

The Objective of Halal Supply Chain: Merging the Shariah Perspective and the Industrial Requirements

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Abstract

The concept of a halal supply chain has gained considerable attention and prominence in recent years, particularly in the context of the growing global demand for halal products and production. This rising interest reflects the increasing awareness and desire among consumers worldwide for products and services that adhere to Islamic principles and practices, known as Shariah. The halal supply chain has emerged as a critical framework for ensuring the integrity and traceability of halal products throughout the entire production and distribution process, from sourcing raw materials to delivering the final goods to consumers. This paper aims to explore the key objectives and considerations in establishing an effective halal supply chain that aligns with both Shariah requirements and the practical needs of the industry. The document analysis method is used to explore and extract all pertained data on reliable classical and contemporary sources of reference on Quranic verses related to *halalan tayyiban* exegesis, followed by a thematic approach of extracting the halal requirements on related logistical processes and activities from the normative references of Malaysian halal standard. The finding reveals six specific objectives of the halal supply chain process, which are very crucial to guide all the stakeholders involved in the halal industry to ensure the integrity of halal products and services are well observed.

Keywords: Halalan Tayyiban Concept, Halal Supply Chain, Halal Logistics, Objectives of Halal Supply Chain

Introduction

In recent years, the halal industry has experienced significant growth, encompassing not only halal-certified food but also lifestyle products and services (Bashir et al., 2018). This growth has been driven by a multitude of factors, with the primary driver being the rapidly expanding global Muslim population, which is generating an ever-increasing demand for halal-compliant products and services. Halal supply chain management has emerged as a critical component in ensuring that the concept of halal is upheld throughout the entire supply

chain, from the sourcing of raw materials to the final delivery of products to consumers. The integration of halal principles into the supply chain is a complex process that requires the careful consideration of both Shariah and industrial needs. This paper aims to explore the key objectives of a halal supply chain, examining how the Shariah aspect and the industrial needs can be effectively merged to create a harmonious and efficient system for the industry. The paper will delve into the intricate process of integrating halal principles into the supply chain, analysing how the requirements of Shariah law can be harmonized with the practical needs and constraints of the industrial sector. By examining this crucial intersection, the study seeks to provide a comprehensive understanding of the challenges and opportunities inherent in developing a halal supply chain that satisfies both the spiritual and practical demands of the stakeholders involved.

Literature Review

The existing literature on the topic of halal supply chain (HSC) management highlights several key objectives and challenges. One study notes that the halal supply chain must “apply the same principle as a conventional supply chain except for the types of products handled,” emphasizing the need for specialized handling and oversight to ensure compliance with halal requirements (Bashir et al., 2018). Another source suggests that the halal supply chain should focus on “ensuring that the concept of halal is not only applicable for the food itself but also for the whole supply chain starting from the farm to the customer (Sulaiman et al., 2021), where the integration of halal principles throughout the entire supply chain, from raw material sourcing to the final delivery and distribution of products (Manzouri et al., 2013), is a recurring theme in the literature. Supply chain management is the management of interconnected businesses involved in the provision of product and service packages required by the end customers. It involves the planning and management of all activities related to sourcing, procurement, conversion, and logistics such as retail management (Marzolf, Miller and Peinkofer, 2023). This includes coordination and collaboration with channel partners, such as suppliers, intermediaries, third-party service providers, and customers. SCM integrates supply and demand management within and across companies. In essence, it is a network of organizations, flows, and processes where various enterprises collaborate to acquire raw materials, convert them into final products, and deliver those products to customers (Ivanov & Sokolov, 2009).

Relatively, the terms “halal supply chain” and “halal logistics” are still new and occurred contemporaneously with the prevalence of the halal industry. As the customers begin to question more about the ingredients, process and manufactory part of a halal product, the entire chain of production then begins to be exposed. As exposed by Kotler, Kartajaya, and Setiawan (2010), the emergence of a new arena of marketing through human inspiration, value and spirit has slightly triggered the need in the context of the halal industry, for an entirely halal production process or technically known as “halal supply chain”. Although the very idea of “halal supply chain” itself is still new, it has attracted the attention of scholars, academics and industrial players within the Muslim and non-Muslim communities as well to take part in contributing ideas and much-needed efforts. As for the “halal logistics”, Mohd Shaikh and Salleh (2010) share that the term was initiated when the increase of halal global trade and the risk of cross-contaminated halal products with haram goods started to be taken into account, halal particularly in the case of chilled and wet goods and products.

Since supply chain and logistics are technically connected, therefore, both “halal supply chain” and “halal logistics” concepts are also discussed by the scholar in the same notion where all of the elementary segments should be conducted in the spirit of the Shariah, i.e. the Islamic law requirements. There are already few definitions to technically describe what both terms really mean. For instance, Tieman, Vorst, and Ghazali (2012) define halal supply chain management as “extending the integrity of halal from the point of source to the point of customer”. They also discovered that there are three key determinants of halal supply chain management which preserve the objective of extending the halal integrity namely; direct contact with the prohibited (haram), risk of contamination, assurance of safe (pure), quality (good) and free from mal-practice (lawful) product from the point of sourcing to the point of consumption including handling, storage and transportation (Soon, Chandia, and Regenstein, 2017) and the perception of the Muslims on the products. Although this definition is developed through quite mass interviews with Muslim clerics and halal industrial experts (Tieman, 2011), it still lacks in terms of suitable technical terms that should be attached to describe what halal supply chain really means. In fact, the use of “halal integrity” term in this definition has opened another serious issue such as what are the keys elements that constitute “halal integrity”. In 2013, Tieman (2013) offered a more detailed definition of HSC, which is:

“...the process of managing the procurement, movement, storage and handling of materials, parts, livestock, semi-finished or finished inventory both food and non-food, and related information and documentation flows through the organization and the supply chain in compliance with the general principles of Shariah...”

The overall idea in terms of SCM is attached quite precisely and structured, except a slight refinement should be attached for the “halal” idea. In this context, the definition of HSC proposed by Emi Normalina Omar, Harlina S. Jaafar and Muhamad Rahimi Osman (2013) seems simpler and yet capable enough to describe what HSC is with the consideration of the mentioned issue. They proposed that the objective of the halal supply chain is to ensure the halal values are not merely applied to the product itself, but rather it should cover activities involved in handling, packing, transporting and storing (Emi Normalina and Harlina Suzana, 2011) and therefore, they argued the need of introducing “*halalan tayyiban* supply chain” (HTSC). According to them, HTSC could be understood as:

“...the application of *halalan tayyiban* principles along the supply chain from the source of supply to the customers, which adhere to the *halalan tayyiban* concept stipulated under Islamic law”
(Emi Normalina et al., 2013)

However, technically, the term “Shariah law” is normally used to describe a specific Islamic law, which officially received endorsement by the government and is applicable for any jurisdiction matters. In this context, other terms such as “Shariah principles” or “Islamic rulings” are more suitable to depict the “Shariah” idea in the definition. The *halalan tayyiban* concept, on the other hand, has several structural criteria. Therefore, a cohesive definition, which composes the new proposed *halalan tayyiban* criterion and the general principles of Shariah, is crucial. These ideas, which firmly exist in the holy Qur’an, possess a pertinent role in the juridical and ethical aspects as well. In the context of HSC, it rather plays a more

significant role when all of these ideas are spelt out as standard or specific regulations for the existing supply chain and logistics activities. Therefore, in this sense, HSC seems better to be described as:

“The adherence to the *halalan tayyiban* criteria along the supply chain activities from the point of sources to the point of customers in compliance with the principles of Shariah”

This proposed definition is significant for at least two key reasons. Firstly, regarding the *halalan tayyiban* criterion and secondly, is due to the nature of the operational perspective of supply chain and logistics. The former deals with the conceptual idea of halal and the latter affects the overall practicality of HSC, where the Islamic rulings (*fiqh*) will play its role. Therefore, in the context of the formation of the HSC concept, the combination between *halalan tayyiban* criteria and the Shariah principle is significantly important to cater for the needs of the conceptual side and the practicality in the real operations of supply chain activities.

Methodology

Document analysis is a systematic approach for reviewing or evaluating documents both printed and electronic. Akin to other analytical methods used in qualitative research, document analysis entails scrutinizing and interpreting data to derive meaning, gain comprehension, and develop empirical insights (Corbin & Strauss, 2008; see also Rapley, 2007). The documents analysed, encompassing both textual and visual elements, were recorded without any direct intervention from the researcher. According to Atkinson and Coffey (1997), documents can be viewed as “social facts” that are created, disseminated, and utilized within socially structured contexts. Morgan (2022), adds that document analysis is a valuable research method that has been used for many years and consists of analysing various types of documents including books, newspaper articles, academic journal articles, institutional reports, and therefore, any document containing text is a potential source for qualitative analysis.

As for this article, the Shariah perspective on halal supply chain aspects is extracted from the most reliable sources of prominent Quran exegetes both classical and contemporary. The classical ranging from al-Tabari (d. 310H), al-Qurtubi (d. 671H), al-Razi (d. 604H), Ibn Kathir (d. 774H), Ibn Atiyyah (d. 546H), al-Baghawi (d. 512H), al-Alusi (d. 1270H), Ibn ‘Asyur (d. 1973M), al-Zamakhsyari (d. 538H), Abu Hayyan (d. 1344H), where the contemporaries are Rashid Rida (d. 1935M), al-Sa’dy (d. 1956M), Abu Zahrah (d. 1974M), and al-Zuhayli (d. 2015M). As for the industrial perspective of halal supply chain, the related documents including the Malaysian Trade Description Act 2011 (TDA 2011), Trade Description (Definition of “Halal”) Order 2011 (TDO 2011), MS 2400:2019 Part-1, Part-2 and Part-3, the Manual Procedure for Malaysia Halal Certification (MPPHM), and the Compilation of Legal Opinions from the Muzakarah of the National Fatwa Council Committee for Islamic Religious Affairs of Malaysia are referred. All related data on the management of halal supply chain from the Malaysian standard perspective were analysed and articulated specifically for the intended subject and topic.

Results and Discussion

Halalan Tayyiban From Syariah Perspective

“Halal” in the Qur’an is derived from the Arabic root word of “ha-la-la” (ح – ل – ل), or “halla” (ح ل ل), which originally means, “to untie [the knot]” (al-Razi, 1986, Ibn. Manzur, n.d), to unbind, to unfasten, to resolve, to dissolve, to be lawful (William T. W., 1983) to decompound, to discharge and to become legitimate (al-Ba’albaki, 1995). Originally, “halal” appears in the Qur’an as a circumstantial-qualifier (*hal*), which normally denotes a certain quality or standard depending on its use in the passage of the Book through chapters al-Baqarah: 2:168-169, al-Ma’idah: 5:87-88, al-Anfal: 8:67-69, and al-Nahl: 16:114-115. The first passage in the Qur’an says:

“O ye people! Eat of what is on earth, Lawful and good; and do not follow the footsteps of the evil one, for he is to you an avowed enemy. For he commands you what is evil and shameful, and that ye should say of Allah that of which ye have no knowledge.”
[Al-Qur’an: 2:168-169]

The most important message concerning “*halalan tayyiban*” concept is the legality [*halal*] to consume and “*tayyib*” which described as “good by it-self” and “not harmful for one’s body and intellect” [*mustataban fi nafsihi ghayr mudar li al-abdan wa la li al-’uqul*] (Ibn Kathir, 2000). Al-Qurtubi (2006) adds the definition of *halal* as “the untying of the knot of caution” [*inhilal ‘uqdat al-hazr ‘anh*]. When commenting on the word “*tayyib*”, he shares the al-Syafi’i’s view, which uses the word delightful [*al-mustaldh*] to describe the meaning (al-Qurtubi, 2006). Ibn ‘Atiyyah (2001) on the other hand agreed with Malik and al-Syafi’i where both of them suggest wholesome [*mustatibin*] for “*halal*” and delightful [*mustaldhdh*] for “*al-tayyib*”. Al-Tabari (n.d), on the other hand, uses the word “*tilq*” or permissible, to denote the word “*halal*”, which, according to him synonymous with “*al-hill*” or lawful. As for “*al-tayyib*”, he underlines three main points to illustrate the meaning, i.e. “*tahir*” or hygienic, “*ghayr najs*” or non-filthy and “*ghayr muharram*” non-unlawful” (al-Tabari, n.d). Al-Baghawi (1409H), on the other hand is of the view that “*halal*” means permissible (*ma ahalla al-syar’*) by syariah and “*al-tayyib*” means delightful and wholesome (*yustaladhdh wa yustatab*) and also hygiene (*tahir*).

Al-Alusi (n.d.) in this verse has quoted the view of Malik and al-Syafi’i. Malik according to al-Alusi (n.d) opined that “*halal*” and “*tayyib*” are the same and he describes *halalan tayyiban* as “delightful and irreprehensible” (*ladhidhan la yukrah*), whereas al-Syafi’i describes it as “enriching the righteous desire” (*tastatib syahwah al-mustaqimah*). The same idea expounded by Ibn ‘Asyur (1984), where he interprets “*tayyiban*” as “the food which enables the righteous conscious” (*ma tastati’hi al-nufus bi al-idrak al-mustaqim*). Al-Zamakhshari (1998) highlights the idea of what al-Tabari (n.d) has said but with some additional crucial point i.e. “*tahiran min kulli syubh*” or “hygiene from any doubtfulness”. Al-Razi (1981) on the other hand shares that the word “*halalan*” means, “untied the knot of cautiousness” (*inhalla ‘uqdah al-hazr*), which is the same of what al-Qurtubi (2006) said and “*tayyiban*” means delightful (*al-mustaladhdh*). Abu Hayyan al-Andalusi (1993) also insists some pertinent point on “*tayyib*” instead of “*halalan*” where he just offers an antonymous idea of it (*muqabil al-haram*) or “the opposite meaning of haram”. As for “*tayyiban*”, he emphasizes more on the idea of non-syubhah i.e. “hygiene from doubtful” (*al-tahir min al-syubhah*). For “*tayyiban*”, he shares the view of al-Shajawandi (d.560H), which insists the idea

of “naturally delightful” (*mustaladhdh tabi’an*) (Al-Andalusi, 1993). Al-Syawkani (1996), perceives “*halalan*” same as al-Qurtubi i.e. “unfastened the knot of cautiousness” but for the “*tayyiban*” he agreed with al-Syafi’i and Malik. Ibn Hajar (2001) also offered an interpretation of the main verses involved in the topic i.e. from chapter Taha: 81, al-Baqarah: 267, and al-Mu’minun: 51 (Ibn Hajar, 2001) which all of them contain the word “*tayyibat*”. In a nutshell, Ibn Hajar (2001) concludes four main themes to illustrate the meaning of “*tayyib*”, i.e. delightful without harm (*mustaladhdh min ma la darar*), hygiene (*nazif*), non-hazardous (*ma la adha*), and lawful (*‘ala al-halal*). Ibn Hajar (2001), also shares Ibn ‘Abbas’s interpretation on “*tayyib*” i.e. good (*al-jayyid*). He underlines five interpretations for “*tayyib*” which are; delightful without harm, hygiene, non-hazardous, lawful and wholesome (Ibn Hajar, 2001).

As for the contemporary commentators, there are few new ideas on how the modern exegetes interpret “*halalan tayyiban*”. Rida (1350H) for instance interprets “*halalan*” as “non haram” (*ghayr al-haram*) and “*tayyiban*” as “non repulsive” (*ghayr al-khabith*). Al-Zuhaily (2009) on the other hand claims that “*halalan*” are things that are permitted by Sharak (*ma abahahu al-Syar’*) and “*tayyiban*” as delightful (*al-mustaladhdh*). Abu Zahrah (1987) however, offers very pertinent idea to describe the relation between “*halal*” and “*tayyib*”. In his “Zahrah al-Tafasir” he explains:

“...“*Tayyib*” is that which enriches the righteous souls, developing and nourishing them piously. It is not considered “*tayyib*” except earning from that which is lawful (*halal*) and not from the prohibited. And it is not considered lawful (*halal*) if it is (for example) from bribery, fraudulence, or cheating where all of those act leads to “*khabith*” (repulsive), even though they are originally “*tayyib*”.”

(Abu Zahrah, 1987, pg. 498-499)

“*Tayyiban*” through this notion cannot be acquired except through the “*halal*”. However, in explaining “*halal*”, Abu Zahrah (1987) mentioned some instances to depict the “way” which distinguishes “*halal*” from the “*tayyib*” where the standard of “*tayyib*” depends on its physical-substance originality and “*halal*” relates more on the way it is gained. In other words, *halal* deals with the ethical aspect and “*tayyib*” is more inclined to address the physical aspect. Al-Sa’dy’s interpretation of “*halalan tayyiban*” seems to be the same notion as what Abu Zahrah has offered. He says:

“...*Halalan*: means in the state of lawful condition to be consumed not through confiscation, stealing, or fraudulent transaction, or appear like fraudulent, or assisting towards unlawful. *Tayyiban*: means not repulsive such as carcass or blood, flesh swine and all the repulsive.”

(Al-Sa’dy, 2002, p. 77)

As elaborated by Abu Zahrah (1987) “*halal*” is a standard, that controls the process of gaining or the way things are obtained, al-Sa’dy (2002) tries to expound this idea more by offering examples of the illegal ways that render things to the state of unlawful (*haram*). As for “*tayyib*” al-Sa’dy (2002) uses the word “*laisa bi khabith*”, which means non-repulsive, followed by a few instances to describe the physical substance aspect of repulsiveness within. All of these contemporary exegetes, from Rida (1350H) to Abu Zahrah (1987), al-Sa’dy (2002), and al-Zuhaily (2009) agreed upon the different characteristics of “*halal*” and “*tayyib*” where

all seem to standardise the former (halal) more from the aspect of the way of gaining things and the latter (*tayyib*) emphasis more on the physical aspects and substance of it. All of these elements that constitute the conceptual structure of *halalan tayyiban* need to be considered seriously in the sphere of halal supply chain activities. The primary objective of halal supply chain management should be to ensure products are not only permissible by Islamic law, but also physically pure, wholesome, and free from any doubtful, repulsive, or impure elements to ensure all aspects of obtaining, processing, converting, and managing halal materials are properly conducted.

Halal from Malaysia Legal Perspective: the Trade Description (Definition of “Halal”) Order 2011

The Trade Description Act 2011 (TDA 2011) is the main legislation governing halal matters and enforcement in Malaysia although it focuses more on the misuse of halal logos and signs in trades and businesses. This act provides a quite comprehensive legal framework to regulate the halal certification process, ensure compliance with halal Islamic principles, and enforce halal standards across the supply chain activities. It defines the requirements for a product, service, or process to be considered halal, covering aspects such as ingredients, slaughtering methods, handling, storage, and transportation. TDA 2011 aims to protect consumers by guaranteeing the authenticity and integrity of halal products, thereby promoting confidence in the Malaysian halal industry both domestically and internationally. In order to enable enforcement of TDA 2011, the Trade Description (Definition of ‘Halal’) Order 2011 defines “halal” was then legislated and thereby defines halal product as: (a) neither is nor consist of or contains any part or matter of an animal that a Muslim is prohibited by Hukum Syarak to consume or that has not been slaughtered in accordance with Hukum Syarak and fatwa; (b) does not contain anything impure according to Hukum Syarak and fatwa; (c) does not intoxicate according to Hukum Syarak and fatwa; (d) does not contain any parts of a human being or its yield which are not allowed by Hukum Syarak and fatwa; (e) is safe to be used or consumed, not poisonous or hazardous to the health; (f) has not been prepared, processed or manufactured using any instrument that was not free from anything impure according to Hukum Syarak; (g) has not in the course of preparation, processing or storage been in contact with, mixed, or in close proximity to any food that fails to satisfy paragraph(a) and (b) (Trade Description (Definition Of ‘Halal’) Order, 2011).

From the legal perspective, the Trade Description Order 2011 (TDO 2011) defines halal holistically where it requires the food or product to satisfy not only the religious aspect but also the physical aspect of being safe, non-hazardous, and hygienically processed (Haleem & Khan, 2017, Man & Sazili, 2010, Baharuddin et al., 2015, Salamon, 2021). Such a definition offers more coverage of halal when it is spelt out in the context of industrial practice ranging from ingredients and slaughtering methods to processing, handling, and storage, ensuring halal integrity throughout the supply chain and avoidance of any cross-contamination or commingling of halal and non-halal products (Bashir et al., 2018) (Haleem & Khan, 2017) (Zulfakar et al., 2014). The provisions in TDA 2011 and TDO 2011 cover most supply chain management aspects to ensure halal integrity and they regulate suppliers, manufacturers, distributors, and retailers to observe halal requirements before halal products reach customers. This includes logistics activities like preparation, processing, or storage of halal goods, with strict requirements to avoid contact, mixing, or proximity with non-halal items.

Objectives of Halal Supply Chain

Halal supply chain (HSC) concept is an attempt to offer management the flow of goods and services from origin to consumer in compliance with Islamic principles (Khan et al., 2018), where it aims to maintain the halal integrity of products at every stage, from sourcing and production to logistics and delivery (Tieman et al., 2012), involving careful scrutinisation of ingredients, processing methods, packaging, storage, transportation, and event handling (Mohamed et al., 2020). The growing global demand for halal products has increased the complexity of supply chains, involving various parties across different locations that may also handle non-halal products. This comprehensive approach is crucial as it supports the growth of the halal industry and promotes ethical and sustainable practices. Ensuring the objectives of the halal supply chain are properly addressed and achieved requires a combination of both the Shariah perspective and industry insights. Thus, careful balance and alignment between religious requirements and practical industrial realities are needed to create an effective and sustainable halal supply chain system. The following objectives of HSC are constructed with all the proposed critical aspects of Shariah and the industrial requirements based on the Malaysian standard normative references. It is therefore aiming at the collaborative efforts among the main parties in the supply chain, i.e. the supplier, manufacturer, distributor, and wholesaler (Rahman et al., 2018) (Okdinawati et al., 2021) (Zulfakar et al., 2014) to observe the halal related standards and requirement based on the following objectives. These six objectives are presented within the original context of the process, with three stemming from the supply chain perspective and the rest from the logistics management standpoint. They are:

Continuous Supply of Halal Certified Raw Materials (RM)

Within supply chain activities, the raw materials should be procured exclusively from halal-certified suppliers. This requires comprehensive verification and auditing processes to ensure the halal status of all inputs. The manufacturing and processing stages of the supply chain are critical for maintaining the integrity of the halal supply chain process, as any contamination or mixing of non-halal materials can jeopardise the halal status of the final product (Kadir et al., 2016). At this point of the process, alignment with Shariah laws and requirements for halal food production is crucial Kadir et al (2016), to ensure that every raw material used in the manufacturing adheres to halal standards (Zulfakar et al., 2014). Among the most critical uses of RM are the edible parts of raw materials and ingredients, followed by any non-edible ingredient, such as the processing aids, that will affect the ingredients of the final product, and packaging materials that, in some cases, will cause chemical cross-contamination with the finished product when it they are kept and stored in a long period.

In the context of the Malaysian Halal Certificate Scheme (MHCS), this objective needs to consider all the different characteristics of the nine different schemes as they were also designed to cater for the specific needs for facilities and equipment, experts involved, and the latest technologies used, to ensure halal integrity are well observed across the schemes. The nine different schemes are; Food and Beverage Products, Cosmetic Products, Pharmaceutical Products, Food Premises, Consumer Goods, Logistics Services, Slaughterhouses, Contract Manufacturing/OEM and Medical Device Products (MPPHM, 2020). Some of these schemes are extremely critical in the process of how the RM is being manufactured, such as the halal slaughterhouse scheme deals with the livestock, which sometimes involves beyond domestic types of poultries and ruminants, where critical international laws and regulations on animals

and livestock's trafficking are applied. The same thing goes for the chemical-based, exotics herbs of RM for pharmaceuticals and cosmetics Jain et al. (2022); Abdullah et al. (2020), food and beverages supplements Rajendran et al. (2024), the use of liquors-derivative alcohol muftiwp.gov.my, (2024) Pauzi et al. (2019), gelatines and faeces, and even use of parts of human being such as L-Cysteine Plaza et al (2018), lards and tallows Abidin et al. (2023), and the detrimental element Bucheli et al (2018), such as formaldehyde (davidsuzuki.org, 2024), mercury, hydroquinone, betamethasone valerate and others. From the halal industrial perspective, the requirement of halal raw materials will ensure the continuous production of authentic halal products or goods. Besides enabling a smooth production chain, it will also help to avoid any unintended mixing or contamination of non-halal raw materials and ingredients that can undermine the halal integrity of the final product. The MS2400:2019 series emphasizes the importance of supplier monitoring in halal supply chain management. MS 2400-2:2019 requires organizations to establish procedures for receiving and handling incoming goods, including verifying their halal status, evaluating suppliers' halal certification, and monitoring their compliance. Besides, appropriate handling and storage are also crucial to prevent contamination. While the standard does not dictate specific suppliers, it underscores the organization's responsibility to ensure all incoming goods meet halal requirements. This implies careful supplier selection and ongoing monitoring. MS 2400-3:2019 further details supplier monitoring in the retail context. Comprehensive supplier management and monitoring throughout the supply chain, from raw materials to retail, are essential for maintaining the integrity and authenticity of halal products.

Halal Compliance Manufacturing/Production Process

Secondly, HSC is constructed to ensure the objective of complying with the halal requirements in all the manufacturing processes is achieved. Conventionally, Sheets (2018), describes manufacturing as the stage that details the processes used to create a product, including cell growth, product extraction, and purification, while some researchers define manufacturing as the production of finished goods using manpower, machines, tools, and chemical or biological processing (Sattar et al., 2014). It also mentions intelligent systems used in manufacturing, such as flexible manufacturing systems and computer-integrated manufacturing. Aziz et al. (2019), describe manufacturing as a broad term encompassing activities from basic cooking to complex equipment production. The manufacturing and processing stages are critical for maintaining the integrity of the halal supply chain process, as any contamination or mixing of non-halal materials can jeopardise the halal status of the final product. At this point of the process, alignment with Shariah laws and requirements for halal food production is crucial to ensure that every step of the manufacturing adheres to halal standards. Manufacturing refers to the processes that transform the raw materials into the final products, including activities such as slaughtering, cutting, mixing, frying, cooking, packaging, and storage and all sub-processes of transforming raw material into finished products across all the nine different schemes of Malaysia Halal Certificate (MHC). This can encompass a wide range of activities depending on the specific industry and product. For example, in manufacturing, the process might involve machining, assembling, and packaging. In food processing, it may include cooking, mixing, and preserving and in a service-oriented business, conversion might involve transforming information or providing a particular service. The halal manufacturing process must be done in a dedicated halal-certified facility or plant, using halal-certified equipment and carried out by halal-trained personnel (JAKIM, 2015) to ensure the integrity of the process and the final product.

Specifically, within halal supply chain management, manufacturers must adhere to Islamic principles to maintain the halal integrity of the product. This includes ensuring that all ingredients, processes, and equipment used are compliant with Shariah law. From an Islamic law perspective, manufacturing also needs to consider a few critical theories of Shariah ruling involved, such as the theory of *istihalah* (transformation) in the case of chemical and substantial transformation Jamaludin et al. (2011), the theory of *jallalah*, which deals with animals that have been fed with impurities or the coprophagous animals, (Jamaludin et al., n.d.) (Arifin et al., 2021), the theory of *intiqal* (transition), where the material of impure origin changes into pure form Ramli et al. (2023), and other related theories in Shariah. Moreover, modern mechanical technologies, such as stunning, mechanical slaughtering, and cleaning tools, are adopted in the manufacturing of halal products as substitutes for human services in halal slaughterhouses. These technological adoptions must be evaluated for their compliance with Shariah principles, ensuring they are permitted. Besides that, the Malaysian standard MS 1500:2019 also provides detailed guidelines for halal food production, handling, and storage. It states that equipment used for halal manufacturing must be designed for easy cleaning and free from materials considered impure under Islamic law. The standard also emphasises preventing cross-contamination between halal and non-halal products throughout the supply chain. This requires effective separation of facilities, equipment, and personnel handling these items and the organization must have clear protocols to maintain this strict separation at all times.

Halal Compliance Logistics Process

The third objective of HSC is to ensure all the logistics activities are conducted within the guidance of related Shariah requirements. For this, three specific objectives for halal logistics management are identified. Logistics activities are an integral part of the broader supply chain management framework, which must hold the adaptability and responsiveness in logistics operations to cope with dynamic and uncertain environments (Ivanov & Sokolov, 2009)(Haleem et al., 2021). Logistics normally encompass the processes of planning, executing, and regulating the efficient and effective movement, handling, storage, and delivery of goods, services, and associated information from the source to the point of consumption to meet customer demands. This involves coordinating various activities such as transportation, warehousing, inventory management, and information flow to ensure products reach the end user in a timely and cost-effective manner (Ahmad & Shariff, 2020). The logistics activities typically take place among the key supply chain stakeholders and in the context of Malaysian Halal Supply Chain Standards, the halal logistics requirements are spelt out within the MS2400:2019 series, namely the Standard on Halal Supply Chain Management System, Part 1: Transportation- General requirement, MS2400:2019 Part 2: Halal Supply Chain Management System, Part 1: Warehousing- General requirement, and MS2400:2019 Part 3: Halal Supply Chain Management System, Part 1: Retailing - General requirement.

The main objectives of halal logistics are to preserve the halal integrity of products throughout the supply chain, from sourcing to delivery to the consumer, and to prevent cross-contamination with non-halal materials. This requires proper segregation, handling, storage, and transportation of halal and non-halal products to avoid potential contamination. Halal logistics activities must follow specific Shariah-technical requirements, such as using dedicated halal-certified storage facilities, halal-compliant transportation, and proper labelling and documentation to maintain traceability and transparency. According to the

Malaysian standard, several fatwas on logistics activities must be considered (Jabatan Kemajuan Islam Malaysia, 2015). These include guidelines of fatwas addressing the handling and storage of goods, as well as six fatwas related to issues of impurities, two fatwas were issued regarding the displaying and manipulating of the Holy Quran or any Quranic elements, and four fatwas were issued concerning the labelling, packaging, promotion, and display of goods (Jabatan Kemajuan Islam Malaysia, 2015). All of these fatwas from the Malaysia National Fatwa Council must be carefully considered and aligned throughout the logistics activities to ensure comprehensive Shariah compliance and maintain the halal integrity of the supply chain operations.

In the HCS, these logistics activities must be managed to maintain the halal integrity of products throughout the supply chain, from sourcing to delivery to consumers. This includes proper segregation, handling, storage, and transportation of halal and non-halal products to prevent cross-contamination. Besides, the concept of *syubhah* or doubtful also needs to be clarified as the logistics scheme in Malaysian Halal Standard solely falls under the category of service, in which the logistics operators are not managing their own products, goods or cargo but rather responsible for products and cargo of their clients. In this scenario, the concept of doubtful or *syubhah* needs to be further studied seriously. It is due to the issue of doubtful or *syubhah* is no longer involves specific materials or ingredients but rather appears as a “situational” or “conditional” doubtful related to managing the risk of cross-contamination with impure elements. The definition of “doubtful” in the MS 2400 series, which mentions “...when the control measures are not implemented or ineffectively implemented...” not only displays paramount importance in the context of halal logistics Risk Management Plan (HRMP) but rather it is very crucial to be adopted with the sense Shariah perspective on how “*syubhah*” theory could be well defined and implemented simultaneously with the conventional risk management plan. In this context, the concept of doubtful or *syubhah* needs to be examined more closely due to the risk of cross-contamination with impurities (*najs*) in logistics activities, which has become a new challenge that arises in the management of the halal supply chain. The potential for cross-contamination with impurities must be carefully addressed and mitigated to ensure the halal integrity of the products throughout the supply chain.

Prevent and Manage Impurities (Najs)

The first objective related to logistics activities is the proper management of different types of impurities (*najasah*) and mitigating the risk of cross-contamination to uphold halal integrity throughout the supply chain. Islamic law, particularly from the Shafi'i school of thought, recognizes three categories of impurities – severe (*mughallazah*), moderate (*mutawassitah*), and light (*mukhaffafah*) - each with specific handling requirements. These distinct types of impurities must be comprehensively understood, robustly prevented and carefully managed across all aspects of supply chain operations. Severe impurities, such as dogs, pork, swine and its derivatives and by-products must be strictly avoided and banned from entering halal-related premises. The MS2400:2019 series regulates the *sertu* procedure to be conducted if a severe impurity is discovered, ensuring complete decontamination. This thorough cleansing process, as prescribed by the Shafi'i school of Islamic jurisprudence, involves washing the affected area seven times, with the first wash using clean water mixed with soil and the subsequent six washes using only pure, clean water.

Certain Malaysian fatwas related to logistics activities also must be referred to, such as guidelines related to the handling and storage of goods and six fatwas related to issues of impurities (*najs*) (Jabatan Kemajuan Islam Malaysia, 2015). These fatwas offer crucial guidance and mandates that must be diligently observed and implemented to uphold halal integrity across the entire supply chain operations. The contemporary issues surrounding these types of impurities arise from various circumstances, which are sometimes quite difficult to determine and normative references to fatwa and rulings are often required to ascertain the *hukm* (ruling) for a particular situation (Karia, 2019) (Rahman et al., 2018) (Tieman & Ghazali, 2014). Proper prevention and management of impurities across all aspects of the supply chain, including premises, facilities, and equipment, as outlined in MS1500:2019, is essential for upholding the halal status of products. Each type of impurity - severe, moderate, and light - has distinct characteristics that require specific handling and cleansing methods. Understanding and addressing these varying scales of impurity is crucial for maintaining halal integrity. All the requirements in MS1500:2019 regarding premises, facilities, devices, hygiene, sanitation, packaging, and labelling must be observed.

Observation of Hygiene, Sanitation and Safety Requirements

The Quran and Sunnah emphasize personal hygiene and cleanliness as a manifestation of faith. The concept of *taharah* is central to Islamic teachings, extending to all aspects of a Muslim's life. In halal supply chain management, personal hygiene and cleanliness are crucial for all personnel handling, processing, and distributing halal products. Proper handwashing, clean and appropriate attire, and high personal grooming standards are essential requirements. The MS2400:2019 series highlights the importance of personal hygiene and cleanliness, providing specific guidelines and procedures for personnel to follow. Among others, the requirement covers Health Status (7.4.1 a), where personnel with any illness that could potentially contaminate halal products must declare their condition to prevent contamination from the source, Medical Examination (7.4.1 b), which the standard recommends medical examinations for personnel when clinically or epidemiologically indicated to further emphasises the importance of ensuring personnel are fit to handle halal products. It is followed by Cleanliness (7.4.2.1): which mentions that personnel involved in handling halal products must maintain a high degree of personal cleanliness. Wound Care in clause (7.4.2.2) mentions that any cuts or wounds must be covered with waterproof dressings to prevent contamination from bodily fluids. The handwashing clause (7.4.2.3) mandates proper handwashing techniques before handling activities, after using the lavatory, and after handling any potentially contaminated items to highlight the importance of hand hygiene in preventing cross-contamination. Attire after Non-Halal Contact in clause (7.4.2.4) focusing on the personnel who have come into contact with non-halal products, they must change into clean attire and perform *sertu* (ritual cleansing) if needed before handling halal products. Prohibited Conduct in clause (7.4.3.1) emphasises that certain behaviours such as smoking, spitting, eating, drinking, and sneezing/coughing near products are prohibited. These actions could compromise the halal status of the products. Clause on Personal Items (7.4.3.2): insists that personnel should not bring personal items into handling areas that could cause contamination. This reinforces the focus on maintaining a clean and controlled environment. The final one is on the Visitor Hygiene (7.4.4): where visitors in the "handling areas" must also adhere to the same hygiene provisions to ensures that everyone within the handling environment maintains the required standards (Department of Standards, 2019).

The environment and facilities within which halal products are handled, processed, stored and distributed must be designed, constructed and maintained to prevent contamination and uphold halal integrity (Hew et al., 2020, Manzouri et al., 2013). This includes ensuring that the premises, equipment, facilities, tools and machinery are free from any impurities, are in good working condition, and are regularly cleaned and sanitised as per the requirements outlined in the standards. For instance, Section 7.5 Environment, perimeter and grounds mandates procedures to control environmental conditions that could negatively impact product quality. It requires regular inspections and documentation of environmental control systems. The surrounding perimeter and grounds must be maintained to prevent contamination (Department of Standards, 2019). Section 7.6 Maintenance of equipment requires equipment to be well-maintained to enable proper sanitation, function, and prevent contamination from non-halal or hazardous materials. The text emphasizes the importance of equipment maintenance for maintaining hygiene, though it does not specify cleaning procedures. These comprehensive guidelines on personnel hygiene and cleanliness are crucial for maintaining halal integrity throughout the supply chain. As outlined in the MS2400:2019 series, these detailed requirements and procedures must be strictly followed by all personnel handling, processing, and distributing halal products. From proper handwashing to personal grooming standards, every aspect of hygiene is addressed to uphold the halal status of the products across the supply chain.

Segregation and Separation between Halal and Haram Products, Goods, and Cargos

This third objective of halal logistics focusing more on the segregation and separation between halal and haram products, goods or cargo. Paragraph (g) of TDO 2011 clearly describes the logistical aspect of managing halal-certified goods and foods, i.e. “...(g) *has not in the course of preparation, processing or storage been in contact with, mixed, or in close proximity to any food that fails to satisfy paragraph (a) and (b).*”. Paragraph (a), on the other hand, regulates the prohibition of non-slaughtered animals according to Shariah law, and (b) on the prohibition of all types of impurities according to Shariah law (Trade Description (Definition of Halal) Order 2011, 2012). Moreover, the MS 1500:2009 emphasises the importance of separating areas, equipment, and processes to maintain halal integrity. MS 1500:2019 also emphasises separation and control measures to maintain halal integrity. For instance, Clause 4.3 addresses the prevention of cross-contamination, requiring effective separation between halal and non-halal products during handling, preparation, processing, packaging, storage, transportation, and serving. This separation extends to facilities, equipment, and utensils (Department of Standards, 2019). Annex A details the specific cleansing procedures for *najs al-mughhallazah* (severe impurities), highlighting the importance of proper cleaning and purification to maintain halal status (Department of Standards, 2019). Maintaining clear separation and segregation between halal and non-halal products throughout the supply chain is crucial for preventing cross-contamination and ensuring the integrity of halal goods. These separation practices, which include dedicated transportation, warehousing, and handling protocols, as well as thorough cleaning and sanitation procedures, are essential for upholding the halal status of products at every stage of the supply chain process.

Halal logistics management plays a crucial role in ensuring all halal goods are properly handled and managed to prevent contact, mixing, or proximity with non-halal or impure goods. Careful precautions must be taken at all times to segregate and prevent any

commingling or cross-contamination between halal and non-halal products throughout the supply chain. The diverse categorisation of products, such as frozen, chilled, dried, dairy-based, and solid or liquid, necessitates specialised facilities, technologies, and expertise for handling and storage. In this scenario, management needs to have proper systems and procedures in place to ensure clear segregation and isolation between halal and non-halal items/products across the supply chain. This can be achieved through dedicated transportation, warehousing, and handling protocols, as well as thorough cleaning and sanitation practices before and after handling/storing halal goods (Hew et al., 2020)(Haleem et al., 2021)(Rahman et al., 2018). Halal logistics in this sense requires dedicated warehousing and storage facilities to maintain the integrity of halal products (MS1500;2019). Storage areas must be designed, constructed, and maintained to prevent any cross-contamination or intermixing with non-halal goods. The storage facilities should have dedicated areas for halal and non-halal products, with clear physical segregation and labelling to avoid any mix-ups. Proper inventory management and control systems are essential to track and ensure the halal status of products throughout the storage and distribution stages. The excerpt from the third source highlights the necessity of establishing dedicated halal warehouses and storage facilities to extend logistical operations whose primary aim is to avoid possible risks of cross-contamination.

Ensure Collective Halal Compliance among HSC Parties

The implementation of halal practices and standards across the supply chain requires the collective commitment and compliance of all stakeholders involved, from suppliers and logistics providers to distributors and retailers. As the fourth HSC objective, this collective efforts require each party must adhere to the halal requirements and protocols to maintain the integrity of halal products at every stage. As the most complicated objectives, however, it could be achieved through a few key strategies. Firstly, comprehensive training programs are essential for all personnel involved in the HSC, where it should cover halal requirements, best practices for hygiene and sanitation, proper handling procedures, and cross-contamination prevention. Secondly, open communication and collaboration among all HSC parties are crucial, especially regarding halal logistics management (Haleem & Khan, 2017). This includes sharing information about halal compliance procedures, proactively addressing potential risks, and collaboratively resolving any emerging issues. Thirdly, regular audits and inspections, both internal and by third-party certification bodies, are essential for verifying compliance, identifying areas for improvement, and ensuring adherence to halal standards. Next, robust traceability and documentation systems are vital for tracking products throughout the HSC, which includes documenting the origin of ingredients, processing steps, handling procedures, and ensuring halal integrity at each stage. Careful selection and ongoing monitoring of suppliers are also crucial to ensure that all incoming materials and ingredients meet halal requirements and that suppliers adhere to halal standards. Lastly, physical segregation of halal and non-halal products, goods, and cargo is critical. This includes dedicated transportation, warehousing, and handling protocols, as well as thorough cleaning and sanitation practices. Breaking any halal requirements within any logistical process or activities in any parties involved in this supply chain management will trigger a non-compliance situation, raising the doubtful elements or at least affecting the level of confidence of customers towards halal products or services.

Conclusion

In conclusion, the halal supply chain must integrate Shariah principles and practical industrial needs by focusing on its halal integrity, including cleanliness, hygiene, and purity must be carefully implemented throughout the main parties. Therefore, the proposed halal supply chain objectives critically encompass acquiring halal-certified raw materials, ensuring halal manufacturing, upholding halal logistics requirements, preventing impurities per Shariah, observing hygiene, and enforcing segregation or dedicated halal facilities. Such an approach that combines the Shariah and industrial needs is crucial to maintaining halal integrity from sourcing to the point of delivery. It also requires a comprehensive understanding of the Shariah guidelines, rigorous application of halal risk management practices, and effective coordination among the stakeholders. The objective serves as industrial guidance for organisations and enterprises to achieve halal compliance while meeting the growing demand for halal products in the global marketplace, where a strategic and efficient supply and demand of halal-certified products, goods and cargo are well-managed, collectively integrated, and sharing the same ultimate aims and vision through various roles and functionality.

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