



## JOURNAL OF TECHNOLOGY AND OPERATIONS MANAGEMENT

<http://e-journal.uum.edu.my/index.php/jtom>

How to cite this article: Che Hassan, M. H. & Osman, L. H. (2024). Improving Integrity Halal Supplier in Food Supply Chain: Scoping Review. *Journal of Technology and Operations Management*, 19(1), 24-39. <https://doi.org/10.32890/jtom2024.19.1.3>

### IMPROVING INTEGRITY HALAL SUPPLIER IN FOOD SUPPLY CHAIN: SCOPING REVIEW

Muhammad Hamdi Che Hassan and Lohkman Hakim Osman

*Faculty of Economics and Management, Universiti Kebangsaan Malaysia  
43600 UKM Bangi Selangor, Malaysia*

*Corresponding author: p119828@siswa.ukm.edu.my & lohkman@ukm.edu.my*

Received: 07/05/2024      Revised: 10/06/2024      Accepted: 22/07/2024      Published: 31/07/2024

#### ABSTRACT

Ensuring integrity in a halal supplier is important for maintaining the trust of consumers who seek halal products. Any compromise in the integrity of the supplier can lead to a loss of confidence in the halal status of their products. In this review will identify what the main key finding will increase integrity in supplier and the objective of this review is to produce a comprehensive mapping next future research and the main themes related to halal supplier in food supply chain. Method: A scoping review of the literature was conducted between 2018 and 2023 using the Web of Science (WOS) and Scopus databases to identify what is the nature of published scientific literature on this topic. A total of 13 journal articles were identified for a full review. Result: Five themes were found from the literature relevant to food supply chain integrity through halal supplier. The main themes include perceive value, transparency, technology, standard of procedure and supplier integration. The review indicates that most of the studies are conducted in understanding the supplier efficiency in supply chain. Conclusion: The emergence of findings regarding suppliers in the halal food supply chain will assist in the investigation of halal providers, while also providing significant insights for researchers and practitioners in their respective fields. Moreover, these reviews will be helpful in the supervision of suppliers in the halal food supply chain. This offers future research to more comprehensive research is required to further investigate the performance of halal supplier in food supply chain.

**Keywords:** Halal supply chain; supplier integrity; halal certification; halal food industry; quality assurance.

#### INTRODUCTION

One of the areas of the global economy that is expanding the fastest is the halal industry (Fathoni, 2020). The worldwide market has witnessed a notable surge in the demand for halal products, encompassing

both Muslim-majority and non-Muslim nations. According to (Akram 2022), the food market is projected to increase at a compound annual growth rate of 6.3% and reach \$1,972 billion in 2024. Cleanliness, health, and halal assurance is an important aspect for Muslims in choosing a food or product. It is undeniable that Muslim consumers are increasing growth and halal market opportunities are very large. Halal food and products are expected to remain the highest in the world in 2024. This is also due to the demand from Non-Muslims who also choose halal products because of the quality of products and products that are not harmful to health.

However, halal food is not only focused on production (Ali et al., 2017) but Supplier Quality also plays a very important role in ensuring raw materials are in good quality condition because lack of quality will harm halal food and avoid mixing with non-halal ingredients. (Naeem et al. 2020). This align with study by (Kamaruzaman, 2020) to prevent any activity that will affect the halal food supplier quality should be the main criteria in order to selecting supplier and ability to offer competitive pricing, product quality, strong financial position, order quantity flexibility, and product volume should need to be consider.

The issue faced by halal suppliers revolves around ensuring the authenticity and integrity of their halal products amidst the risk of cross-contamination. For example, in the halal meat industry, there is often a lack of compliance with the halal management guidelines that have been set, this fact is supported by studies that have been carried out by (Shahidan & Amid 2023) states that the Halal meat industry, in particular, faces challenges related to supply chain management, counterfeiting, and fraud, with the risk of cross-contamination or violation of Shariah principles as this long and complex supply chain causes doubts about the halal process to become unconvincing and causes the quality of meat to be contaminated. This challenge requires the implementation of rigorous measures throughout the production and distribution processes to prevent any contact with non-halal ingredients or substances. It is important in ensuring the integrity of halal products in the supply chain from upstream to downstream (Tieman, 2011).

Some foods have become non-halal due to fraudulent suppliers who do not comply with Shariah law, although the contribution of suppliers as raw material suppliers is a major key to the integrity of the halal food supply chain (Khan et al., 2019). Similarly, (Tieman et al. 2012) noted that the purchase of raw materials is important in the halal food supply chain model. It plays a role in managing suppliers, as suppliers in the halal food supply chain have differences from non-halal food supply chain suppliers (Fujiwara, 2017). Integrity is essential for meeting halal certification requirements, which are frequently predicated on stringent requirements pertaining to the whole production process. Integrity violations may result in the loss of halal status, which could have serious implications for business. From an ethical point, maintaining the religious and cultural values connected to halal products requires a supplier of halal to be honest and trustworthy. This covers things like treating animals humanely and making sure there are no non-halal pollutants during the production process. Therefore, the gap in halal supplier in halal food is the lack of studies on criteria improving integrity in supplier selection and risk management to ensure halal compliance in the food industry.

In sight of this, the objective of this scoping review is to investigate whether the scientific studies that are already available meet the requirements of halal supplier studies. As a result, the purpose of this study is to investigate what the criteria for improving or effecting integrity in halal supplier and provide answers to two research questions: "what future research related to halal supplier" and "what the main themes in this area of study". Therefore, the purpose of this work is to develop a comprehensive mapping of the extent of research that has been done on halal suppliers. The scope of this study will be narrowly focused on the food supply chain. The scoping review will provide a knowledge of the significant concept from a fresh perspective, which will open the door for further consideration of the concept through further consideration. The purpose of this objective is to create a detailed knowledge of important integrity through halal supply might contribute to the competitive landscape for the supply chain and halal business, with the intention of providing practitioners, policymakers, and researchers with relevant insights. In addition to the portion that serves as an introduction. This paper is structured

as follows: section 2 describes the proposed scoping review method, while Section 3 details the result. Finally, Section 4 brings the discussion, recommendation, and conclusion.

## METHODOLOGY

The scoping review framework is based on the research undertaken by (Arksey and O'Malley 2005), which was subsequently updated by (Levac et al. 2010). According to (Davis et al. 2009), this style makes it possible to combine a variety of research methods and offers a spectrum of information rather than elaborating on the complexity of the material. Scoping reviews are a type of cognition synthesis that assesses the degree and direction of rational investigation on a certain issue by outlining major concepts, themes, sources, and categories of evidence (Rumrill et al., 2010). Scoping reviews are a type of review that examines the subject matter. This method of research will be helpful for subjects that are difficult to understand (Hamel et al., 2021). It is possible that scoping reviews may not necessarily evaluate the quality of studies that meet the inclusion criteria, nonetheless, assist in the evaluation of a thorough systematic review and track research evidence and knowledge gaps for decision-makers. The stages that make up this process of scope review are listed in their entirety. To complete a scoping review, there are five processes involved.

In the one stage, the research questions are formulated and evaluated. To this scoping review, two research questions have been formulated to explore the future research related to halal suppliers and to identify the themes in this field of study. Scope of this study will be narrowly focused on the food supply chain.

Stage two: Identification of relevant studies. Data base will rely on two Academic journals were Web of Science (WOS) and Scopus. A complete search string of keywords relevant to improving integrity in food supply chain through halal supplier. Table 1 is the search strategy included a comprehensive search string of keywords related to supplier i.e. halal supplier, halal logistic, halal supply chain, halal integrity and food supply chain, combined with Boolean operators OR and AND.

Stage three: Table 2 is screening process, filtering to eliminate redundant articles. The publications selected for analysis met the specified criteria for inclusion and exclusion. Only research papers were chosen during the initial screening process. The systematic review papers, review articles, meta-analysis articles, meta-synthesis articles, book series, novels, and book chapters that did not meet the inclusion criteria were excluded. Only publications that were published in English between the timeframe six year of 2018 to 2023 were evaluated, taking into consideration both the language and publication year. Publications in computer science, decision sciences, engineering, psychology, energy, and medicine were chosen to exclude.

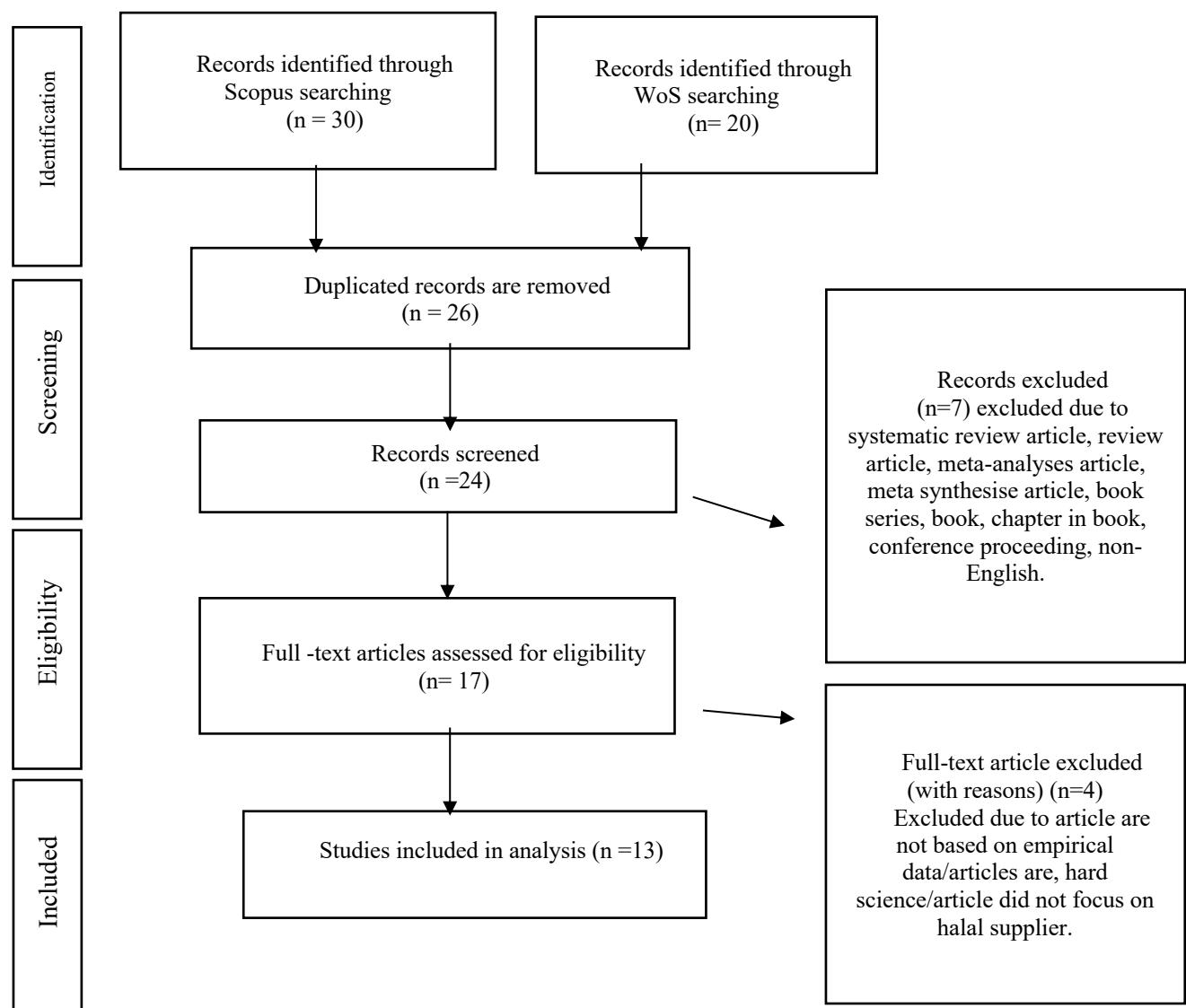
**Table 1**

*The Search of Strings*

Database search string	
WOS	TS= " halal supplier " AND " halal logistic " AND " halal supply chain " AND "food supply chain" AND "supply chain management" AND "halal integrity"
SCOPUS	TITLE-ABS-KEY(" halal supplier ") AND ("halal logistic") AND ("halal supply chain") AND ("food supply chain") AND ("supply chain management") AND ("halal integrity")

**Table 2***The Inclusion and Exclusion Criteria*

Criterion	Eligibility	Exclusion
literature type	research articles	book series, book, chapter in book
Language	English	non-English
Timeline	2018-2023	<2018
Subject area	Business, Management and Accounting, Social Sciences, Economics, Econometrics and Finance	Computer Science, Decision Sciences, Engineering, Psychology, Energy, Medicine

**Figure 1***PRISMA flow diagram of the study selection process*

## RESULTS

The search method has been explained in length in the past, and after doing a search of the databases WOS and Scopus, fifty articles were discovered as a result of the search. Due to the fact that there are twenty-six articles that are identical duplicate, the initial hit on the database does not include any of these articles. After further consideration, a total of seven papers were deemed ineligible because their names and summaries, as well as the subject matter, language, and format of their reviews (such as systematics and meta-analysis), were not acceptable. It was found that four of the remaining seventeen papers were not relevant to the goal of the scope study after additional review, which led to their removal from consideration. This decision was made after a thorough reading of the articles. Only thirteen studies were pertinent and appropriate for the aim of this investigation, taking into consideration the optional reporting elements for the perspective of the systematic review (Moher et al., 2015). This is determined after the selection procedure subject to a strict approach. (Fig. 1).

The selection of articles was limited to empirical research that were published in journal articles within a period of six years, and it was founded on several different considerations. Before reviewing the journal, the conference proceedings were not included since there was a lack of systematization and transparency due to traditional evaluations, which were most likely influenced by the author's subjectivity (Hodgkinson & Ford, 2014). The purpose of the study was to determine the extent to which halal suppliers can benefit from the implementation of halal techniques and from the halal value chain, which can bring several benefits to the supplier, including improvements in inventory management, product quality, customer satisfaction, and supplier relationships (Manzouri, 2014).

The purpose of this study is to enrich the source of journal for this study by selecting high-quality articles that have been published during the past six years to carry out a scoping review. The findings indicate that the approach that is utilized the most is the qualitative study, twelve articles use qualitative method and only one article use quantitative method. In accordance with the criteria outlined above, Table 3 summarizes the 13 publications of recent research that were selected for inclusion in the scoping review (Randeree, 2019; Usman, 2023; Randeree 2019; Kristanto, 2023; Munzir, 2018; Ali 2022; Khan 2022; Kurniawati 2023; Fujiwara, 2018); Rohani, 2018; Mohd, 2018; Kitayama, 2018; Abebe, 2022).

**Table 3***Data Charting Form*

No	Author & Year	Finding	Sub-themes	Theme	Future Research
1	(Randeree 2019)	The results of the study showed that the main criteria for best criteria is base on Quality, Price, and Service. Supplier selection criteria analysed through Analytic Hierarchy Process (AHP) included: Quality (consistency, defects), Price (competitiveness, discounts), Service (responsiveness, communication).	Reliability	Perceive Value	Expand scope to examine other aspects of halal supply chain beyond supplier selection, like procurement, logistics etc.
2	(Usman 2023)	Use organic feed, remove feathers by hand, and use sharp knives for slaughter. Depending on distance, motorbikes or cargo planes delivered ducks in enclosed containers. Suppliers helped maintain integrity from harvesting to restaurant delivery. Maintaining consumer halal assurance required strict adherence to halal certifications and supplier dimensions.	Integrity	Transparent	Exploring collaboration and information sharing practices between SCM partners and opportunities for improvement
3	(Randeree 2019)	Due to low agricultural productivity, the UAE imports most of its food. Brazil, Australia, New Zealand, Thailand, Singapore, etc. supply most food. To serve significant Muslim consumer markets like the UAE and GCC, several supply countries have implemented halal certification and export programmes. Brazil, Australia, and New Zealand export mostly halal beef and poultry. Muslim market certification bodies certified them. The research argues that some UAE customers doubt the integrity of non-Muslim majority country halal certifications for imported food products. Due to the lack of a global halal standard, consumer confidence varies by certifying organisation and supplier country.	Certificate Halal	Transparent	Studying halal integrity customer attitudes in supplier nations and import-reliant markets like the UAE. Assessing how non-Muslim food exporter certification authorities build credibility with Muslim consumers given religious and cultural disparities.
4	(Kristanto 2023)	If a few suppliers have troubles, it might increase supply chain risks like late or damaged delivery. Late milkfish delivery by vendors could ruin raw materials. Supplier-contaminated raw materials were another issue. Suppliers are crucial to raw material quality. Another supplier risk was poor raw material quality checks. Weak supplier management and control of supplier operations and raw material quality requirements increased hazards. Supplier evaluation and approval based on halal compliance standards was stressed in risk reduction techniques. Avoid over-reliance on a few providers by building multiple relationships. Supplier facility and process audits and raw material quality inspections upon receipt were mitigation strategies.	Supplier Risk	Standard Operating Procedures	Future studies could expand the scope to include other stakeholders like suppliers, distributors, agents and consumers to get a more holistic view of risks across the full supply chain.

5	(Munzir2018)	Respondents indicated training helps workers handle Halal goods and avoid contamination to maintain integrity. Standards help systems get certified and reassure customers. Supplier guarantees must ensure only Halal products enter the warehouse. SOPs avoid product mixing by establishing regular procedures. Halal issues can be quickly decided by an internal committee. Documentation is crucial to distinguishing Halal from non-Halal warehouse handling. Staff need current expertise to recognise Halal from mixed ingredients.	Supplier Knowledge	Standard Operating Procedures	Examine the relationship between the identified factors e.g. how training impacts implementation of SOPs or knowledge.
6	(Ali 2022)	For supplier integration, internal integration was crucial. Internal coordination and collaboration aid supplier integration. Raw material and production process integrity depends on supplier integration. Working closely with suppliers decreases risk. Customer integration improves demand comprehension and transparency, improving production integrity and information provision. Integrity in raw materials, production, and information is key to meeting customer food quality expectations.	Work Process	Supplier Integration	Conduct a longitudinal study to analyze how the impact of supply chain integration on integrity and quality may change over time as capabilities evolve. This would offer insights about dynamics.
7	(Khan 2022)	In the Halal food supply chain, supply-related risks are major. Material procurement and supply chain operations outside the focus firm pose these hazards. The highest supply-related risk is "raw material integrity issue". This shows the danger of suppliers not providing Halal-compliant raw materials. Supply-related risk factors like supplier failure are also important. This is the risk of suppliers not providing raw materials in the quantity, quality, time, etc. manufacturers require.	Supplier Environment	Standard Operating Procedures	Developing a more comprehensive risk management model incorporating specific mitigation strategies and controls linked to prioritized risks. This could help practitioners take targeted actions.

8	(Kurniawati 2023)	Halal food products were overstocked and scarce due to uneven distribution. High overstock and shortfall expenses, Uneven distribution causes inventory holding/spoilage expenses and sales losses owing to shortages. Inefficient vehicle route. Only distance was considered for transportation costs, not optimized multi-stop routes.	Traceability	Technology	Dynamic/online vehicle routing to handle real-time disruptions and re-routing of vehicles.
9	(Fujiwara 2018)	Meeting Halal criteria under Islamic teachings/Shariah law was both companies' principal risk. This affected their supply risk perceptions. Limited resources led BUSINESS A to self-manufacture and regular site visits as risk mitigation techniques. BUSINESS B used Halal certificates, declarations, audits, and contracts for control. BUSINESS B might source from numerous certified global suppliers, giving it more options. Self-manufacturing protected BUSINESS A from overseas suppliers. Since Halal certifications and regulations vary internationally, monitoring suppliers directly provides more assurance than using foreign certifications.	Auditing	Supplier Integration	Conduct additional case studies to compare supplier management practices of more small, medium and large enterprises producing halal food
10	(Rohani 2018)	Suppliers are vital to the supply chain and collaborate. Collaboration between companies (e.g. halal food producers) and suppliers is being investigated. How well companies and suppliers collaborate on green practices will be rated. Supplier collaboration may moderate the association between green practices and sustainable performance.	Assessment & Selection	Supplier Integration	Examine practices, collaboration and performance outcomes longitudinally over time to study evolution and causal impacts.
11	(Mohd 2018)	Vertical integration is used by Ayamas Food Cooperation Sdn. Bhd. to control raw material suppliers through subsidiary farms and distribute through KFC and Pizza Hut. Based on supply chain strategies, Ayamas	Documentation	Supplier Integration	Impact of technological adoption. Research could analyse the impact of AFC adopting new technologies recommended in the

		Food Cooperation Sdn. Bhd. products were classified as stable, reactive, or efficient reactive to fit product features and market demand. Through strict monitoring and documentation, Ayamas Food Cooperation Sdn. Bhd. ensures quality and halal standards are met from supplier selection to processing at their 3 plants.			study such as database systems, Internet of Things, Industry 4.0 solutions on their supply chain performance and competitiveness
12	(Kitayama 2018)	It is difficult to ensure halal foods are not mixed or contaminated with non-halal meals throughout transportation from producers to retailers/restaurants in Japan, making the distribution stage the weakest link. Halal-certified companies integrated delivery and information. Muslim-friendly companies prioritised information integration over delivery integration.	Information Sharing	Supplier Integration	Further exploring the "distribution" stage of the supply chain through case studies of logistics companies and proposed solutions to ensure segregation of halal and non-halal foods.
13	(Abebe 2022)	The study indicates that perceived institutional pressures strongly influence agro-food supply chain integration. This implies food makers form closer, longer-term supplier connections due to rules, industry standards, and social norms. Manufacturers and suppliers intensify food safety practices via supply chain integration. Long-term relationships, strategic information sharing, IT, and logistic integration increase food safety. Perceived institutional pressures promote food safety when enterprises have strong, integrated supplier connections. Pressures do not improve food safety without strong manufacturer-supplier relationships. For expanding food supply chains to meet regulatory, industry, and social food safety standards, manufacturers and suppliers must work together long-term. Pressures do not boost performance without integration.	Collaboration	Supplier Integration	Supplier perspective: Survey suppliers in addition to manufacturers to get their view on institutional pressures and integration efforts.

The scoping review generates sub-themes and theme to answer the research question what the main theme in this area of study. There are five major themes that are then divided into eleven sub-themes.

The first theme is Perceive Value (Reliability) important factor in customer loyalty for halal, particularly in non-Muslim majority areas. Halal logistics performance, halal supplier service quality, perceived service value, and customer satisfaction are all factors that influence customer loyalty. (Masudin 2018).

Second theme, Transparency (integrity and certificate halal) crucial aspect of the halal supply chain, particularly in ensuring that products are halal compliant. emphasize the importance of transparency, supplier engagement, and risk management in enhancing halal procurement practices. Transparency in the halal supply chain involves obtaining rigorous supply chain validation, strengthening the relationship between buyers and suppliers, and ensuring halal assurance traceability. This transparency is essential for building and maintaining consumer confidence in the halal status of products, especially considering issues such as food fraud and fake halal documentation.

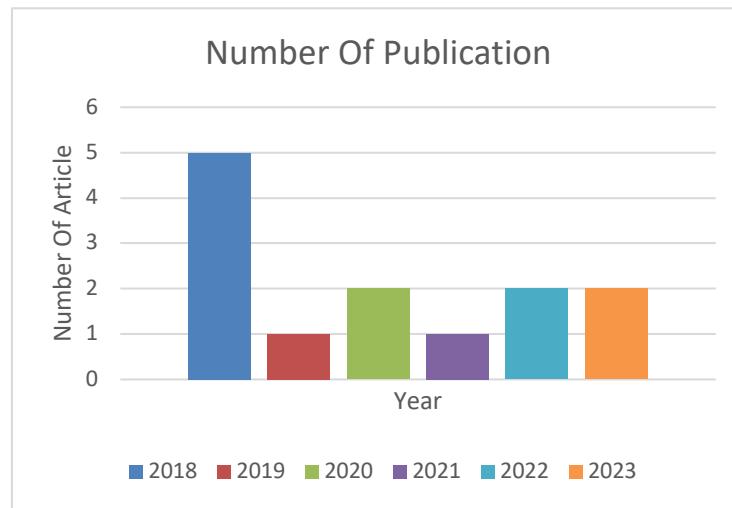
Third theme, Standard Operating Procedures (supplier risk, supplier knowledge, supplier environment) The standard of operation in halal suppliers involves the implementation of halal standard operating procedures (SOPs) to ensure that the products comply with halal standards. The development of a halal supply chain risk management framework is also important to identify risks, risk agents, and mitigation steps. involves several phases, including mapping the supply chain activities, identifying risks and risk agents, and measuring mitigations based on the company resources that have a profound effect on risks such as employee activity, machinery, and work environment. Training of good manufacturing practice, creating clean-up watch schedules, halal use of raw materials and additional materials, and additional purses and facility are among the prioritized mitigations for frozen food companies.

Four theme, Technology (traceability) technology in the halal supply chain has been a subject of study, particularly in the context of the impact on halal logistics performance and SMEs' performance in the halal food industry. readiness to adopt technology in the halal industry and the quality of halal service suppliers significantly influence the performance of halal logistics.

Five theme, Supplier Integration (work process, auditing, documentation, information sharing, collaboration) the integration of suppliers in the halal food supply chain is a crucial factor in ensuring halal food safety and quality. supply chain integration (SCI), including supplier integration, has significant effects on the dimensions of halal food supply chain integrity, which in turn leads to halal food safety and quality (Ali, 2022). The failure of suppliers to deliver materials that comply with halal standards is identified as a prominent risk in the halal food supply chain, emphasizing the importance of supplier integration in mitigating such risks (Khan, S. 2022). In terms of years of publication, Figure 2 shows the number of articles published in Web of Science (WOS) and Scopus from 2018 to 2023. In 2018 there are five articles reported (Munzir, 2018), (Fujiwara 2018), (Rohani 2018), (Mohd 2018) and (Kitayama 2018). Only one article was published in 2019 (Randeree 2019). In 2020 two article were published (Usman 2020) and (Gumataw 2020). Next in 2021 one article was reported (Fauzi 2021). Reported were two articles, spanning a duration of two years, namely 2022 (Ali 2022) and Khan 2022). and 2023. (Kristanto 2023) and (Susanty, 2023). In addition, the academic disciplines that were covered by the papers included business, management, and accounting, as well as the social sciences, economics, econometrics, and finance.

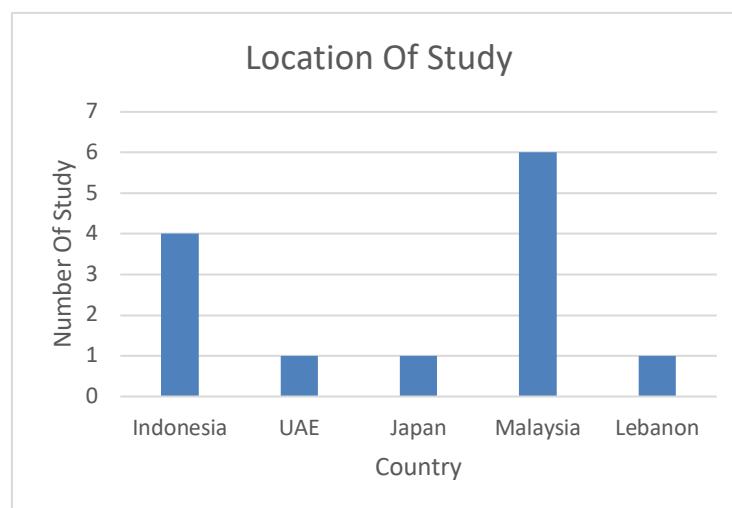
**Figure 2**

*Number of articles published in Web of Science (WoS) and Scopus*



**Figure 3**

*Location of study*



From the finding, total ten study conducted in developing country such as Malaysia and Indonesia. On the other hand, three study were recorded in develop country such as UAE, Japan and Lebanon. This finding show mostly study conducted in developing country compared to develop country. The study of supplier integrity is important in both developed and developing countries. In developed countries, supplier integrity is crucial to ensure compliance with regulatory and quality management standards, as well as to maintain product integrity and quality, especially in industries such as pharmaceuticals and cold chain management (Amarauche, 2021). On the other hand, in developing countries, studying supplier integrity is important for improve organizational performance and enhancing the supply chain management practices of essential products like food industry.

## **Perceive Value**

From this finding, the value that is offered can also make a supplier more competitive. criteria that become the main guide in determining supplier performance is based on quality, price, and service because competition is not only the ability to offer cheap prices but in terms of quality in supply becomes a very important criteria in addition to offering services such as raw material conveyors and ensuring raw materials are sent in good condition.

## **Transparency**

Strict adherence to halal certification and supplier dimensions is essential to maintain halal assurance for customers. According to the study the road (Randeree 2019) UAE country is dependent on relying on imports for food supply due to limited local agricultural production. These supplier countries have developed their own halal certification and export programs to cater to the large Muslim consumer market such as in the UAE. However, there are concerns among some UAE consumers about the integrity of halal certification provided by non-Muslim majority countries for imported food products. This is because countries that obtain halal certificates are not necessarily halal in their processes, suppliers do not share all information related to halal processes, which is a concern for Muslim consumers and the lack of global halal standards.

## **Technology**

Dependence on multiple suppliers can increase supply chain risks such as late or faulty deliveries if those suppliers encounter problems. Late delivery of milk fish by suppliers was identified as a risk that could lead to spoilage of raw materials. Issues such as contaminated raw materials received from suppliers were also identified as potential risks. The lack of checks on the quality of raw materials received from suppliers has been noted as another risk agent associated with suppliers. Ineffective supplier management and lack of oversight of supplier practices and raw material quality standards contribute to the risk. To mitigate risks from suppliers, it is important to stress the importance of Supplier Assessment and approval based on halal compliance standards and to develop multi-supplier relationships to avoid over-reliance on multiple suppliers.

## **Standard Operating Procedures**

Standard Operating Procedures play an important role in halal processing to ensure that the raw materials used are not mixed with non-halal ingredients. Standard Operating Procedures serve as guidelines for standard procedures to prevent mixing of goods and guarantees must be in place to ensure that only Halal approved products enter the warehouse. The internal committee is a reference point for quick decisions on emerging Halal matters. Documentation is the main evidence to distinguish between Halal and non-Halal handling in a warehouse. Up-to-date knowledge is essential for staff to clearly distinguish Halal status and mixed ingredients. Internal integration was found to be essential to achieve the integration goals of the provider. Proper coordination and cooperation internally help to integrate with suppliers.

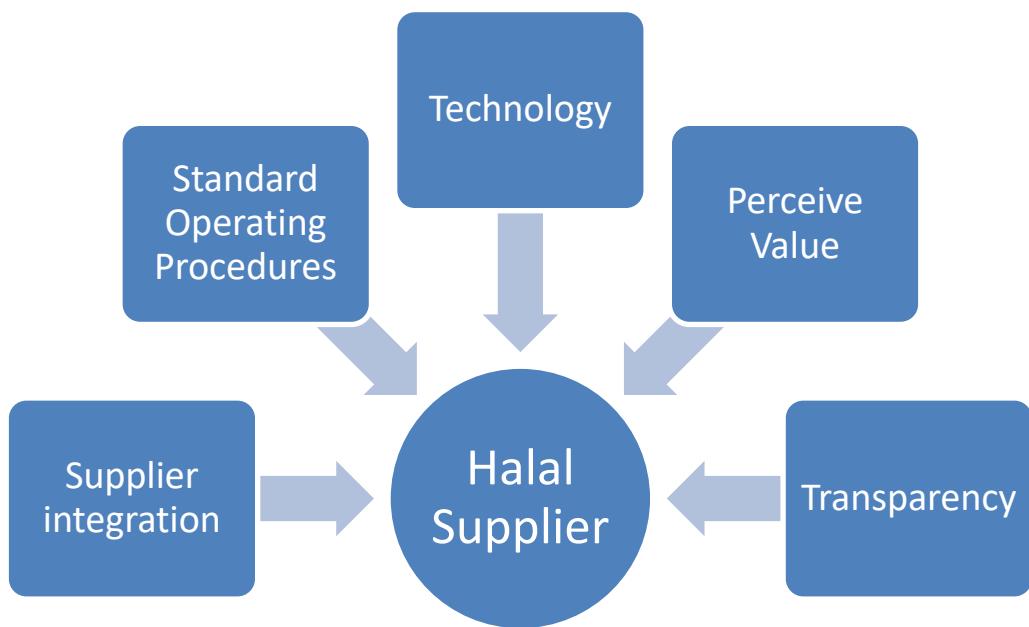
## **Supplier Integration**

Supplier integration involves establishing close collaboration and cooperation between suppliers and customers with the goal of reducing inventory levels, shortening delivery times, and improving customer service (Payaro 2023). adopt backward vertical integration towards suppliers by controlling raw material suppliers. In addition, ensuring quality and halal standards are met at all stages of production from supplier selection to processing through strict monitoring and documentation. allows to better understand the demand and maintain transparency, thereby positively affecting the integrity of production and the provision of information. Companies with halal certification adopt delivery

integration strategies (eg separate halal food delivery) and information integration (eg. provide instructions on halal food handling). Such supply chain integration, in turn, increases the intensity of food safety practices adopted by manufacturers and their suppliers. Things like long-term relationships, strategic information sharing, the use of Information Technology, and logistical integration help improve food safety practices. Figure 4 shows an overview of the theme that has been adapted from the overall findings.

**Figure 4**

*Framework themes for improving integrity halal supplier*



## CONCLUSION

This scoping review confirms that halal supplier gives a impact of halal suppliers on the food supply chain is significant, particularly in relation to halal food safety and quality. The study has shown that supply chain integration, including internal, supplier, and customer integrations, has significant effects on the dimensions of halal food supply chain integrity, leading to food safety and quality. This is a new direction for future research for explore on how far these five criteria that will impact on integrity halal supplier. Studies related to Halal suppliers in the food supply chain show a very growing growth, among the countries that discuss halal suppliers are Malaysia and Indonesia to be the Islamic countries that mostly discuss halal food suppliers and halal supply chain. However, there are some issues that are encountered, willingness to comply with halal requirements is very challenging especially for SME suppliers because the cost of maintaining halal in every aspect is a high cost to be borne by SMEs and a factor of lack of competitiveness among SME suppliers. In addition, technology can also increase integrity within halal suppliers. Adopting blockchain technology in the integration of halal food supply chain to ensure the effective and efficient production of halal products. This involves the development of a halal assurance system based on the concept of three zeros, namely zero limit (no illegal substances are used in production), Zero Defect (no illegal products are produced) and zero risk (no adverse risks should be taken by the manufacturer or company). The structure for the halal assurance system plays an important role in integrating processes that help the establishment of value within the firm and across the supply chain. From this discussion shows five main criteria that will influence the improvement of integrity, this new direction to improve the halal industry. Five criteria can help to improve the quality

of halal products detect from halal contaminated products. The results of this scoping review create a new path from previous studies that focus more on factors that can have an impact on improving the integrity of halal suppliers. Previous studies have focused only on barriers that could have an impact on adopting halal practices specific to halal suppliers. The study of (Azmi et al., 2021) focuses only on halal suppliers facing obstacles in adopting halal practices such as halal certification, supply chain management, consumer perception and behavior, and the role of government regulation. This scoping review identifies five main themes and eleven sub-themes related to halal supplier in food supply chain and more comprehensive research is required to further investigate the halal supplier especially in food industry.

## ACKNOWLEDGEMENT

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

## REFERENCES

Abdullah, R., Sabar, R., & Mustafar, M. (2018). Green Halal supply chain in Malaysian halal food companies: A conceptual framework. *International Journal of Supply Chain Management*, 7, 502-510. <https://doi.org/10.59160/ijscm.v7i5.2611>

Abebe, G. K. (2022). Effects of Institutional Pressures on the Governance of Food Safety in Emerging Food Supply Chains: A Case of Lebanese Food Processors. In G. Desa & X. Jia (Eds.), *Social Innovation and Sustainability Transition*. Springer Nature Switzerland. [https://doi.org/10.1007/978-3-031-18560-1\\_14](https://doi.org/10.1007/978-3-031-18560-1_14)

Ali, M. H., Iranmanesh, M., Tan, K. H., Zailani, S., & Omar, N. A. (2022). Impact of supply chain integration on halal food supply chain integrity and food quality performance. *Journal of Islamic Marketing*, 13(7), 1515-1534. <https://doi.org/10.1108/JIMA-08-2020-0250>

Ali, M. H., Tan, K. H., & Ismail, M. D. (2017). A supply chain integrity framework for halal food. *British Food Journal*, 119(1), 20-38. <https://doi.org/10.1108/BFJ-07-2016-0345>

Amarauche, C., & Adibe, P. M. (2021). Quality assessment of cold chain storage facilities for regulatory and quality management compliance in a developing country context. *International Journal of Health Planning and Management*, 37, 1-14. <https://doi.org/10.1002/hpm.3385>

Azmi, Fadhlur & Musa, Haslinda & Chew, Boon Cheong & Jagiripu, Indira. (2021). Supply risk management: A case study of halal food industry in Malaysia. *Uncertain Supply Chain Management* <https://doi.org/10.5267/j.uscm.2021.1.001>.

Davis, Kathy & Drey, Nicholas & Gould, Dinah. (2009). What are scoping studies? A review of the nursing literature. *International journal of nursing studies*. 46. 1386-400. <https://doi.org/10.1016/j.ijnurstu.2009.02.010>

Fathoni, M. A. (2020). Potret industri halal Indonesia: Peluang dan tantangan. *Jurnal Ilmiah Ekonomi Islam*, 6(3), 428-435. <http://dx.doi.org/10.29040/jiei.v6i3.1146>

Fauzi, M., Aniqoh, N. A. F. A., Harizahayu, H., Fw Pospos, A. F., & Saediman, H. (2021). Halal Supply Chain Management: Analysis of Decision-Making Factors for Aqiqah Business Suppliers in Indonesia. *The Journal of Asian Finance, Economics and Business*, 8(6), 1161–1169. <https://doi.org/10.13106/JAFEB.2021.VOL8.NO6.1161>

Fujiwara, T. (2017). Supplier Management in Halal Food Supply Chain: A Preliminary Case Study. *Pertanika Journal of Social Sciences & Humanities*, 25.

Fujiwara, T., & Mohd Ismail, R. (2018). Supplier management system in Halal food supply chain: A case study approach. *International Journal of Supply Chain Management*, 7, 216-220. <https://doi.org/10.59160/ijscm.v7i3.2212>

Hafiz Wasim Akram(2022). Global Halal business: a sectoral analysis. *International Journal of Business and Globalisation*, 30(1), 111-130. <https://doi.org/10.1504/ijbg.2022.122291>

Hamel, C., Michaud, A., Thuku, M., Skidmore, B., Stevens, A., Nussbaumer-Streit, B., & Garrity, C. (2021). Defining Rapid Reviews: a systematic scoping review and thematic analysis of definitions and defining characteristics of rapid reviews. *Journal of Clinical Epidemiology*, 129, 74-85. <https://doi.org/https://doi.org/10.1016/j.jclinepi.2020.09.041>

Haron, H., & Amran, M. (2019, March). Supply Chain Strategy for Ayamas Food Cooperation Sdn. Bhd.. In 9th Annual International Conference on Industrial Engineering and Operations Management, <https://doi.org/10.46254/AN09.20190675>.

Hodgkinson, G., & Ford, J. (2014). Narrative, meta-analytic, and systematic reviews: What are the differences and why do they matter? *Journal of Organizational Behavior*, 35, S1-S5. <https://doi.org/10.1002/job.1918>

Kamaruzaman, I. (2020). Prioritization of Selection Criteria for Halal Chicken Suppliers using Fuzzy AHP: A Case Study. *ASM Science Journal*. [https://doi.org/10.32802/asmcej.2020.sm26\(4.11\)](https://doi.org/10.32802/asmcej.2020.sm26(4.11))

Khairuddin, M., Abdul Rahman, N. A., Mohammad, N., & Majid, Z. (2018). Regulator Perspective on Halal Air Cargo Warehouse Compliance. *International Journal of Supply Chain Management*, 7(3), 1156-1159. <https://doi.org/10.59160/ijscm.v7i3.2263>

Khan, M.I., Khan, S. and Haleem, A. (2019), "Analysing barriers towards management of Halal supply chain: a BWM approach", *Journal of Islamic Marketing*, Vol. ahead-of-print No. ahead-of-print, <https://doi.org/10.1108/JIMA-09-2018-0178>

Khan, S., Khan, M. I., Haleem, A., & Jami, A. R. (2022). Prioritising the risks in Halal food supply chain: an MCDM approach. *Journal of Islamic Marketing*, 13(1), 45-65. <https://doi.org/10.1108/JIMA-10-2018-0206>

Kitayama, D., Takanokura, M., Ogiya, M., Eksan, S. H. R., & Ali, M. H. (2018). A study on the Halal food supply chain in Japan from an inbound perspective. *Indian Journal of Science and Technology* 10(48):1-9. <https://doi.org/10.17485/ijst/2017/v10i48/120774>

Kristanto, D., & Kurniawati, D. A. (2023). Development of halal supply chain risk management framework for frozen food industries. *Journal of Islamic Marketing*, 14(12), 3033-3052. <https://doi.org/10.1108/JIMA-04-2022-0112>

Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: advancing the methodology. *Implementation Science*, 5(1), 69. <https://doi.org/10.1186/1748-5908-5-69>

Manzouri, M., Ab-Rahman, M. N., Zain, C. R. C. M., & Jamsari, E. A. (2014). Increasing Production and Eliminating Waste through Lean Tools and Techniques for Halal Food Companies. *Sustainability*, 6(12), 9179-9204. <https://www.mdpi.com/2071-1050/6/12/9179>

Masudin, I., Fernanda, F., & Widayat, W. (2018). Halal Logistics Performance and Customer Loyalty: From the Literature Review to a Conceptual Framework. *International Journal of Technology*, 9, 1072. <https://doi.org/10.14716/ijtech.v9i5.1919>

Moher, D., Shamseer, L., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Shekelle, P., Stewart, L. A., & Group, P.-P. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews*, 4(1), 1. <https://doi.org/10.1186/2046-4053-4-1>

Naeem, S., Ayyub, R. M., Ishaq, I., Sadiq, S., & Mahmood, T. (2020). Systematic literature review of halal food consumption-qualitative research era 1990-2017. *Journal of Islamic Marketing*, 11(3), 687-707. <https://doi.org/10.1108/JIMA-09-2018-0163>

Payaro, A., & Papa, A. (2023). Supplier integration. A proposed practical approach. *Conference: 5th World Conference on Management Business Economics* <https://doi.org/10.13140/RG.2.2.26168.32008>

Petrosino, A., Turpin-Petrosino, C., & Buehler, J. (2002). "Scared Straight" and other juvenile awareness programs for preventing juvenile delinquency. *The Cochrane database of systematic reviews*, (2), CD002796. <https://doi.org/10.1002/14651858.CD002796>

Randeree, K. (2019). Challenges in halal food ecosystems: the case of the United Arab Emirates. *British Food Journal*, 121(5), 1154-1167. <https://doi.org/10.1108/BFJ-08-2018-0515>

SHAHIDAN, N., & Amid, A. . (2023). Challenges Faced by Halal Meat Industry: A Review. *Halalsphere*, 3(1), 55–63. <https://doi.org/10.31436/hs.v3i1.61>

Susanty, A., Puspitasari, N. B., Rosyada, Z. F., Pratama, M. A., & Kurniawan, E. (2023). Design of blockchain-based halal traceability system applications for halal chicken meat-based food supply chain. *International Journal of Information Technology*. <https://doi.org/10.1007/s41870-023-01650-8>

Tieman, M., van der Vorst, J. G. A. J., & Che Ghazali, M. (2012). Principles in halal supply chain management. *Journal of Islamic Marketing*, 3(3), 217-243. <https://doi.org/10.1108/17590831211259727>

Usman, I. (2020). Halal supply chain management practice model: A case study in evidence of halal supply chain in Indonesia. *International Journal of Innovation, Creativity and Change*, 11(11), 440-451. <https://doi.org/10.1080/23311916.2023.2219106>