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TRENDS AND PATTERNS IN HALAL RESEARCH: A 21-YEAR SCOPUS-BASED BIBLIOMETRIC ANALYSIS (2004–2025)

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Abstract:

A rapid increase in research interest in the halal area has occurred over the past 20 years; therefore, there is now a rapidly evolving yet disintegrated body of knowledge. As a result of this fragmentation, a controlled synthesis of the scattered findings will help to integrate the dispersed research into one central location and give context to how the halal research field has developed from an intellectual perspective. With this purpose in mind, this article provides a 21-year bibliometric analysis of halal research to develop a complete map of the halal research scientific landscape, identify prominent thematic clusters and outline future research directions. Seventy (n=70) journal articles found in the Scopus database between 2004-2025 were analyzed using VOSViewer, which includes performance analysis, co-authorship mapping and co-occurrence visualization of keywords. Using the co-occurrence analysis, five major themes have emerged from halal research: (1) halal awareness, religion and Muslim consumer orientation, (2) halal logistics and sustainable supply chain, (3) shariah compliance, certification and upcoming digital technologies (4) halal industry development and links to Islamic finance. Performance analysis results reveal that Yudi Fernando is the most influential contributor, and the Journal of Islamic Marketing is the most frequently published source of halal research. This systematic review creates an

integrated intellectual roadmap for scholars to identify conceptual relations, research gaps and emerging frontier concepts for halal. Future research areas are particularly the development of halal governance models through the application of digital technologies (e.g., blockchain, AI) and cross-national borders.

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Bibliometric Analysis; Halal Research; Scopus; Thematic Clusters; VOSViewer



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Introduction

The way the halal industry has expanded is quite remarkable; it's no longer just a niche market but a global force spanning multiple sectors. This rapid commercial growth has naturally acted as a catalyst for academic curiosity, sparking intense research in areas as diverse as supply chain management, governance, food integrity, and consumer behaviour. This rising volume of halal-related research clearly mirrors a global demand for better integrity and efficiency, particularly within the food, logistics, and service industries. As highlighted by (Khan et al., 2021), the focus has shifted significantly toward supply chain transparency and governance-based assurance mechanisms, which are now seen as vital tools in safeguarding halal integrity and maintaining stakeholder trust.

Over the last two decades, academic interest in halal research has seen an unprecedented surge, both in volume and scope. Initially, empirical studies were somewhat limited, focusing primarily on halal awareness and certification as the main drivers of consumer decision-making (Aziz & Chok, 2013). However, as the field matured, the focus began to shift—moving beyond the consumer's perspective toward more operational dimensions, such as governance and supply chain management. Despite this progress, the halal literature remains largely fragmented, likely due to its multidisciplinary nature and a lack of a unified knowledge structure. Most existing works are narrative-based and confined to specific domains, with only a small fraction employing systematic approaches or bibliometric tools to map the intellectual development of the halal field (Kumar et al., 2021).

As noted by (Haleem et al., 2020), much of the existing halal literature remains largely narrative in nature and focused on specific domains. There is still a clear lack of studies that adopt systematic or bibliometric methods to trace how the field has developed over time. To date, no bibliometric study has examined halal research across a long-term period of more than two

decades. Instead, most review articles tend to focus on isolated sub-fields, such as halal logistics, tourism, or certification, without situating these areas within a broader and more integrated research landscape. For example, (Battour & Ismail, 2016) offered a focused review of halal tourism and its unique challenges but provided limited connection to wider concerns related to governance or industry-level logistics. As a result, this fragmented approach makes it difficult to form a comprehensive understanding of the intellectual structure and long-term thematic development of halal research.

This fragmentation underscores a critical need for a structured bibliometric review that can consolidate these scattered findings and clarify the field's intellectual structure. Bibliometric techniques—particularly performance analysis and science mapping—allow for a systematic inspection of publication trends, influential contributors, collaboration networks, and thematic clusters (Donthu et al., 2021; Kumar et al., 2021). By applying these methods, scholars can move beyond simple narrative synthesis to develop a more integrated and data-driven understanding of how research patterns evolve. Consequently, this study intends to systematically analyze halal trends and patterns by mapping the intellectual landscape and identifying core thematic clusters. Our aim is to propose a future research agenda based on the following research questions: identifying publication trends from 2004 to 2025 (RQ1); determining the thematic clusters that define the field (RQ2); identifying the most influential authors, journals, and countries (RQ3); and finally, outlining future research directions derived from these current patterns (RQ4).

This study contributes a unified intellectual roadmap that helps bridge the existing gaps within the fragmented halal literature. By doing so, it enables scholars to identify key conceptual relationships and pinpoint overlooked research gaps that persist today. Beyond its academic value, our findings offer practical implications for policymakers and industry leaders—particularly in the context of the digital revolution, where blockchain-based traceability and halal supply chain assurance are becoming increasingly vital. Ultimately, this research provides a structured foundation and a comprehensive database to support future halal studies, whether they be empirical, conceptual, or policy oriented. It is also worth noting that while our study period began in 2004, publications meeting our criteria only started to emerge in 2009. This highlights the relatively nascent stage of halal research during that early period and its subsequent evolution into a more established field.

Literature Review

It is evident that halal research has experienced a rapid surge over the last two decades, fuelled by heightened global awareness and an industry growth trajectory that shows no signs of slowing down. This shift is increasingly driven by a collective demand for Shariah-compliant assurance across a wide array of sectors. Contemporary literature, such as the works of (Abdul Halim et al., 2024; Safian et al., 2020) underscores that halal assurance is no longer confined to mere product certification. Instead, it has evolved to encompass broader dimensions, including food integrity, standardization, and robust governance mechanisms that ensure systematic compliance throughout the entire value chain. Consequently, the halal research landscape has transformed into a truly multidisciplinary field, weaving together complex threads of supply chain management, governance structures, and the nuances of consumer behaviour.

The steady rise in halal-related publications since 2004 does more than just mirror the growing economic importance of the global halal industry; it reflects an intensifying demand for transparency, assurance, and standardization across diverse markets. Previous research emphasizes that solid governance structures and effective assurance mechanisms are vital for preserving halal integrity, particularly within today's increasingly complex and globalized supply chains (Abdul Halim et al., 2024). This emphasis on standardization has pushed halal research to expand into both operational and strategic dimensions. While the mainstream halal ecosystem is rooted in religious principles, certification, and consumer acceptance, the research stream has gradually evolved to integrate wider perspectives on belief systems, institutional credibility, and assurance. As noted by (Haleem et al., 2020), these themes have shaped the conceptual core of halal research since its early stages. Furthermore, recent bibliometric evidence confirms that certification credibility, religiosity, and consumer attitude remain the dominant factors driving halal purchasing decisions across various market contexts (Khader Aneesh & Siddiq, 2024; Zafar & Abu-Hussin, 2025).

Another major body of literature centres on halal logistics and supply chain management. Studies in this domain rigorously examine risk management, operational coordination, and performance measurement throughout the halal supply chain. Reviews focusing on these areas emphasize the critical nature of integrity assurance during the production, handling, and distribution processes (Hidayat & Musari, 2022). This operational focus aligns with the emerging 'halal logistics and supply chain' cluster identified in our bibliometric mapping, reflecting an increased integration of efficiency and sustainability within halal operations. Parallel to this, a significant research stream has grown around halal governance, Shariah compliance, and institutional assurance mechanisms. This literature highlights the role of organizational structures, accountability systems, and regulatory oversight in ensuring continuous Shariah compliance. As noted by (Abdul Rahim et al., 2023; Safian et al., 2020), governance-oriented studies demonstrate how formalized internal controls and assurance frameworks extend halal compliance beyond simple certification, ultimately safeguarding long-term integrity across both the organization and the wider supply chain. These insights provide the conceptual backbone for the governance and compliance themes identified in our bibliometric clusters.

At the industry level, halal research is increasingly intertwined with broader economic development perspectives. This research stream views the halal industry as a strategic sector that significantly contributes to national competitiveness, industrial growth, and regulatory maturity. Although studies in this specific area remain relatively limited, those adopting this perspective highlight the industry's pivotal role in fostering structured market development and long-term sustainability. Consequently, these contributions form the foundation of industry-oriented themes within the halal research landscape, as previously noted by (Haleem et al., 2020).

Nevertheless, behind the rapid growth of halal entrepreneurship, several critical gaps persist within the available literature. Primarily, the field remains deeply fragmented due to its multidisciplinary nature, which has inevitably hindered the development of a truly integrated synthesis. This issue is compounded by a noticeable absence of systematic reviews or long-term bibliometric studies capable of holistically mapping the conceptual evolution of halal research over the past two decades. Furthermore, most existing reviews rely on a single analytical approach, failing to incorporate advanced bibliometric techniques—such as keyword co-occurrence, co-authorship networks, and performance analysis—to expose the underlying

intellectual structures and collaboration patterns. Ultimately, there is a lack of a structured intellectual roadmap that can effectively identify dominant thematic clusters, key conceptual relationships, and future developmental trends within the halal entrepreneurship domain.

These limitations underscore the urgent need for a comprehensive bibliometric study one that can systematically consolidate fragmented findings while mapping the broader trends and patterns within halal research. By integrating both performance analysis and science mapping techniques, such a study provides a holistic understanding of the field's intellectual structure. Furthermore, it allows for a clearer identification of dominant themes and the evolving research boundaries that currently define the halal landscape.

Methodology

This study employs a bibliometric approach to systematically examine the evolution, intellectual framework, and thematic trends of halal research. By integrating performance-based indicators with science mapping procedures, the analysis provides a nuanced visualization of publication trajectories, collaborative networks, and the shifting focus of research themes over time. The adoption of these techniques is consistent with established bibliometric protocols used to reveal the intellectual structures within emerging academic fields (van Eck & Waltman, 2014; Waltman et al., 2010; Župič & Čater, 2015).

Data Acquisition and Search Strategy

The Scopus database was selected as the primary data source due to its expansive coverage of multidisciplinary journals and proven reliability for bibliometric investigations. Its structured metadata—covering authors, institutional affiliations, keywords, and citation metrics—ensures consistency and reliability for network mapping. Scopus also integrates effectively with bibliometric software such as VOSviewer, Bibliometrix, and CiteSpace, thereby reducing preprocessing complexity and minimizing duplication or formatting inconsistencies (Aria & Cuccurullo, 2017; Donthu et al., 2021; Kumar et al., 2021).

To capture the relevant literature, the following search string was applied to article titles, abstracts, and keywords:

TITLE-ABS-KEY (“halal disclosure” OR “halal certification” OR “halal governance” OR “halal compliance” OR “halal reporting” OR “shariah governance”) AND PUBYEAR ≥ 2004 AND PUBYEAR ≤ 2025.

The search yielded 70 documents that met the inclusion criteria of English-language, peer-reviewed journal articles. While the parameters were anchored in governance-related keywords, the dataset also captured broader thematic areas such as halal logistics, consumer behaviour, and industry development.

Data Refinement and Systematic Cleaning

To ensure the integrity of the analysis, the dataset underwent a systematic cleaning process. Duplicate records and incomplete entries were removed, while author names were standardised to address variations in spelling and formatting. For example, the highly cited halal logistics scholar Yudi Fernando appeared under multiple variants (“Fernando, Y.”, “Y. Fernando”,

“Fernando, Yudi A.”), which were consolidated into a single entry to avoid fragmentation in co-authorship networks. Similar procedures were applied to institutional affiliations and keywords. Terms such as “halal food”, “halal-food”, and “halal foods” were merged into a single standardised keyword, while generic or non-informative terms (e.g., “article”, “study”, “review”) were excluded to enhance thematic clarity.

The final cleaned dataset, comprising peer-reviewed English-language journal articles published between 2004 and 2025, was imported into VOSviewer (version 1.6.19) for keyword co-occurrence mapping, co-authorship networks, and thematic cluster analysis. Microsoft Excel was also used to organise performance analysis outputs, including publication trends, leading journals, the most productive authors, and top contributing countries.

Analytical Approach

A two-stage bibliometric approach was adopted. First, performance analysis was conducted to examine publication trends and identify influential authors, journals, and contributing countries. Second, science mapping techniques were applied to visualise the intellectual structure of halal research through keyword co-occurrence analysis, co-authorship networks, cluster identification, and citation network analysis. Together, these approaches enabled a systematic examination of both the thematic composition and collaborative structure of halal research.

Results and Findings

This section presents the findings of the bibliometric analysis, comprising two main components: performance analysis and science mapping. Performance analysis examines publication trends, leading journals, productive authors, and contributing countries, while science mapping highlights dominant research themes based on keyword co-occurrence analysis.

Publication Trends

Figure 1 illustrates the publication trend of halal research from 2009 to 2025 based on 70 Scopus-indexed articles. Overall, the number of publications shows a clear upward trend. The earliest eligible publication appeared in 2009, followed by a period of low and irregular output between 2010 and 2015, during which only one to two articles were published annually. This pattern suggests that halal research was still at an early developmental stage and lacked a well-defined research structure during its initial phase. From 2016 onwards, halal research entered a more stable growth phase, with publications ranging between two and seven articles. This increase reflects growing scholarly interest in halal certification, governance mechanisms, logistics, and consumer behaviour. Although a slight decline in publication volume was observed during 2020-2021, citation indicators indicate that several influential studies continued to shape the field during this period.

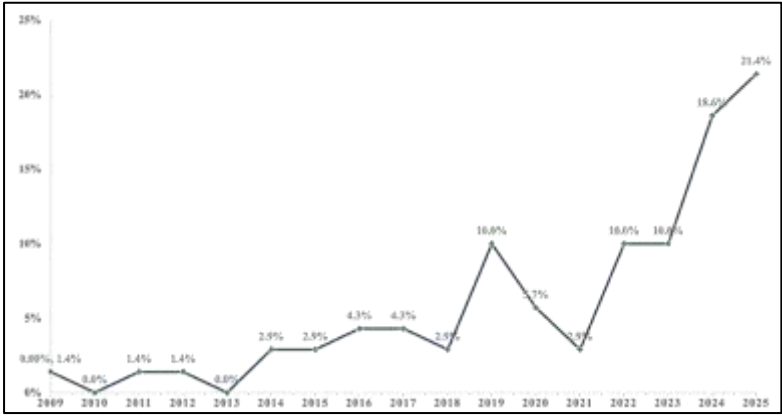


Figure 1: Publication Trend in Halal Research (2009–2025)

Source: Scopus Database

A substantial surge in publications occurred after 2022. The years 2024 and 2025 accounted for 18.6% and 21.4% of total publications, respectively, contributing nearly 40% of the overall dataset. This sharp increase signals a transition into a mature expansion phase, driven by intensified research interest in halal digitalisation, blockchain-based traceability, governance reforms, and global halal supply chain assurance. Overall, despite fluctuations in earlier years, the long-term trend reflects accelerating growth in halal research towards 2025.

Year of Publication and Citation Indicators

The following discussions in Table 1 highlight the distribution of publications by year together with key citation indicators, including total citations (TCP), citations per publication (C/P), and citations per cited publication (C/CP). The results show that while early publication volumes were limited, several years recorded high citation impact, particularly 2012 and 2016, indicating the presence of highly influential foundational studies. In later years, although citation averages declined slightly due to the recency of publications, the increasing volume of research reflects a rapidly expanding and evolving field.

Table 1: Year of Publication and Citation Indicators

Year	Publications (P)	Percentage (%)	NCP	TCP	C/P	C/CP
2009	1	1.4%	1	14	14.00	14.00
2010	0	0%	0	0	0	0
2011	1	1.4%	1	4	4.00	4.00
2012	1	1.4%	1	34	34.00	34.00
2013	0	0%	0	0	0	0
2014	2	2.9%	2	18	9.00	9.00
2015	2	2.9%	1	3	1.50	3.00
2016	3	4.3%	3	272	90.67	90.67
2017	3	4.3%	2	16	5.33	8.00
2018	2	2.9%	2	48	24.00	24.00
2019	7	10.0%	7	61	8.71	8.71
2020	4	5.7%	4	32	8.00	8.00
2021	2	2.9%	1	3	1.50	3.00
2022	7	10.0%	4	28	4.00	7.00
2023	7	10.0%	3	13	1.86	4.33
2024	13	18.6%	8	53	4.08	6.62
2025	15	21.4%	5	14	0.93	2.80

Source: Scopus Database

The Productive Journals in Halal Research

Table 2 summarises the top ten most productive journals publishing halal-related research. The *Journal of Islamic Marketing* emerges as the most dominant outlet, accounting for 16 publications (22.9%), establishing it as the core journal within the halal research landscape. This journal primarily publishes studies related to Islamic marketing, Muslim consumer behaviour, halal branding, and market dynamics. The *International Journal of Supply Chain Management* ranks second with seven publications, reflecting increasing research attention on halal logistics, supply chain efficiency, and traceability. The *Indonesian Journal of Halal Research* follows with six publications, highlighting the strong contribution of Indonesian scholars, particularly in science-based and policy-oriented halal research.

Other journals, including the *Journal of Halal Service Research*, *British Food Journal*, *Food Control*, and *Sustainability*, contribute smaller but significant numbers of publications, addressing themes such as food quality, safety assurance, sustainability, and consumer markets. Together, these journals illustrate the multidisciplinary nature of halal research across marketing, supply chain management, food science, and sustainability domains.

Table 2: Top 10 Productive Journals in Halal Research

Rank	Journal	Publications	Percentage (%)
1	Journal of Islamic Marketing	16	22.9%
2	International Journal of Supply Chain Management	7	10.0%
3	Indonesian Journal of Halal Research	6	8.6%
4	Journal of Halal Service Research	4	5.7%
5	British Food Journal	3	4.3%

Rank	Journal	Publications	Percentage (%)
6	International Journal of Academic Research in Business and Social Sciences	3	4.3%
7	Sustainability	2	2.9%
8	Food Control	2	2.9%
9	Journal of Food Products Marketing	2	2.9%
10	Journal of Cleaner Production	1	1.4%

Source: Scopus Database

Most Productive Authors

Table 3 presents the top ten most productive authors in halal research. Yudi Fernando ranks as the most influential author with seven publications, reflecting his strong research focus on halal logistics and supply chain management. *Rahamaddulla* Syed Radzi and Abdul Aziz Khairunnisa follow closely with five publications each, indicating the significant contribution of Malaysian scholars to the halal research field. Overall, the authorship pattern suggests that halal research is largely dominated by scholars from the ASEAN region, particularly Malaysia and Indonesia, reinforcing the regional concentration observed in earlier analyses.

Table 3: Top 10 Most Productive Authors

Rank	Author	Publications	Percentage (%)
1	Fernando, Yudi	7	10.0%
2	<i>Rahamaddulla</i> , Syed Radzi	5	7.1%
3	Abdul Aziz, Khairunnisa	5	7.1%
4	Zailani, Suhaiza	4	5.7%
5	Ab Talib, M.S.	3	4.3%
6	Tieman, M.	3	4.3%
7	Said, M.R.M.	3	4.3%
8	Mohd Yusoff, M.	2	2.9%
9	Shah Alam, S.S.	2	2.9%
10	Haleem, A.	2	2.9%

Source: Scopus Database

Contributing Countries

Table 4 displays the top ten contributing countries based on author affiliations. Malaysia leads overwhelmingly with 107 publications (64.1%), followed by Indonesia with 26 publications (15.6%). Other countries, including Brunei Darussalam, Pakistan, Singapore, Saudi Arabia, Canada, and the United Kingdom, contribute smaller but meaningful shares. This distribution indicates that halal research is strongly concentrated in Muslim-majority countries in Southeast Asia, reflecting the region's role as a global hub for halal industry development, governance initiatives, and academic research.

Table 4: Top 10 Contributing Countries

Rank	Country	Publications	Percentage (%)
1	Malaysia	107	64.1%
2	Indonesia	26	15.6%
3	Brunei Darussalam	6	3.6%
4	Pakistan	5	3.0%
5	Singapore	4	2.4%
6	Saudi Arabia	4	2.4%
7	Canada	3	1.8%
8	United Kingdom	3	1.8%
9	United States	2	1.2%
10	Nigeria	2	1.2%

Source: Scopus Database

Author Keywords

Table 5 presents the top ten most frequently used author keywords. Core themes such as *halal*, *halal certification*, and *shariah compliance* dominate the literature, indicating continued emphasis on foundational halal concepts. At the same time, increasing attention is observed for keywords related to *halal logistics*, *halal supply chain*, *consumer behaviour*, and *blockchain*. The presence of emerging keywords such as *blockchain*, *halal governance*, and *Islamic finance* suggests a gradual shift towards digitalisation, governance, and integrated management perspectives within the halal research landscape. Overall, the keyword analysis confirms that halal research is expanding and diversifying across multiple thematic domains.

Table 5: Top 10 Authors' Keywords

Keyword	Frequency	Percentage (%)
halal	47	43.5%
halal certification	12	11.1%
shariah compliance	9	8.3%
halal logistics	8	7.4%
halal supply chain	6	5.6%
consumer behaviour	6	5.6%
halal industry	5	4.6%
blockchain	4	3.7%
halal governance	4	3.7%
Islamic finance	3	2.8%

Source: Scopus Database

Science Mapping

This section presents the results of the network visualisation generated using VOSviewer. Three types of networks were examined, namely keyword co-occurrence, co-authorship, and

country collaboration. The overall mapping results provide an overview of the intellectual structure of halal research and reveal clear thematic patterns and collaboration tendencies across countries.

Keyword Co-occurrence Mapping

Keyword co-occurrence analysis was conducted to identify the conceptual structure and dominant research themes within halal studies. Based on the 70 analysed documents, the analysis produced four major thematic clusters representing the intellectual foundations of halal research.

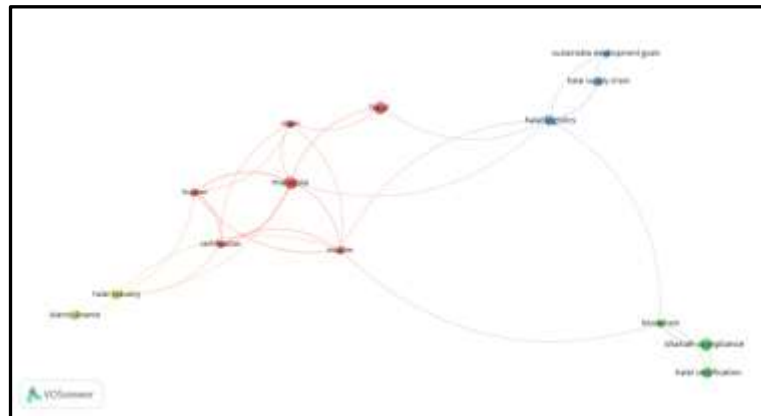


Figure 2: Keyword Co-Occurrence Network of Halal Research

Source: Scopus Database (Visualised Using VOSviewer)

The first cluster focuses on halal awareness, religion, and Muslim consumer behaviour, highlighting the central role of religious values, Muslim identity, and halal certification in shaping consumer trust. This cluster reflects the continued importance of faith-based considerations and consumer orientation within halal markets.

The second cluster centres on halal logistics and sustainable supply chain management, emphasising operational issues related to logistics coordination, supply chain integrity, and sustainability. These themes underline the growing need to integrate efficiency and ethical assurance within halal supply chains.

The third cluster relates to shariah compliance and digital technologies, particularly blockchain-based systems. This cluster indicates an emerging research focus on technology-enabled halal assurance, where digital tools are increasingly used to enhance transparency, traceability, and compliance credibility.

The fourth cluster connects halal industry development with Islamic finance, representing the strategic and economic dimension of halal research. This cluster highlights the role of financial systems, investment structures, and governance mechanisms in supporting the growth and sustainability of the halal ecosystem.

Overall, the keyword mapping reveals four interconnected domains—religious and consumer foundations, operational logistics and sustainability, shariah-compliant digital assurance, and industry-level economic development—reflecting the multidisciplinary evolution of halal research.

Co-Authorship Analysis

Co-authorship analysis was conducted to examine collaboration patterns among authors in halal research. Based on the analysed dataset, the co-authorship network reveals two dominant collaboration structures that characterise scholarly interactions within the field.

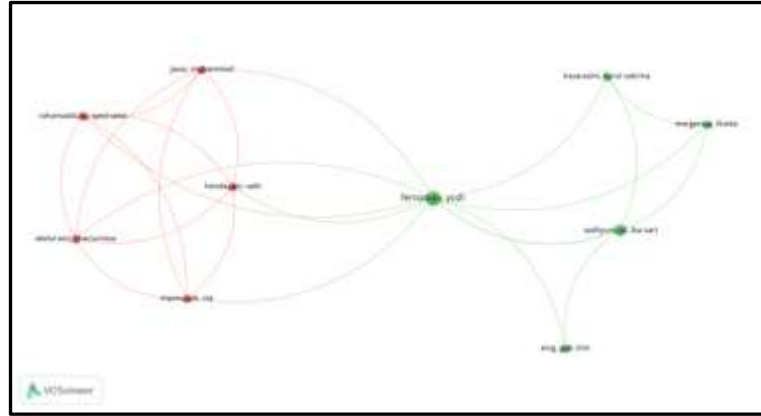


Figure 3: Co-Authorship Network of Halal Research

Source: Scopus Database (Visualised Using VOSviewer)

The co-authorship network reveals two dominant collaboration patterns. Yudi Fernando emerges as the most central and active author in the network, indicating his strong influence and extensive research collaborations. Two major collaboration clusters are evident. The first cluster, dominated by Malaysian scholars, includes authors such as Rahmaddulla Syed Radzi, Abdul Aziz Khairunnisa, and Maimunah Nia. The second cluster comprises Indonesian scholars, including Fineke Mergesa, Ika Sari Wahyuni, and Nurul Sabrina.

Overall, the co-authorship pattern suggests that halal research collaborations remain predominantly ASEAN-based and are largely structured along national affiliations. While regional collaboration appears strong, the limited cross-regional linkages indicate that halal research has yet to fully expand into broader global collaboration networks.

Country Collaboration Mapping

Country collaboration analysis was conducted to examine patterns of international research cooperation in halal studies. The resulting network provides insights into the geographical distribution and strength of cross-country research linkages within the field.

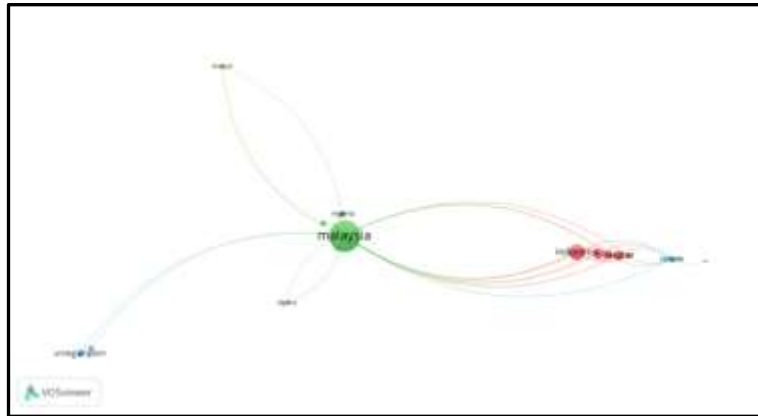


Figure 4: Country Collaboration Network of Halal Research

Source: Scopus Database (Visualised Using VOSviewer)

The country collaboration map shows that Malaysia functions as the central hub of halal research, forming strong collaborative links with countries such as Indonesia, Pakistan, Canada, and the United Kingdom. In contrast, countries including Finland and Nigeria appear as smaller nodes with limited research interaction. Although some degree of international collaboration is evident, the overall pattern remains highly concentrated within Muslim-majority countries in Southeast Asia. This concentration reflects the region's prominent role in halal industry development, regulatory leadership, and scholarly production.

Thematic Cluster

Cluster 1: Halal Awareness, Religion and Muslim Consumer Behaviour

This cluster includes keywords like halal, Muslim, Islam, Malaysia, human and certification. It reflects that initial halal research is closely associated with Muslim identity, religious practices, halal literacy, and basic certification needs. Research in this cluster focuses especially on value-based, cultural and religious factors influencing consumer trust, consumer purchasing attitudes and behaviours towards halal products and services

Cluster 2: Halal Logistics and Supply Chain Sustainability

Keywords in this cluster included halal logistics, halal supply chain and sustainable development goals (SDGs). It illustrates a movement toward operational and supply chain viewpoints concerning halal exploration, signifying the inner meanings of logistics management, traceability, and the uplink between sustainability practices. The emergence of this cluster highlights the increasing industry demand to maintain halal integrity throughout the production, storage, transportation and distribution processes.

Cluster 3: Shariah Compliance and Digital Technology

Shariah compliance, halal certification and blockchain are some of the keywords defining this cluster signifying that technology driven halal research has emerged. This theme highlights digital assurance, especially systems based on blockchain, to improve transparency and traceability as well as the effectiveness of shariah compliance. The emergence of the cluster

reflects a recent shift in halal scholarship towards technology-enabled governance and digital trust mechanisms.

Cluster 4: Halal Industry and Islamic Finance

Keywords in this cluster are halal industry and Islamic finance, that indicates related discussions on the development of halal industry with economic and financial dimensions. It is a strategic research focus on halal industry growth and investment, governance structures, and Islamic financial management.

More broadly, these domains underscore the inherently multidisciplinary and cross-disciplinary nature of halal research ranging from religious underpinnings to consumer behaviour to operational and supply chain management, digital technologies, and economic development. The evolution of these clusters indicates that halal scholarship has progressed from value- and religion-based studies towards more complex, technology-driven, and industry-oriented research domains, reflecting the increasing maturity of the field.

Emerging Trends

The findings reveal several important developments in the halal research landscape, as reflected in the temporal evolution of keywords across the analysed period.

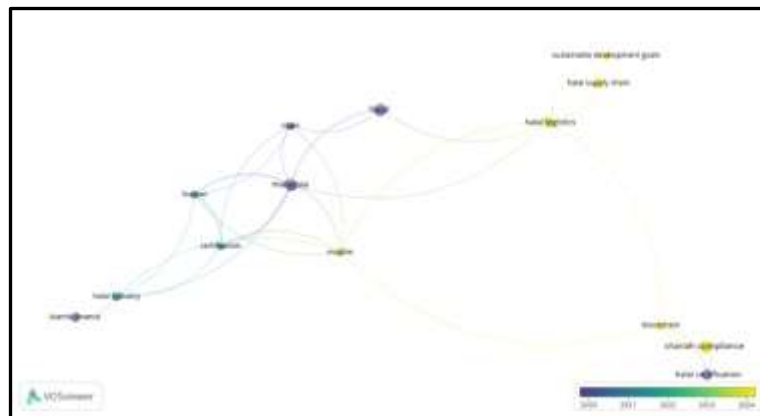


Figure 5: Overlay Visualization of Keyword Co-Occurrence Based on Average Publication Year

Source: Scopus Database (Visualised Using VOSviewer)

Figure 5 illustrates a clear temporal shift in halal research themes. Earlier studies were predominantly centred on consumer behaviour, religious considerations, and certification issues. However, from 2022 onwards, research attention has increasingly shifted towards digitalisation, sustainability, and technology-enabled halal assurance.

One prominent emerging trend is the growing focus on digital and technology-driven themes during the 2022–2025 period. Keywords such as *blockchain*, *sustainable development goals*, and *halal logistics* show a noticeable increase in occurrence, indicating an expanding research interest in the integration of digital technologies within halal assurance systems.

In parallel, the research focus has gradually shifted from traditional consumer behaviour studies towards technology-enabled halal systems. While early halal research largely emphasised consumer awareness and religious compliance, recent studies increasingly explore automation, digital assurance mechanisms, process transparency, and supply chain traceability as critical components of halal integrity.

The surge in publications observed during 2024–2025 further reflects the growing maturity of the halal research field. This increase corresponds with heightened academic and industry attention towards issues of digital governance, sustainability, and industry-wide integrity, particularly in response to evolving global halal market demands.

Moreover, the rising emphasis on security, transparency, and trust is evident from the increasing frequency of keywords related to blockchain and supply chain management. These developments suggest that halal integrity and traceability have become central research priorities in recent years.

Overall, the halal research field is transitioning from a traditional phase focused primarily on certification and consumer-related issues towards a more advanced stage characterised by smart technologies, integrated systems, and future-oriented halal assurance. These emerging trends are consistent with the sharp increase in scholarly output observed after 2022 and reflect the broader digital transformation of the global halal industry.

Discussion

This section reflects on the key implications of the bibliometric findings derived from performance analysis, science mapping, and thematic clustering of 70 halal-related articles published between 2004 and 2025. Taken together, the results suggest that halal scholarship has followed a clear evolutionary path. Early research was largely grounded in foundational concerns such as halal awareness and certification, while more recent studies have increasingly shifted towards advanced topics, including digitalisation, supply chain transparency, and technology-enabled halal assurance systems.

An examination of publication trends shows a marked increase in halal-related research output between 2019 and 2025, with publications in 2024 and 2025 alone accounting for nearly 40 per cent of the total dataset. This pattern signals that halal research is entering a more mature phase of scholarly development. The growing academic interest appears closely linked to the expansion of the global halal industry, heightened expectations surrounding governance, and stricter requirements for shariah compliance. Similar observations have been reported in earlier review studies, which associate the rise in halal research with broader industry growth and regulatory developments (Haleem et al., 2020). The gradual shift from predominantly consumer-focused studies towards technology-oriented research further reflects an increasing emphasis on systematic, evidence-based halal assurance mechanisms.

The keyword co-occurrence analysis reveals four dominant thematic domains within the halal literature: halal awareness and Muslim consumer behaviour; halal logistics and sustainable supply chain management; shariah-compliant digital technologies, such as blockchain; and halal industry development linked to Islamic finance. These themes highlight the inherently multidisciplinary character of halal research, bringing together religious values, consumer perspectives, operational and supply chain systems, technological innovation, and economic

governance. This diversity is consistent with earlier findings that describe halal scholarship as fragmented yet steadily expanding across multiple disciplines (Abdul Rahim et al., 2023; Haleem et al., 2020). (Koc et al., 2024) underscore that despite the field's expansion into governance- and technology-oriented areas, consumer-related themes remain prominent. This empirical evidence suggests that these human elements continue to play a central role in shaping purchase intentions across diverse market contexts.

Analysis of the co-authorship network further indicates that research collaboration in halal studies remains largely concentrated within ASEAN countries, particularly Malaysia and Indonesia. Prominent scholars, such as Yudi Fernando, emerge as central figures within the collaboration network, while country-level clusters point to strong national research groupings. Although some international connections with countries such as Pakistan, Canada, and the United Kingdom can be observed, the overall collaboration structure remains predominantly regional. According to (Donthu et al., 2021), this pattern suggests that halal research has yet to achieve extensive global integration, a feature commonly associated with research fields that are still developing and regionally anchored.

The findings also point to a broader transformation currently taking place within halal research, characterised by a growing emphasis on digitalisation and sustainability. The appearance of keywords related to blockchain, the Sustainable Development Goals, and halal logistics after 2022 reflects increasing scholarly attention to issues of transparency, traceability, and risk management within halal systems. These developments suggest that future research may place greater emphasis on digital halal assurance models, the harmonisation of global standards, and stronger integration between halal governance, financial systems, and industrial development (Hidayat & Musari, 2022).

Overall, the results indicate that halal research is expanding not only in terms of publication volume but also in conceptual breadth. There is a clear shift away from traditional certification- and consumer-centred perspectives towards research approaches that are more strongly oriented towards technology and sustainability. By offering a comprehensive bibliometric overview of halal research over more than two decades, this study contributes to a clearer understanding of how the field has evolved, how scholars collaborate, and which research priorities are likely to shape future developments within the halal literature.

Implications

Theoretical Implications

This study offers a clearer organisation of the halal research landscape by grouping existing studies into four main thematic clusters: (i) religion and consumer behaviour, (ii) halal logistics, (iii) digital compliance, and (iv) industry development and Islamic finance. Taken together, these clusters illustrate how halal research has evolved into an increasingly multidisciplinary field. More importantly, this structured view opens up opportunities for the development of new theoretical models, particularly those that integrate technological innovation, governance mechanisms, and consumer perspectives within halal studies.

Methodological, Practical, Policy, and Collaboration Implications

The bibliometric findings of this study carry several important implications across methodological, practical, policy, and collaborative dimensions. From a methodological standpoint, the results reinforce the value of bibliometric analysis as a robust approach for mapping research trends and uncovering the intellectual structure of halal scholarship. The use of systematic and quantitative techniques, supported by rigorous data-cleaning procedures and the application of VOSviewer, provides a transparent and replicable framework that can be adopted in future halal research.

From a practical perspective, the findings point to a growing need for industry stakeholders to embrace advanced technologies, including blockchain, digital assurance systems, and supply chain transparency tools, as part of efforts to strengthen halal integrity. Such technologies play a critical role in reducing operational risks, improving traceability, and reinforcing consumer trust. In this sense, the study offers practical guidance for firms seeking to enhance operational efficiency while responding to rising expectations for credible and verifiable halal assurance. In terms of policy implications, Malaysia and Indonesia—both of which emerge as leading contributors to halal research—are well positioned to translate these insights into stronger regulatory frameworks, regional standards, and cross-border cooperation initiatives. These policy efforts are particularly important for supporting the development of a more coherent, resilient, and internationally aligned halal ecosystem.

With respect to research collaboration, the strong concentration of scholarly partnerships within ASEAN countries highlights the need to extend research networks beyond the region. While regional collaboration has been instrumental in advancing halal scholarship, broader global partnerships would help introduce more diverse perspectives and support a more balanced and inclusive development of halal research worldwide.

Future Research Agenda

The future research agenda for halal studies points to several interrelated areas that are crucial for the continued growth and global relevance of the field. First, research on digital integration should place greater emphasis on evaluating technologies such as blockchain, artificial intelligence, and digital detection systems, particularly in relation to their ability to enhance transparency, efficiency, and governance within halal supply chains. Further work in this area may also focus on the development of technology-driven halal assurance models that support verifiable digital governance.

Second, future studies on cross-cultural governance should explore how halal practices are implemented in non-Muslim contexts. Comparative analyses of regulatory frameworks, standards, and levels of consumer understanding across regions would be especially valuable in supporting the development of more harmonised global halal governance models.

Third, reflecting the thematic shifts identified in this study, future research should examine organisational practices related to contamination risk management, standards compliance, and the design of comprehensive halal assurance systems. This direction aligns with the observed transition from research centred on consumer intentions towards studies that emphasise operational processes, logistics, and integrated halal systems.

Fourth, given that existing research collaboration remains heavily concentrated within ASEAN countries, future studies should actively seek to strengthen global research networks, particularly across Europe, the Middle East, and North America. Expanding international collaboration would not only enhance intellectual diversity but also contribute to more robust theoretical development within halal research.

Fifth, to strengthen the economic foundations of the field, future research should further investigate the relationship between halal industry development and Islamic finance instruments. Areas such as capital structure, investment mechanisms, corporate governance, and global competitiveness warrant closer examination, as they may contribute to the emergence of a more integrated halal–Islamic finance ecosystem.

Finally, sustainability and the Sustainable Development Goals (SDGs) represent an increasingly important area for halal research. Future studies should explore how halal principles align with SDG 12 on sustainable consumption and production, as well as their broader contributions to green economy initiatives and sustainable food systems. Collectively, these directions highlight digital transformation, cross-cultural governance, operational integration, global collaboration, financial linkages, and sustainability as key pillars for advancing halal scholarship.

Limitations

While this bibliometric mapping provides a comprehensive overview, it is subject to several inherent limitations that should be acknowledged. Primarily, the scope of the analysis is confined to journal articles indexed within the Scopus database, which potentially excludes significant scholarly contributions from other platforms such as Web of Science or Google Scholar. Furthermore, the study's focus on English-language publications may have overlooked critical insights or regional nuances documented in local languages. Finally, it is important to note that the thematic structures and clusters identified are inherently tied to the specific search keywords selected for this study; the application of alternative search strings might reveal different research trajectories or emerging sub-themes.

Conclusion

By examining 70 Scopus-indexed articles over a 21-year period (2004–2025), this study shows that halal research has evolved substantially beyond its foundational origins. The field has expanded into a multidisciplinary domain, moving from an initial emphasis on religion and Muslim consumer behaviour towards areas such as halal logistics, supply chain management, and industry development linked to Islamic finance.

Keyword mapping and co-authorship analyses further reveal a maturing research landscape, characterised by the emergence of advanced themes including blockchain and digital assurance, increasingly aligned with global sustainability goals. The findings also indicate that Malaysia and Indonesia serve as key intellectual hubs for halal scholarship, supported by strong and well-established regional collaboration networks. At the same time, the concentration of research activity within these regions highlights the need to broaden global research partnerships in order to foster a more diverse and balanced halal knowledge base.

Overall, this study goes beyond merely documenting the development of halal research by providing a robust empirical foundation to inform future research agendas. The findings offer valuable insights for academic researchers, industry practitioners, and policymakers seeking to strengthen the global halal ecosystem through technological innovation, standardisation, and enhanced international cooperation.

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