

Determinants and Complexities of Halal Logistics in Malaysia: A Systematic Literature Review

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Abstract

This study employs a systematic literature review to examine the challenges of halal logistics in Malaysia, addressing a significant gap in the literature concerning the operational difficulties in maintaining halal integrity throughout supply chain processes. As the world's Muslim population grows, understanding the complexities of halal logistics becomes crucial for industry stakeholders. Through Google Scholar and Scopus databases, this research identifies and analyzes 14 pertinent articles, focusing on the challenges within halal logistics. The thematic analysis reveals six primary challenges faced in Malaysia: high operational costs, lack of knowledge, limited demand for halal logistics services, operational complexities, inadequate management, and difficulties in the implementation of halal standards. These findings not only enhance the theoretical understanding of halal logistics but also offer practical insights for improving its implementation. By pinpointing these challenges, the study suggests a need for strategic efforts to foster market growth and service competitiveness in the halal logistics sector. Future research should broaden the review scope and explore solutions to these challenges, promoting best practices in halal logistics.

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1. Introduction

The concept of halal is increasingly a topic of discussion due to the growing Muslim population and number of halal industry players. The main foundation of halal in the Quran is verse 2:168: “O mankind, eat from whatever is on earth [that is] lawful and good.” The Quran highlights the concept of *halalan toyyiban*, which is the combination of halal and *toyyiban*, meaning ‘to allow’ and ‘permissible because it is pure and good’. The term refers to the quality, guarantee, and integrity of all activities regarding halal (Mustaffa, 2019). A simple example of halal is the consumption of meat. For meat to be considered halal, the animal must be slaughtered by a Muslim, who must pronounce the name of Allah before the slaughter. This process ensures that the meat is lawful for Muslims to eat according to Islamic law. Therefore, *halalan toyyiban* is integrated holistically and comprehensively, meaning it is important to assure that every process fulfills the conditions, situations, and applications of halal. In fact, every business in the halal industry is involved with the logistics sector to ensure shariah compliance and that *halalan toyyiban* is applied across the supply chain (Bakar, 2021). Hence, there are an increasing number of efforts beginning to emphasize the importance of halal logistics to ensure that entire supply chain processes does not involve contamination that results in a change of status from halal to non-halal.

Halal logistics are a crucial aspect of the halal industry, as it governs the performance of halal transportation activities and ensures compliance with shariah principles throughout the entire supply chain (Sham, 2017). In line with the concept of *halalan toyyiban*, logistics plays a pivotal role in guaranteeing that all halal processes are conducted in a manner that maintains the halal status of products from the farm to the consumer’s hands. As the last stage of the halal supply chain, logistics are therefore critical to the overall success of halal compliance. It is imperative that the logistics industry identifies each step in the process to ensure that products maintain their halal status and do not become haram. Any lapses in logistics could tarnish the reputation of the halal industry, erode trust in the supply chain, and ultimately result in a loss of consumer confidence (Faradina, 2018).

The expansion into halal logistics is driven by market demands and the competitive advantages it offers. However, early adopters face numerous challenges, such as ambiguous halal guidelines, lack of international halal certification, insufficient collaboration among governing agencies, financial challenges, and a general misunderstanding of halal practices (Zailani *et al.*, 2017). In addition, challenges such as integration issues among logistics service providers

and the need for more robust support from governments are also common (Talib *et al.*, 2013; Talib *et al.*, 2014). The establishment of halal logistics principles is essential for guiding global halal logistics systems, minimizing contamination risks, and meeting both Muslim and non-Muslim countries' needs (Tieman, 2013).

Significant issues also arise in implementing halal logistics in non-Muslim-dominant environments, necessitating reengineering business processes to comply with halal principles (Ziegler *et al.*, 2022). These challenges underscore the importance of halal logistics in the global supply chain and highlight the need for further research and policy development to address these challenges effectively.

This study examines the challenges related to halal logistics in Malaysia. Despite numerous studies having been conducted on this subject, a systematic review of the available literature has not been performed. Therefore, the purpose of this research is to fill this gap in the literature and systematically review previous studies on halal logistics in Malaysia. Through this systematic literature review, the findings of the present study will provide a more structured approach to examining the available literature, which can potentially contribute to the body of knowledge in this area.

Following this introduction, the literature review delves into the intricacies of Malaysia's halal industry and the conceptual framework of halal logistics. This is followed by a detailed methodology section that outlines the systematic literature review process used to gather and analyze relevant studies. The results and analysis section presents the findings from the reviewed articles, categorizing the challenges of halal logistics into six thematic areas. The paper concludes with a summary of the key challenges identified, offering recommendations for stakeholders to enhance halal logistics operations and suggesting directions for future research.

2. Literature Review

2.1. An Overview of the Halal Industry in Malaysia

The global Muslim population is expected to reach 2.3 billion by the year 2030. According to the Global Islamic Economy Report 2021/2022, this demographic spent around US\$2 trillion in 2021, marking an 8.9% increase from 2020 (Global Islamic Economy Report, 2022). This surge in spending power highlights the expanding influence and requirements of Muslims worldwide, propelling the halal market into a phase of progressive growth. Recognizing the substantial opportunities within this sector, businesses from across the globe, including non-Muslim countries, are keen to engage with the halal trade market. The halal

industry, catering to a vast and economically supportive demographic, offers promising prospects for growth and diversification. It has evolved significantly, extending its reach beyond food to encompass various other sectors like cosmetics, pharmaceuticals, slaughtering, and logistics, thereby attracting a wide range of international business interests (Azam & Abdullah, 2020).

A report from Malaysia’s Halal Development Corporation on the Halal Industry Master Plan 2030 reveals that the country’s Halal market is expected to increase in size from US\$68.4 billion in 2018 to US\$113.2 billion by 2030. Malaysia holds a significant position in halal production and maintains the number one position in the overall Global Islamic Economy Indicator (GIEI) rankings, leading in four categories, including Halal food, Islamic Finance, Travel, and Media and Recreation (Global Islamic Economy Report, 2022). In Malaysia, all products and services claiming to be halal must be accredited with halal certification, which represents a product’s credibility and reliability regarding its ingredients, processes, and Halal status. The government closely regulates the development of halal activities in the country, including certification, application, audit, and management, with the Malaysian Department of Islamic Development (JAKIM) spearheading regulatory and industry development. JAKIM has the power to certify any food, goods, or services as halal. Many manufacturers or brand owners have expressed interest in obtaining halal certification managed and controlled by JAKIM, recognizing its intrinsic value n (Table 1).

Table 1: Total Certified Products/Services

Type of Item	Total Certified Products/Services
Food and Beverage Products	183,130
Food Premises	1,018
Original Equipment Manufacturing	1,053
Cosmetics and Personal Care Products	6,984
Pharmaceuticals	3,745
Consumer Goods	5,335
Slaughterhouses	146
Logistics Services	85
Medical Devices	1
Total Certified Products/Services	201,496

Source: Halal Malaysia Official Portal JAKIM, Retrieved 11 August 2022.

Table 1 depicts the number of halal certified products and services across different schemes in Malaysia. As of the latest update, there are a total of 201,496 halal certified products or services available in Malaysia, with the vast majority being food and beverage products (183,130 items). Meanwhile, just one medical device has been certified as halal (Star Medik Sdn Bhd, located in Negeri Sembilan), as JAKIM only opened applications for halal medical devices in April 2022 (JAKIM, 2022).

On the other hand, the type of industry with the second lowest number of halal certified products or services is logistics, with only 85 certified companies. The huge number of halal certified products and services underscores the need to ensure that they are distributed and delivered safely to consumers' hands, without contamination, guaranteeing that consumers only receive halal *toyiban* products. Therefore, it is crucial to address the severe imbalance between the logistics sector services and the number of offered halal products, as the logistics sector currently lacks the capacity to handle all halal-certified products. In addition to ensuring that halal products are consumed, it is equally essential to maintain their halal integrity during handling and transportation. Logistics services play a pivotal role in complementing every scheme that contributes to the success of supply chain management. In their absence, certified products may become susceptible to contamination, hazards, and risks that are not halal-certified, casting doubt on their authenticity.

2.2. An Overview of Halal Logistics

Halal logistics is a new concept within the halal industry supply chain management, encompassing the procurement, movement, storage and management of materials, parts, livestock, and semi-finished products in accordance with the general principles of shariah law (Aziz, 2017). The physical activities involved in halal logistics, such as storage and transportation, generate a wealth of data for communication and management of successive links along the supply chain. Halal logistics must adhere to the fundamental principles of shariah in all activities to ensure that halal and non-halal products are segregated, and that there is no contamination in order to preserve the integrity of the entire halal process.

The risk of halal products becoming mixed with non-halal products during transportation is a significant concern that emerges when segregation measures are not adequate. While a product may be made from halal sources and ingredients, cross-contamination can occur during transportation, making the product become non-halal. To prevent such occurrences, halal logistic services must be employed

with careful attention to the halal delivery process, applying every channel of halal integrity to avoid cross-contamination. Manufacturers have addressed this issue by employing their own dedicated transportation for logistic activities, thereby reducing the risk of contamination and facilitating delivery to customers and clients (Mahidin, 2016).

Malaysia's halal ecosystem is comprehensive and serves as a global reference for the implementation of best practices in the development of halal standards. Malaysia has issued standard references that encompass various halal standards for different sectors, including food-MS1500:2019, pharmaceutical-MS2424:2019, cosmetic-MS2634:2019, consumer goods-MS2200, and transportation-MS2400:2019 (Part 1-Transportation, Part 2-Warehousing, Part 3-Retail). MS2400:2019 is a halal supply chain management system that links producers of products to provide assurance that the pipeline delivery of products from one custodian to another place meets halal requirements, thereby preserving the halal integrity. The Malaysian Standard MS2200 Part 1-Transportation guideline specifies the management systems and mechanism requirements for products handled through various modes of transportation, such as land, air, and water transport.

The Department of Standardization Malaysia (DSM) has established specific guidelines for the handling and operation of halal logistics in order to ensure compliance with shariah requirements. These standards are regulatory requirements that must be adhered to in order to obtain a valid halal certificate for the logistics process.

3. Methodology

This study conducted a systematic literature review (SLR) and a thematic analysis to investigate the challenges of halal logistics in Malaysia. The SLR involved a structured protocol for reviewing documents based on a formulated research question (Petticrew & Roberts, 2006). While the SLR approach is common in social sciences, it has not been extensively applied in halal research (Fauzi, 2022). This study is important because it does not rely on handpicked articles selected manually. Instead, the SLR approach provides a systematic plan to identify specific research areas based on keywords and thoroughly examine previous studies. To answer the research question "What are the challenges of halal logistic in Malaysia?", the SLR approach was used to select a systematic number of relevant articles related to halal logistic. The SLR approach in this study involved three stages, which are outlined below.

3.1. Search Strategy

In this study, a search strategy was implemented to gather data from two commonly used databases: Google Scholar and Scopus. The search strategy used keywords to search for synonyms or related terms based on previous research. For the Google Scholar database, the search was conducted using the keywords ‘halal logistic’ and “challenge” or “challenges” and “Malaysia”. Meanwhile, for Scopus, the key search strategy used was ‘TITLE-ABS-KEY (halal AND logistic AND Malaysia)’.

3.2. Screening

After searching both Scopus and Google Scholar databases, duplicate articles were excluded and a total of 104 articles were identified. After excluding the duplicates, a screening process was implemented to ensure the remaining articles met the inclusion and exclusion criteria. Six criteria were established to support a structured decision-making procedure, including the literature type, language, timeline, country, and subject area. In terms of literature type, only journal articles and conference proceedings were included due to their rigorous peer review process, while books, book chapters, theses, and news articles were excluded. The second criterion specified that only articles in English were accepted, with other languages excluded. The third criterion selected only qualitative research. The fourth criterion selected period for inclusion, covering 2017 to 2022. The fifth criterion ensured that only research in Malaysia was included, given the study’s focus on Malaysia. Sixth, the subject area was limited to halal logistics, and excluded other sectors such as halal food, cosmetics, and pharmaceuticals (Table 2).

Table 2: Criterion inclusion and exclusion

Criteria	Inclusion	Exclusion
Literature type	Journal articles, conference proceedings	Books, book chapters, theses, and news articles
Language	English	Non-English
Methodology	Qualitative	Quantitative
Timeline	Between 2017 to 2022	Before 2017
Countries	Malaysia	Other than Malaysia
Subject area	Halal logistics or halal supply chain	Other than halal logistics and halal supply chain

Source: Author.

3.3. Eligibility

During the initial phase, 104 studies were identified as potentially relevant to halal law and regulations within the context of Malaysia. The screening process involved a thorough examination of the titles, abstracts, and main contents of

these studies. The purpose of this detailed review was to filter out studies that did not meet the inclusion criteria; 39 studies were excluded at this point. The reasons for excluding these studies include irrelevance, lack of focus on halal law and regulations, studies not pertaining to the Malaysian context, or studies not meeting the methodological standards required for inclusion. Overall, the process resulted in 14 studies being deemed suitable for inclusion in the analysis. These 14 studies passed the screening process by meeting the inclusion criteria, focusing on the relevant research area, and providing insights specific to the context of Malaysia. This meticulous process ensured that the systematic review is comprehensive, focused, and relevant to the research objectives (Figure 1).

Analyzing only these 14 studies is crucial for several reasons. First, it ensures that the review is based on research that is directly relevant to the research question, enhancing the validity and reliability of the findings. Second, by focusing on studies about halal law and regulations and the Malaysian context, the review can provide targeted insights and recommendations. Third, this approach minimizes the risk of including studies that could dilute the relevance and impact of the analysis.

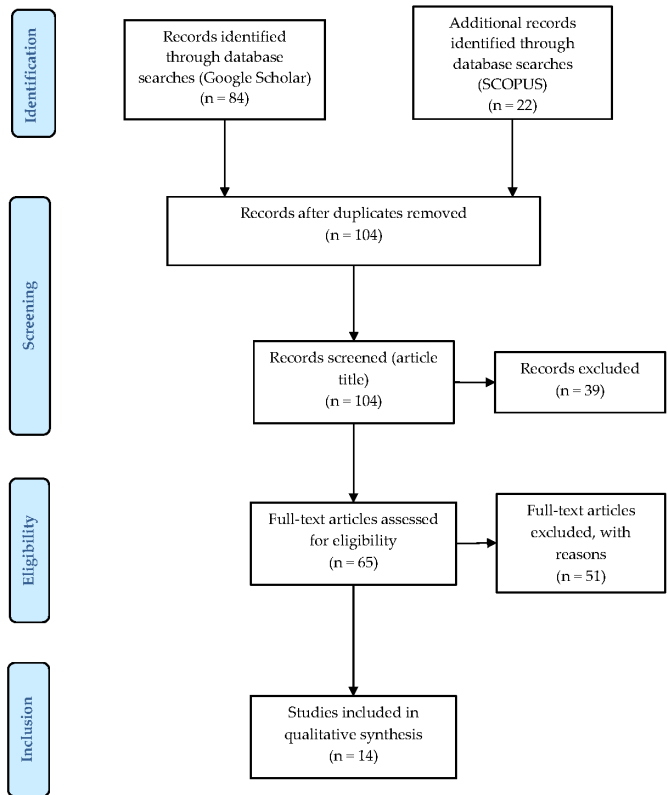


Figure 1: SLR Process.

4. Results and Analysis

The present study analyzed data extracted from 14 articles on the challenges of halal logistics in Malaysia. Using thematic analysis, the data was categorized into various themes from the selected articles.

4.1. General Findings on selected studies

This study analyzes the collective findings of the reviewed articles. The researcher presents essential details such as the author’s name, year of publication, sources, and publisher. The articles under consideration were obtained from the Scopus and Google Scholar databases and selected journals and conference proceedings. Analysis of the articles published in various years indicates that most of the selected articles were published in 2020, 2018, and 2017. There were no selected articles published in 2022 and 2019 (Figure 2).

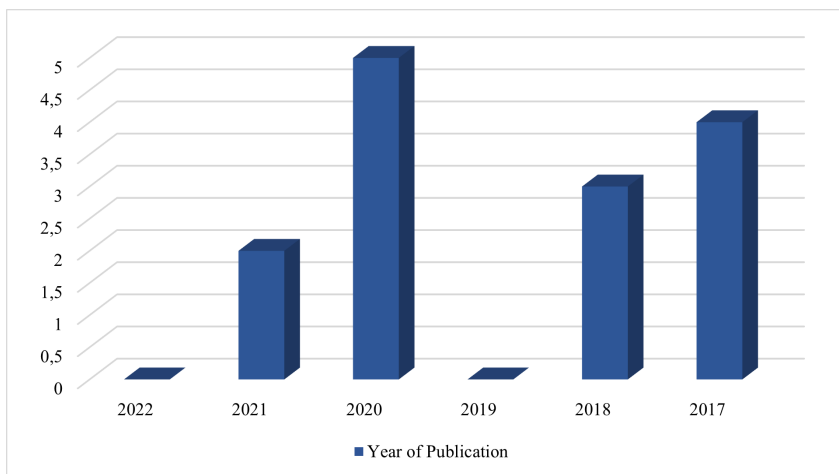


Figure 2: Year of Publication of Articles Analyzed.

The selected articles were published across various platforms. Specifically, the articles were published in Journal of Islamic Marketing (3), International Journal of Supply Chain Management (2), Journal of Internet of Things (1), Journal of Critical Review (1), Technological Forecasting & Social Change (1), Journal of Halal Studies (1), Journal of Modelling in Management (1), and Journal of Social Sciences & Humanities - Pertanika (1). With respect to conference proceedings, the selected articles (3) were presented at the following events: IOP Conf. Series: Materials Science and Engineering (1), MATEC Web of Conferences (1), and 11th IEEE Control and System Graduate Research Colloquium (1). This highlights the engagement with various academic and professional audiences and emphasizes the importance of scholarly exchange and collaboration in driving innovation.

Table 3: Articles Selected for SLR

No.	Author	Journal/ Proceedings	Publisher	Year
1)	Rejeb <i>et al.</i>	Journal of Internet of Things	Elsevier	2021
2)	Ali <i>et al.</i>	Technological Forecasting & Social Change	Elsevier	2021
3)	Jaafar <i>et al.</i>	Journal of Critical Review	Innovare Academics Sciences Pvt. Ltd	2020
4)	Mohamad Nasrul & Mohd Lutfi	Journal of Halal Studies	Management and Science University (MSU)	2020
5)	Mohamed Syazwan <i>et al.</i>	Journal of Islamic Marketing	Emerald Group Publishing	2020
6)	Sarifah Radiah <i>et al.</i>	11th IEEE Control and System Graduate Research Colloquium (ICSGRC 2020)	Institute of Electrical and Electronics Engineers (IEEE)	2020
7)	Shahbaz & Mohd Imran	Journal of Modelling in Management	Emerald Group Publishing	2020
8)	Haleem <i>et al.</i>	IOP Conf. Series: Materials Science and Engineering (ICCRME)	IOP Publishing Ltd	2018
9)	Qurtubi & Elisa	MATEC Web of Conferences	EDP Sciences	2018
10)	Faradina <i>et al.</i>	International Journal of Supply Chain Management (IJSCM)	Emerald Group Publishing	2018
11)	Sirajuddin <i>et al.</i>	Journal of Social Sciences & Humanities - Pertanika	Universiti Putra Malaysia (UPM)	2017
12)	Mahidin <i>et al.</i>	International Journal of Supply Chain Management (IJSCM)	Emerald Group Publishing	2017
13)	Nor Aida <i>et al.</i>	Journal of Islamic Marketing	Emerald Group Publishing	2017
14)	Zailani <i>et al.</i>	Journal of Islamic Marketing	Emerald Group Publishing	2017

4.2. A review of Literature on Challenges of Halal Logistic and Classification

Halal logistics is a multifaceted domain that involves diverse operations and processes with the participation of various logistic parties, including 1PL First Party Logistics, 2PL Second Party Logistics, 3PL Third Party Logistics, 4PL Fourth Party Logistics, and 5PL Fifth Party Logistics. These parties collaborate with other entities, such as retailers or manufacturers, transporters, contract logistics, service providers, and optimization. The complexities of halal logistics arise due to the vast array of activities involved, and the challenges encountered can be attributed to several factors.

Several challenges encountered by halal stakeholders are identified and can be grouped thematically. Specifically, the challenges of halal logistics are identified as follows. First, the primary challenge typically discussed is the high operational costs. Second, there is a lack of knowledge among logistics providers regarding halal practices. Third, there is poor demand from service providers. Fourth, there is complexity in the operation of halal logistics. Fifth, there are challenges in

providing dedicated facilities for halal logistics. Lastly, there is a lack of availability of halal standards to facilitate the overall implementation of halal logistics.

4.2.1. High Operational Costs

Logistics providers who wish to adopt halal practices are faced with significant costs in implementing halal operations. Sirajuddin (2017) found that logistic service providers incur higher costs to meet the required standards and regulations. This, in turn, prevents companies from engaging in halal supply chain networks, as the operations depend on an integrated network of suppliers, manufacturers, distributors, and retailers, which can create potential breaks in the supply chain. Additionally, operating costs increase due to the need for specific space, storage at certain temperatures, transportation fleets, handling equipment, audit checks, dedicated facilities, and labeling and coding systems to comply with halal requirements (Jaafar, 2020; Shariff, 2020; Talib, 2020; Mahidin, 2017; Rahman, 2017; Zailani *et al.*, 2017). The provision of dedicated halal facilities is known to expand the overall cost of operations in halal logistics, and such challenges are a concern among manufacturers, who could impose additional charges on every transportation activity (Mahidin, 2017). The success of halal control activities depends largely on the financial aspect, as the implementation of halal undoubtedly incurs additional costs (Qurtubi, 2018).

Shariff (2021) discovered that implementing halal *toyyiban* practices with additional cost did not decrease the output by more than 10%. However, adopting technology in halal logistics requires additional costs to afford the advanced capability of the different technology (Rejeb *et al.*, 2021), such as blockchain, which incurs higher logistics costs compared to the product's value (Ali 2021). While enhancing traceability in halal logistics using technology may increase costs without necessarily increasing business revenue, logistics providers are unable to transfer the costs to end consumers, unlike other premium food products. Sirajuddin (2017) highlights that the costs incurred in halal logistics are not just limited to facilities but also the use of air freight and the possibility of being used for non-halal goods, all contributing to the complexity of the halal supply chain. The trade-off between product cost and quality may increase the risk in halal supply chain by incentivizing logistics suppliers to break the halal chain for increased profits (Khan, 2020).

The field of international logistics faces a multitude of challenges, including multiple consolidation points, break points, and cost options. These challenges are further compounded when halal practices are implemented in the logistics process, as they require adherence to halal requirements for every activity in transportation

(Mahidin, 2017). According to Zailani *et al.* (2017), this creates pressure to increase productivity and reduce costs, which can be difficult to achieve in a competitive market where implementing halal logistics is expensive. The high cost of building and operating halal infrastructure is significant and requires government support. Publicly run infrastructure can encourage more logistic providers to implement halal logistics (Talib, 2020). Recognizing that halal logistics will incur additional costs and charges, government support for logistics schemes is crucial for logistic providers to reduce their operating costs effectively.

4.2.2. Lack of Knowledge

In order to implement halal principles in logistics, there is a need for knowledge to provide halal logistic services that meet local and international demand. One of the significant challenges is the insufficient knowledge among manufacturers involved in halal production in logistic activities. This can lead to cross-contamination due to inappropriate behavior during handling and operating their businesses (Mahidin, 2017). Implementing halal practices not only involves ensuring halal handling of goods but also requires manufacturers to hire knowledgeable workers who are familiar with the requisite practices. Furthermore, the introduction of new technologies to facilitate the halal process creates additional knowledge barriers (Rejeb *et al.*, 2021).

Rahman (2020) identified that the lack of skilled and experienced workers in handling halal goods and services is a significant challenge. Their limited awareness and knowledge of halal logistics practices have hindered the adoption of halal traceability systems in logistics, resulting in no significant value being attached to logistics processes (Ali, 2021). This view is shared by Faradina *et al.* (2018), who suggested that the lack of experienced and knowledgeable manpower in logistics procedures and the investigation process towards logistics is a significant concern. The identification of critical points in halal logistic activities requires specialized knowledge and techniques in the field (Qurtubi, 2018).

Haleem *et al.* (2018) emphasized the crucial role of trained logisticians in change management towards halal practices, as their unavailability can hinder the intention to change behaviour and habits. Nadzmi & Iskandar (2021) highlighted the complexity of understanding the halal concept in halal supply chain services, which involves unbroken chains and efficient deliveries of goods. The lack of knowledge and understanding of both halal requirements and logistics among logistics providers creates difficulties in converting to halal operations (Zailani *et al.*, 2017). To develop a reliable practical approach for halal supply chain management, it is crucial to understand the real practices of and challenges faced by logistics

stakeholders (Sirajuddin, 2018). Inadequate knowledge and improper habits can lead to cross contamination and inefficiencies, thus necessitating the transfer of knowledge through proper training and education systems (Qurtubi, 2020). Talib (2020) emphasized the importance of a well-structured education system to train industry players professionally and produce skilled and experienced halal logistics professionals.

4.2.3. Limited Demand for Halal Logistics Services

The halal industry witnessed significant growth in recent years, as demand from both Muslim and non-Muslim consumers has increased. Although the demand for halal products is significant, the demand for halal logistics services remains relatively low (Mahidin, 2017). In Malaysia, the number of halal logistics service providers is insufficient to meet the needs of the supply chain (Sirajuddin, 2017). According to a study by Zailani *et al.* (2017), the demand for halal logistics is relatively small, with service providers claiming that they are unable to fill up to 30% of the total halal warehouse area of their companies and cannot operate at full capacity due to the lack of demand for halal logistics from certified halal food producers. As a result of this low demand for halal logistics, it is not cost-effective for logistics service providers to invest in dedicated halal facilities, which further adds to the financial challenges of adopting halal practices (Zailani *et al.*, 2017).

The low demand for halal logistics, which is not mandatory for the issuance of halal certificates in Malaysia, and its higher cost compared to conventional logistic, are among the main factors contributing to its relatively low adoption (Haleem *et al.*, 2018; Zailani *et al.*, 2017). Respondents in a study conducted by Zailani *et al.* (2017) believed that there was no need to segregate halal products, as the amount of halal products was insufficient to fill up the facilities. According to Rahman (2017), the lack of promotion and awareness among manufacturers has resulted in this small volume of halal products, making it difficult to store them in a specific area, especially through air cargo tonnage. Ali (2021) found that achieving agreement amongst logistics providers is impossible because data integration beyond halal certification is not feasible due to the small size of orders. Planning risks in halal logistic operations, such as poor demand forecasting, can negatively impact the production system, void a product's halal status, and damage the brand's reputation (Khan, 2020). Such risks may influence the decision-making process in logistic operations regarding the adoption of halal practices. Thus, the lack of demand from manufacturers can be considered as another key obstacle to the widespread adoption and implementation of halal logistics in Malaysia (Mahidin, 2017).

4.2.4. Operational Complexities

Logistics is widely recognized as incredibly complex, primarily due to intricate interdependencies and interconnectedness between different segments, requiring collective adaptation across many fragmented channels and elements. The intricate processes in the supply chain system pose a significant challenge for operators to maintain uncompromising standards between halal and non-halal goods. Ensuring halal integrity has become a pressing concern for many industries, and policymakers must have a thorough understanding of the complex nature and multidimensional characteristics of halal logistics chains to effectively implement the halal ecosystem and prevent cross-contamination (Faradina *et al.*, 2018; Zailani., 2017; Rejeb *et al.*, 2021).

Sirajuddin (2017) has raised doubts on the practicability of total segregation in the context of logistics services, which adds further complexity to the outsourcing of logistics operations. As noted by Mahidin (2017), contemporary supply chains are diverse and complex, involving Muslim and non-Muslim suppliers and consumers, and are fraught with risks pertaining to cross-contamination, production, and management. Additionally, obtaining halal certification can be a complex and stringent process, which may potentially impact operational efficiency and halal governance if the certification is delayed for renewal. Given the intricate nature of logistics operations, stringent requirements must be met by logistic operators to effectively manage and handle products. There is a tendency for halal control activities to become fragmented during activities such as receiving, deliveries, order picking, cross-docking, and storage areas (Rahman 2017).

Research indicates that respondents believe that the standards for halal logistics are both high and challenging to implement due to the complex nature of fully-halal operations. Logistics providers are required to use specialized equipment and tools solely for handling halal products, which must not come into contact with non-halal products. However, businesses – particularly small and medium enterprises – face difficulties adopting halal logistics via blockchain technology due to the complex utilization of digital devices within the network chain, as noted by Ali (2021). Jaafar (2020) highlighted that a significant challenge in implementing halal logistics lies in ensuring halal integrity throughout the entire supply chain. Compared to conventional logistics, halal logistics is even more complex, as illustrated by news reports of cross-contamination between halal and non-halal products, even when they were boxed separately but were subsequently found to be in the same container (Faradina *et al.* 2018). Complexity increases when involving multiple sovereign nations in devising policy measures that cater

to both Muslim and non-Muslim markets, as operationalization challenges arise in minimizing the risk of cross-contamination (Talib 2020).

4.2.5. Improper Management

Good management is critical in the successful implementation of halal logistics. It is imperative that all parties involved throughout the process adhere to halal practices, which requires a high level of dedication, not just from top levels of management but also from employees. The lack of proper management in the halal logistic process raises concerns about cross-contamination during the distribution of halal products, which may result in consumer hesitancy in purchasing these products (Jaafar 2020). Moreover, there is a lack of organizational readiness to comply with halal logistic requirements, with top management involved in decision-making processes still adhering to conventional logistic operations. Therefore, the support of senior managers plays a critical role in successfully implementing halal logistics services, as noted by Zailani (2017).

Ali (2021) noted that employees in the Malaysian logistics industry are often resistant to change, particularly when it comes to adopting halal logistics, due to frequent changes in management. Similarly, Haleem *et al.* (2018) reported that logistics service providers are reluctant to change their halal practices in operations due to ineffective coordination and collaboration. The authors opined that the lack of support among top management hinders the mainstreaming of halal principles and impacts organizational willingness to adopt halal logistics. To ensure the performance elements in halal logistics are linked with halal principles, management commitment is essential (Shariff 2020). Therefore, it is important to ensure both employees and senior managers understand the significance of and rationale behind implementing halal logistics and the value of adopting halal practices (Talib 2020). Management must motivate, support, and raise awareness among employees to work in a halal logistics environment (Nadzmi & Iskandar, 2020).

4.2.6. Implementation of Halal Standards

The implementation of standards is essential to provide guidance and parameters for the halal industry to ensure compliance with halal principles throughout the entire value chain, from raw material selection to distribution to end consumers. However, as noted by Haleem *et al.* (2018), the lack of standardization in halal logistics in Malaysia has resulted in the absence of clear guidelines for adopting halal practices. This situation is compounded by the absence of a universally accepted halal standard globally, leading to confusion

and misunderstanding of halal processes (Jaafar, 2020). In addition, Mahidin (2018) observed that there are currently no globally standardized guidelines that clearly define cross-contamination between halal and non-halal elements for international implementation. Consequently, many instances in Malaysia involving cross-contamination of halal and non-halal products have necessitated the need for halal manufacturers to reassess their current practices regarding overall risk management.

Ali (2021) pointed out that the lack of a standardized format for sharing information with suppliers, aside from the information required for halal certification, results in a lack of uniform data formats that can be used by all parties involved. Consequently, the author suggested that the absence of a uniform standard may pose challenges that could further complicate the process. Even with the existence of clear halal standards, implementation can be challenging due to the self-regulatory nature of most logistics providers (Faradina et al., 2018).

Zailani *et al.* (2017) argued that the strict requirements of the halal standard in Malaysia do not consider the unique aspects of logistics operations, resulting in procedures and a lack of cost effectiveness. The authors suggest that other countries' halal logistics standards have criteria that are more cost-effective and can be applied internationally to enhance competitiveness. However, the voluntary nature of halal logistics standards in Malaysia presents a dilemma for industry players, as some may be reluctant to implement them due to the associated cost increase and potential impact on collaboration; this can result in loopholes and breaks in the halal logistics supply chain (Talib, 2020). As such, halal certification bodies should take the lead in harmonizing halal standards to facilitate local and international halal business operations (Khan, 2020).

5. Conclusion and Recommendations

Halal logistic plays an important role in the guarantee and authenticity of the product's status at each stage of the logistic system in Malaysia. Therefore, the research on halal logistics has gained importance due to its critical role in the formation of the total halal ecosystem. This study was focused on selecting a total of 14 articles from among those published in the halal logistics literature, which were systematically reviewed for the last five years from peer-reviewed journals and conference proceedings based on subject inclusion and exclusion criteria, more specifically from 2017-2022.

The paper identifies and discusses the critical issues related to the implementation challenges of halal logistics in Malaysia by referring to a review

of literature. The challenges are sub-themes which were classified under six main themes that include high cost, poor demand, lack of knowledge, complexity of operation, and proper management, and lack of standardization of halal standards. This, therefore, identifies the challenges that are not only facing the logistic providers in creating value and improving the performance of halal logistics. Another important fact, which is to be kept in mind, is that halal logistics provides space not only for market growth but for an opportunity to compete, which will add up to the global pool of opportunities in the halal industry. What is required herein is for the collective addressing of challenges with a view to devising solutions that can enhance the implementation of halal logistics.

This study provides valuable insights on the challenges of halal logistics operations in Malaysia. It is, however, important to recognize that there are limitations to this study, in the sense that these findings are confined only to the articles that were included for systematic review. Future research should consider expanding the scope of the review to include a wider range of contexts and to explore potential solutions for addressing the challenges identified. The study would allow understanding comprehensively the issues faced in Halal logistics and further help in the promotion of adaptation of best practices by service providers in this industry. Such weaknesses notwithstanding, the research constitutes a very important contribution to the literature on halal logistics, since it consolidates the existing knowledge in a systematic way to find out the major challenges and opportunities before the industry.

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