles of shariah. The preservation of halal integrity across the whole supply chain, from the origin to the point of consumer acquisition, is of utmost importance (Fachrurazi et al., 2022; Secinaro and Calandra, 2020; Shahabuddin et al., 2020). The implementation of supply chain management falls under the purview of the brand owner, a task that presents challenges due to the intricate and extensive nature of halal supply chains (Hidayat et al., 2021).

Therefore, based on the contextual information presented, the main aim of this research is to build upon prior studies and provide a thorough examination of halal logistics research within the framework of an organization. The attainment of this objective will be accomplished by employing essential bibliometric methodologies, namely performance analysis and scientific mapping, as delineated by Rusydiana et al. (2023).

A bibliometric analysis involves the systematic evaluation of the metadata present in a collection of academic literature (Suban et al., 2021). Another advantage of bibliometric reviews is the ability to evaluate a greater volume of publications in comparison to systematic literature reviews, while maintaining a stringent and reproducible methodology (Lwesya and Achanta, 2022). Therefore, the novelty of this study is to provide a comprehensive bibliometric summary regarding supply chain management studies. The objective of this study is to compile academic publications and conduct a thorough examination of their data with the aim of acquiring valuable knowledge regarding the advancement of a certain area of research, as well as the relevance and practicality of the written materials on both a local and worldwide level (Yagmur et al., 2019).

2. Literature review

2.1. Halal supply chain management literature so far

The term "halal" originates from the Quran and Arabic language, denoting a state of being legally permissible, acceptable, or lawful (Fuseini et al., 2020). Halal logistic necessitates a collaborative endeavor in operations and supply chain management sector to identify and enhance the primary foundations of Islam, namely the Sunnah and the Quran (Fathi et al., 2016). When the principles of halal are included into the logistics sector, it encompasses the entire process from the initial stage of production to the last stage of consumption using the halal principle (Pradana et al., 2023). The

aforementioned activities encompass sourcing, product handling, transportation, warehousing, inventory management, procurement, and order management, all of which are required to adhere to Shariah principles (Indarti et al., 2020).

Halal supply chain management, in comparison to traditional supply chain management, has a comparable description, however with the incorporation of Shariah law (Khan et al., 2021). This entails that Islamic law serves as the guiding principle for ensuring a proper halal method and procedure. In this particular case, it is imperative to adhere to the principles of Shariah law at each stage of the supply chain process. This involves not only managing the internal supply chain of the company but also overseeing the external logistic resources, which includes first-, second-, and in some instances, third-tier suppliers and customers (Yunani, 2017). The notion of the halal supply chain is interpreted differently by different industry actors. They believe that the halal supply chain will increase costs and might pose a risk to the business without understanding the fundamental causes. Therefore, it is necessary to educate and raise knowledge of the halal supply chain among consumers and industry participants. Animal feed that is halal is another problem associated with halal cuisine. It is possible for animals given non-halal food to also turn out to be non-halal. As a result, a number of policies have been implemented, including the Hazard Analysis Critical Control Point (HACCP) in Malaysia and the Good Manufacturing Practice (GMP) on farm animals for farmers, as well as the Good Animal Farm Husbandry Scheme (SALT) (Omar and Jaafar, 2011).

Nevertheless, as halal is excluded from the supply chain's operations and procedures, these measures are insufficient (Dewi et al., 2022). Additional concerns include the components in food, its hygiene, the storage and distribution of halal and non-halal food together, and the problem of slaughtering meat and fowl outside of Syariah guidelines. Customers thus perceive a risk regarding the food's quality as a result of this. Muslims are not allowed to regularly eat non-halal food in accordance with Islamic law. The idea of Halalan Toyyiban states that food must be both halal and suitable for consumption by Muslims (Omar and Jaafar, 2011).

Therefore, in order to guarantee that the animal has been killed in a way that is halal for the customer, a suitable slaughtering procedure in this research entails following Syariah Islamic standards, such as saying the Tasmiyyah and using a sharp knife (Yunani, 2017). Appropriate segregation constitutes the third component of a halal supply chain. The categories of handling, packing, transporting, and storage include proper segregation. To avoid product contamination, food handling, packing, transportation, and storage must be done separately for halal and non-halal items (Hidayat et al., 2021). To guarantee that Muslims may purchase halal items, all factors of quality, sanitation, and halal are now being attended to.

In addition, the halal food handling must be clean and safe to be consumed by the Muslims as well as by the non-Muslims. The handling material for example the forklift used to carry the halal products should not mix with other handling materials used to carry non-halal products to circumvent contamination (Handayani et al., 2021). Furthermore, halal food handling needs to be hygienic and secure so that both Muslims and non-Muslims may eat it. To prevent contamination, the handling materials—such as the forklift—used to transport halal goods shouldn't be combined with those used to transport non-halal goods. These discussions have been brought up in previous

literatures such as (Omar and Jaafar, 2011), Arifin et al. (2022), and Handayani et al. (2021). However, an existence of a meta-analysis articles summarizing the principles of halal supply chain management would be useful for researchers in this area to gather useful information regarding the topic.

2.2. Biblioshiny and VOSviewer as analytical tools

In the present study, VOSviewer was employed for network analysis. The VOSviewer program was employed to do a keyword co-occurrence analysis. VOSviewer is a software application that effectively generates and presents bibliometric networks for scientific entities, such as authors, keywords, and other pertinent factors (Rejeb et al., 2021). A bibliometric analysis was conducted using the R package (biblioshiny), focusing on various factors of publication, such as journal names, authorship, contributing authors, keywords, and the assessment of network collaboration levels among authors and nations (Gagliardi et al., 2023). The methodology developed by Haleem et al. (2020) can be applied to gain a thorough understanding of the subject matter, uncover gaps in knowledge, and guide future research endeavors. The software application Microsoft Excel was employed to generate figures and tables that could be modified, as well as to verify other tests such as citation analysis, assessment of journal productivity, and evaluation of collaboration. This analysis seeks to identify the journals that predominantly publish articles pertaining to halal supply chain, as well as the distribution of articles over the years. The comprehensive facts can be observed in **Table 1**.

Table 1. Data information.

Description	Results			
Main information about data				
Timespan	2007–2023			
Sources (Journals, Books, etc.)	124			
Documents	345			
Annual growth rate %	29.97			
Document average age	4.32			
Average citations per doc	16.37			
References	12,353			
Document contents				
Keywords plus (ID)	421			
Author's keywords (DE)	724			
Authors	731			
Authors of single-authored docs	25			
Authors collaboration				
Single-authored docs	30			
Co-authors per doc	3.52			
International co-authorships %	23.02			
Document types				
Article	290			

Table 1. (Continued).

Description	Results
Book chapter	30
Review	25

3. Result and discussion

3.1. Bibliometric review

The literature review of this work used the R package bibliometric analytic approach to systematically and objectively locate, assess, map, and analysis the existing scientific literature on suppliers within the context of the halal supply chain. The study's methodology exhibits a heightened degree of comprehensiveness and rigor, specifically in relation to the analytical approaches employed and the search strategy executed (Gagliardi et al., 2023). Bibliometric analysis is a commonly utilized approach for analyzing and appraising the performance of the scientific community within a specific domain of halal supply chain (Suban et al., 2021). Bibliometric analysis employs statistical techniques to efficiently manage and examine large datasets, encompassing several aspects such as the intellectual framework, influential entities, contributors, authors, countries, sources, and references (Haleem et al., 2020; Putera and Rakhel, 2023). **Figure 1** shows the chart of the bibliometric processes.



Figure 1. Five stages of bibliometric literature study method.

3.2. Data collection

The initial phase of this study is the establishment of precise definitions for the phrases or keywords utilized in the process of gathering data pertaining to the halal supply chain. The selection of keywords should prioritize informativeness and consider word derivatives and word equations. Data is obtained from the Scopus database, which is recognized as one of the most prominent indexers of journal articles (Handayani et al., 2021). Scopus demonstrates a greater degree of individuality, particularly in its ability to incorporate a larger volume of unique documents (Montoya et al., 2018). The aforementioned attribute is of special significance when contemplating the procedure of identifying suitable sources of information for subsequent scholarly inquiries (Martínez-López et al., 2018). The analysis focused exclusively on articles, book chapters, and reviews, with a restriction to English language publications. Prior to conducting a search in the Scopus database, it is necessary to establish and document a word database in order to verify the integrity of its files. The study used a mix of specific terms, namely "halal" AND "supply chain" OR "logistic". Afterwards, we limited the discussion to 'business and management' topic and eliminated unnecessary documents, such as retraction notes, data repository, and notes. We kept the documents which were journal articles and book chapters. The

data collection was conducted in January 2024 with the limitation until December 2023.

3.3. General performance analysis

In the subsequent part, we shall show and analyse the principal outcomes of the bibliometric analysis. The data processing was performed via the data analysis applications R Packed and VOSviewer. The selection of R Packed was based on its notable versatility, whereas VOSviewer was chosen as a visualisation tool due to its user-friendly interface. In this work, the bibliometric analysis was conducted using R Packed and VOSviewer. Bibliometric reviews are employed due to their scientific capacity to visually represent networks connecting sources, authors, and keywords (Haleem et al., 2020). According to Indarti et al. (2020), the utilisation of bibliometrics can enhance the dissemination of keyword findings, facilitating the investigation of data and enabling the provision of comprehensive information to readers. In addition, one of the benefits of bibliometrics is its capacity to not only visualise data, but also to monitor the state of knowledge within the existing literature. It is important to consider the quality of the data, as it might have an impact on the outcomes of the study (Yagmur et al., 2019). The comprehensive data information is available for reference in **Table 1**.

In **Figure 2**, the number of selected articles pertaining to the halal supply chain spans from 2007 to 2022, totaling 278. The results of the keyword mapping study provide the basis for establishing correlations between significant or unique terms found in these papers (Suban et al., 2021). The process of mapping is a cognitive mechanism that aids in the recognition and understanding of different elements of knowledge, encompassing their organisation, dynamics, interrelationships, and mutual influences (Ellegaard and Wallin, 2015).

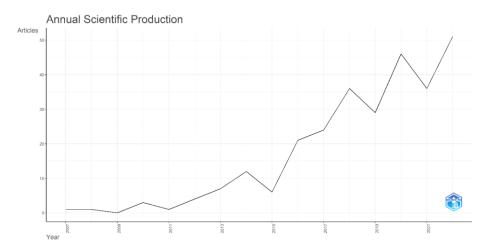


Figure 2. Annual scientific production.

According to the statistics presented in **Figure 2**, there has been a significant increase in the number of published articles related to the Halal value chain within the subject of supply chain research from 2021 to 2022. This indicates a growing interest among scholars and researchers in this particular area. There is an expectation that this tendency will persist in the future.

Furthermore, scholarly inquiries are undertaken through the examination of the mean citation count inside academic articles relevant to the subject matter of the halal supply chain. This analysis takes into account both the average number of citations received per year and per publication. Significant findings have been made through the analysis of the citations obtained from the 345 documents (see **Figure 3**). Empirical evidence suggests the presence of a noticeable and continuous rising trend in the frequency of citations.

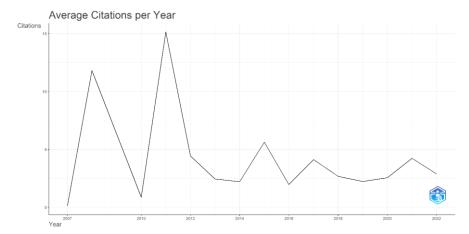


Figure 3. Average citations per year.

The tripartite analysis is classified into three discrete domains: the central field, the left field, and the right field. The keywords are located on the right-field side, the state is situated in the middle field, and the author is listed in the left field. The three pieces demonstrate interconnectedness through a nuanced narrative that develops a cohesive relationship among them. The proportions of the rectangle provide a visual depiction of the vast number of publications associated with each of these entities.

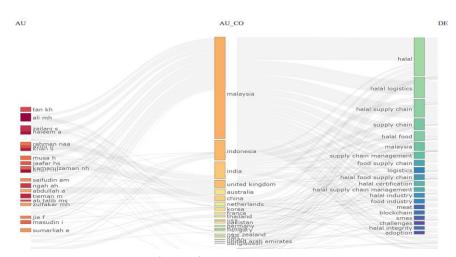


Figure 4. Three fields plot

Based on the data presented in **Figure 4**, it can be noticed that the primary concentration of halal suppliers within the supply chain is evident in Malaysia, Indonesia, India, the United Kingdom, and Australia. The topic currently under examination has witnessed a significant increase in its level of interest, despite its origins in a nation where Muslims do not comprise the majority demographic. The

statement is substantiated by the statistics depicted in **Figure 3**, which illustrates a notable level of interest in halal practises across countries with non-Muslim majority. This research investigates the integration of halal practises into the supply chain.

3.4. Author analysis

The analysis of the data reported in **Table 2** reveals that articles pertaining to the halal supply chain area have the highest citation counts. The aforementioned paper has received the largest number of citations, amounting to a total of 197.

Table 2. Top 10 most global cited documents.

Citation	Author	Title	Year	Journal
197	Tieman M.	The application of Halal in supply chain management: In-depth interviews	2011	Journal of Islamic Marketing
189	Bonne K.	Religious values informing halal meat production and the control and delivery of halal credence quality	2008	Agriculture and Human Values
159	Tieman M.	Principles in halal supply chain management	2012	Journal of Islamic Marketing
106	Ab Talib M. S.	Halal supply chain critical success factors: A literature review	2015	Journal of Islamic Marketing
100	Soon J. M.	Halal integrity in the food supply chain	2017	British Food Journal
84	Ali M. H.	A sustainable Blockchain framework for the halal food supply chain: Lessons from Malaysia	2021	Technological Forecasting and Social Change
80	Rejeb A.	Blockchain Technology in the Food Industry: A Review of Potentials, Challenges and Future Research Directions	2020	Logistics
80	Khan S.	Implementing traceability systems in specific supply chain management (SCM) through critical success factors (CSFs)	2018	Sustainability (Switzerland)
78	Ali M. H.	A supply chain integrity framework for halal food	2017	British Food Journal
77	Zailani S.	Halal logistics opportunities and challenges	2017	Journal of Islamic Marketing

According to Tieman (2011), this study seeks to elucidate the fundamental prerequisites of Halal food supply chains, with the objective of safeguarding the authenticity of Halal food at the juncture of consumption, a religious duty for adherents of Islam. The findings of the Tieman (2011) research indicate that halal supply chain management avoids Haram, reduces contamination, and meets Muslim customer expectations. Halal supply chains must consider product and market factors. Muslim consumer perspective needs empirical investigation. Understanding the Halal supply chain guidelines for Muslim and non-Muslim markets is also needed. Halal supply networks need a model to describe and optimize them. Additionally, the second position encompasses research carried out by Bonne and Verbeke (2008). This study examines the socio-technical aspects involved in the creation, maintenance, and coordination of the credence quality attribute known as "halal" within the halal meat supply chain. The research findings indicate that Muslim migrants' eating habits are

shaped by religion. The meat chain must be changed to Islamic circumstances for halal meat manufacturing and retailing to transform the intended process characteristic into a set of rules, norms, and specifications.

Ali (2021) published the most recent articles with most citations. Since it was published less than five years before this article was being written, we can conclude that it is the most recent credible source in the topic of halal supply chain management. With the title "A sustainable Blockchain framework for the halal food supply chain: Lessons from Malaysia", the article incorporated a recent technology, which is blockchain technology, for managing the flow of halal groceries, meat, and food supplies. The other findings of our study indicate the existence of geographical collaboration among the authors of the examined works, as illustrated in **Figure 5** and **Table 3**.

Country Collaboration Map

Figure 5. Collaboration world map.

Table 3. Top 10 most important collaborations among international.

From	To	Frequency
Malaysia	United Kingdom	10
Malaysia	Indonesia	9
Malaysia	Australia	6
Hungary	Tunisia	4
Malaysia	Netherlands	4
Indonesia	Australia	3
Malaysia	Hungary	3
Malaysia	Oman	3
Malaysia	Tunisia	3
Malaysia	USA	3

Author collaboration between Malaysia and the United Kingdom is a notable occurrence. The level of collaboration between Malaysia and Indonesia is listed as the second highest. The third place is marked by collaborative efforts between Malaysia and Australia, ultimately leading to collaborations between Malaysia and Indonesia.

Figure 6 presents a visual depiction of the quantified representation of research articles related to the theme of the halal supply chain for each individual author. The

dataset provides a comprehensive collection of the names of writers who have produced a significant number of articles, which is shown visually using a bar chart. The degree of colour is directly proportional to the magnitude and significance of the study issue, whereas the spectrum of published documents across all academic publications ranges from 0 to 13.0 documents.

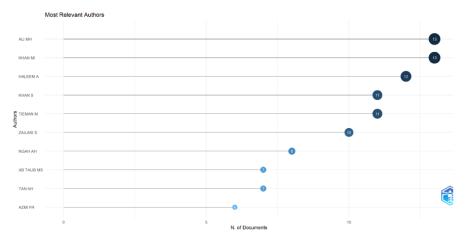


Figure 6. Most relevant authors.

The author Ali MH holds a prominent position in terms of publication output as evidenced by the presence of 13 published documents represented by a dark bar in the graph. The bar representing this particular journal demonstrates a notable distinction when compared to the bars representing other journals, so signifying the author's work as being highly pertinent to the issue under discussion.

3.5. Source analysis

Figure 7 depicts the number of research articles that have been published by different journals, classified based on their level of relevance to the halal supply chain theme. The dataset provides a comprehensive collection of titles from renowned scientific publications, accompanied by a visual representation in the form of a bar chart, indicating the range of articles published. The chromatic intensity is directly linked to the scale and importance of the study topic, as well as the quantity of articles published in the corresponding academic publications. The Journal of Islamic Marketing is widely recognised as a prestigious scholarly publication, known for its substantial impact on the discipline. The entity in question has attained a notable standing within the academic sphere, as indicated by the production of a significant quantity of 42 scholarly articles. The rationale for choosing this particular publication is based on its pertinence to the subject matter being examined.

The determination of calculations in academic journals is not exclusively based on the volume of content generated or its perceived significance (Handayani et al., 2021). This study additionally investigates the influence of a scholarly journal that disseminates a research paper pertaining to the halal value chain theme, by evaluating its magazine's h-index, which is graphically depicted in the form of a bar chart. The figure not only gives the attained h-index value but also visually represents the influence made by the journal using various colours. The amount of relevance assigned to the influence of the journal increases proportionally with the intensity of the colour

represented in the chart. The study reported a range of h-index values that varied from 0.0 to 22.0.

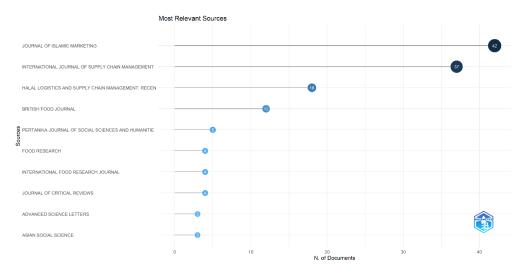


Figure 7. Top 10 most relevant sources.

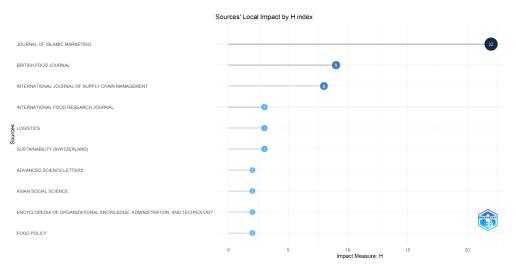


Figure 8. Source impact.

Based on the data shown in **Figure 8**, it can be observed that the Journal of Islamic Marketing occupies the topmost place in terms of ranking, as evidenced by its h-index value of 22.0. This distinction is graphically depicted by a darker colour assigned to the journal in the figure. Furthermore, it is apparent that the British Food Journal occupies a collective position in the second rank, as evidenced by its h-index of 9.0. In relation to journals possessing an h-index of 2.0, it is noteworthy to observe that four journals have been assigned a distinct hue on the figure. The lighter colouring is indicative of a relatively diminished influence of these journals.

This study also investigates the creation of academic publications that function as archives of research focused on the halal supply chain subject. The graph presented in **Figure 9** portrays the temporal evolution of annual frequencies for each journal between the years 2007 and 2022. This research enables us to determine whether there has been an increase or decrease in the frequency of publications related to halal supply chains over the study period. The visual depiction illustrates that academic inquiries

on the halal supply chain field display diverse trends in the growth of their published literature.

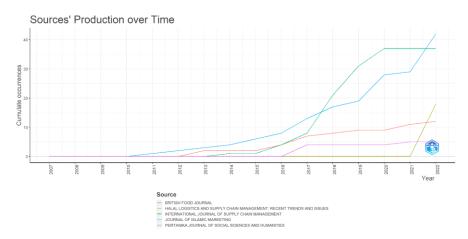


Figure 9. Source growth dynamics.

The graph depicts the present peak of publishing activity for both journals. The establishment of the Journal of Islamic Marketing took place in 2011, and it saw notable swings in growth prior to achieving the highest position in terms of publishing by 2022. The International Journal of Supply Chain Management was first published in 2014 and is expected to have substantial expansion and variability until 2022.

3.6. Thematic analysis

Based on the data depicted in **Figure 10**, the analysis of keywords in research related to the halal supply chain demonstrates the recurrent presence of particular terms. The words are graphically shown as a developmental curve, illustrating their yearly frequency values. The results reported in this study demonstrate the average frequency of the specified keywords in the dataset analyzed in the research related to the domain of the halal supply chain, for each year.

Based on the data presented in **Figure 10**, it can be observed that there is empirical support for the formation and subsequent proliferation of the most often heard words, commencing in 2010 and persisting with a steady upward trajectory until 2022. The data suggest that there has been a significant increase in the frequency of research related to keywords such as "human" and "article" indicating promising opportunities for future growth.

The examination of the thematic map depicted in **Figure 10** demonstrates the existence of four clearly defined quadrants. These quadrants have been identified by taking into account factors such as density and centrality. The aforementioned result is obtained by a semi-automated approach that entails examining the titles of all references related to the research topic (Zupic and Čater, 2015). The quadrant located in the upper left region of the diagram signifies a theme that exhibits a significant level of development while also being characterized by a sense of isolation. The analysis of quadrants, which display unique thematic attributes, is a very uncommon field of research. Nevertheless, it is evident that these quadrants exhibit substantial progress and development, as indicated by their notable density and minimal centrality. The themes examined under this quadrant encompass comparative study, market, and meat

study. The quadrant positioned in the lower left section of the diagram depicts topics that are now in a state of either emerging or declining. On the other hand, the quadrant being examined illustrates motifs that have been utilized for a considerable duration but demonstrate a discernible pattern of either rising or declining usage. The subjects examined under this quadrant involve several aspects such as logistics, outsourcing, halal logistics, the food market, halal fashion, hijab, and innovation.

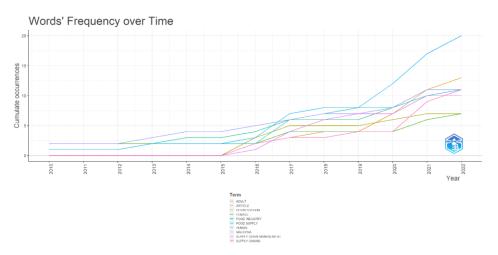


Figure 10. Word dynamic.

The motor motif is prominently observed in the upper right quadrant, characterized by its notable density and prominence. Nevertheless, it is crucial to augment its growth as it bears considerable significance for future study endeavors. The issues examined within this quadrant span a diverse range of subjects, including human, article, human experiment, meat, Islam, animals, study, supply chains, food supply, and supply chain management. The bottom right quadrant is characterized by a prominent and intersecting motif, demonstrating a significant level of centrality but a comparatively lesser level of density. The incorporation of these themes in the research is essential given their extensive use as overarching subjects. The themes examined in this quadrant pertain to the food industry, Malaysia, and certification.

The network or mapping analysis was performed utilizing VOSviewer, a software application that constructs the network by taking into account the centrality, weight, and strength of the different nodes (López-Rubio et al., 2020). Keywords are frequently applied as tools for identifying the study material, main subjects, and methodologies/technologies employed within a certain discipline (Haleem et al., 2020). A network map is utilized in a keyword co-occurrence network to depict the interconnections among terms (Putera and Rakhel, 2023). The examination of the co-occurrence network unveils significant keyword such as halal, halal logistics, halal supply chain, supply chain management, supply chain, Malaysia, human, and food industry (**Figure 11**).

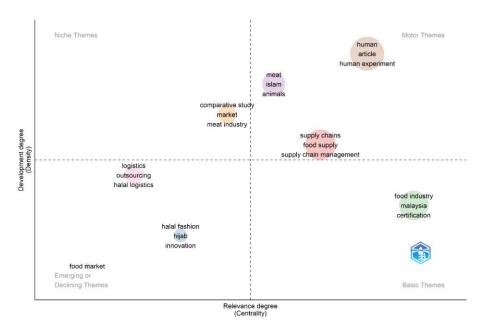


Figure 11. Thematic map.

Significantly, the concept of halal holds a prominent position inside the network, as evidenced by its comparatively greater vertex size. In the network, each vertices represents an entity or a term, and the magnitude of the vertex is indicative of the frequency of occurrence of the entity or term. The magnitude of the edge size serves as an indicator of the degree of correlation between the keywords. The distance between two keywords in terms of line width signifies the citation link existing between them.

According to Rejeb et al. (2021), the utilization of overlay visualization in examining the co-occurrence of keywords yielded significant findings regarding the emergence of topical trends. The keyword maps depicted in **Figures 12** and **13** are designed to improve understanding by incorporating the temporal aspect connected with each topic. A node that exhibits a darker shade denotes a topic that has been previously deliberated, whereas a node displaying a lighter shade represents a more recent contribution. By taking into account parameters like as node size and link strengths, this approach facilitates the discovery of trends in topics.

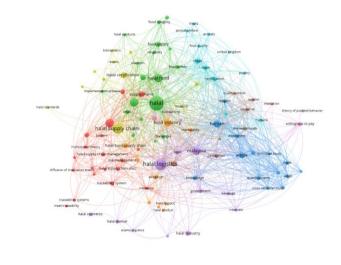


Figure 12. Network visualization.

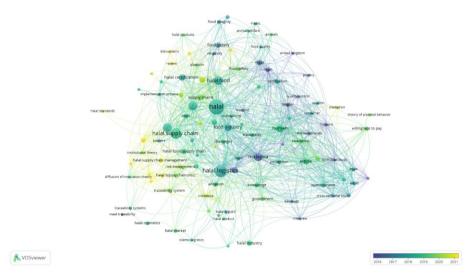


Figure 13. Overlay visualization.

The keywords "Islam", "meat", "halal supply chain management", and "Malaysia" are indicated in a dark blue color, signifying the time period preceding 2016. In contrast, the terms "halal market", "halal cosmetics", "halal supply chain (HSC)", and "halal logistics" are highlighted in green, denoting the timeframe following the year 2020. Within the domain of the halal supply chain, scholarly attention has increasingly gravitated towards unexplored territories, notably those denoted as yellow areas. These regions of interest are characterized by a concentrated investigation of key concepts such as "halal standards", "innovation", and "halal supply chain management". Since the year 2021, these subjects have garnered considerable scholarly interest.

Our results show that this topic has been a main focus in Malaysia and United Kingdom. This result is a bit different from previous literatures, such as Rusydiana et al. (2023), who also admitted Malaysia as the most producers of halal supply chain publications. However, the next productive domains are India and Belgium. In our result, Malaysia and United Kingdom often collaborate in conducting studies in this topic.

4. Conclusion

This article presents a comprehensive review of the progress in research pertaining to halal providers in the food supply chain, utilizing bibliometric methods. The bibliometric assessment indicates that there has been a significant increase in research interest in the Halal supply chain, suggesting a quick growth in this area. The application of bibliometric analysis shows potential in offering valuable insights for the development of collections, clarifying the areas of institutional scholarship that demonstrate excellence, identifying patterns of citation, and uncovering prominent networks of co-citation associated with various schools of thought. The objective of this study is to examine the patterns of research, the development of themes, and the impact of prominent research in the domain of halal supply chain from 2007 to 2022. The Scopus database, widely recognized as the greatest repository of biographical information, was employed by the researchers to collect and analysis data. The present study has presented a comprehensive examination of the research trajectory and theme

emphasis within the domain of halal supply chain over different temporal intervals. This study offers a comprehensive examination of the progression of knowledge management and highlights prospective avenues for further scholarly investigation. Academic scholars possess the capacity to conduct an extensive inquiry inside the domain of halal supply chain. This project has the potential to generate significant insights that would be of great use to policymakers and practitioners. The current study has provided a significant addition to the understanding of research progress, developing domains, and prospective research avenues in the realm of halal supply chain.

The limitation of this study relates to the bibliometric analysis, which exclusively concentrated on empirical studies and did not consider other sources such as conference proceedings. It is recommended that future inquiries should use supplementary academic materials, including scholarly literature and renowned conference proceedings. In the realm of these specific topics, there exist emergent patterns and concepts that warrant further investigation and intellectual discourse among researchers. The aforementioned themes are to the domain of the food industry, specifically focusing on halal certification and halal standards.

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