

HALAL FOOD SUPPLY CHAIN (HFSC) AND SUSTAINABILITY CONCEPT

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Abstract: *The halal food industry is currently one of the fastest-growing markets worldwide and has been identified as the new engine of economic growth. Despite the vast global Muslim population and the apparent demand for and consumption of halal food, the worldwide halal business produces food waste and jeopardizes environmental sustainability. Unfortunately, the importance of considering the environmental impact and sustainable business practices in managing halal supply chain management has not been discussed deeply by scholars and practitioners. To fill a gap in the literature and address existing practices, this paper seeks to discuss the sustainability concept concerning halal food supply chain management. This content analysis review is based on brief and limited insights from selected literature. This review will significantly aspire halal manufacturers in achieving the targets and indicators of the 2030 United Nations (UN) Sustainable Development Goals (SDG).*

Keywords: *Halal, Halal Food Supply Chain, Supply Chain, Sustainability, Sustainable Development Goals*

Introduction

Halal refers to what is permitted or legal by Islamic law. In conjunction with the idea of halal is the idea of tayyib, which in Arabic means good, wholesome, and safe. The whole concept of *halal thoyyiban* means the goods are wholesome according to Islamic principles and permissible to be consumed as it is safe and not harmful (Khan & Haleem, 2016). This rule enables Muslims to determine between halal (permitted) and the prevention of haram (forbidden). Muslims may only eat halal, though haram is forbidden, and doubtful items must be avoided (Khan et al., 2018; Yusuf Al-Qaradawi, 1999). Consuming halal is duties of Muslims as stated in Surah al-Baqarah verse 172,

يَا أَيُّهَا الَّذِينَ ءَامَنُوا كُلُوا مِن طَيِّبِ مَا رَزَقْنَاكُمْ وَاشْكُرُوا لِلَّهِ إِن كُنتُمْ إِيَّاهُ تَعْبُدُونَ

O, believers! Eat from the good things We have provided for you. And give thanks to Allah if you truly worship Him alone.

(Surah Al-Baqarah: 172)

In recent decades, the concept of halal has evolved beyond a religious one to also include various Islamic economic sectors. According to the 2019/2020 State of Global Islamic Economy Report, Halal Islamic economic sectors include halal food, modest fashion, media and creation, Muslim-friendly travel, halal pharmaceuticals, halal cosmetics, and Islamic finance (Dinar Standard, 2020). The global halal market, which is predicted to reach USD 5.0 trillion in terms of consumption of halal food worldwide by 2030, is currently worth USD 560 billion annually and is expanding at a rate of 20% (HDC, 2019). The increase in global halal food spending can be translated into greater purchasing power, indicating that the halal food market is a viable arena for competition. The demand for halal food products has increased due to the growing and expanding Muslim populations around the world. According to the Pew Research Centre report, by 2050, the Muslim population across the world is expected to reach 2.76 billion, or 29.7% of the world's population (Pew Forum On Religion And Public Life, 2009).

Despite its rapid expansion and immense potential, the worldwide halal business produces waste and jeopardises environmental sustainability. Despite the lack of substantiated data to support such a claim, Huang et al., (2020) notify that it is a worrying concern faced by many markets and it has been reported that food waste makes up the most significant portion of municipal waste compositions in both developing and developed countries due to factors such as the widespread access to and availability of food. Food waste is defined as any edible food produced for human consumption but not consumed, either intentionally or unintentionally, and discarded along the entire food supply chain, from farm to fork. It is organic waste that is expelled from a variety of locations, such as food processing facilities, residential and commercial kitchens, cafeterias, and restaurants (Huang et al., 2021). Another terminology for food waste is bio waste, and kitchen waste, has been used inconsistently.

The vast global Muslim population and the apparent demand and consumption of halal food would also reasonably induce food waste. Unfortunately, much emphasis on the halal food industry and supply chain has overlooked the value of reconsidering the environmental effect and sustainable practices when doing business. There is an urgent need for scholars and practitioners to probe more pressing issues on sustainable concerns in the halal food sector (Secinaro & Calandra, 2021). Thus, this paper attempts to address the sustainability concept of halal food supply chain management which indicates a gap in the literature and current practices.

This paper will use the United Nations (UN) (www.un.org) definition of sustainability as "meeting the needs of the present without jeopardising future generations' ability to meet their own needs." According to the UN definition of sustainability, supply chain participants must strike a balance between viable distribution practices and environmental protection.

Literature Review

There are four concepts will be discussed in the literature review:

Halal and Sustainability Concept in Islam

Islam, like many religions, promotes sustainability practices. Allah commands devotees in the Quran to protect the environment and not be wasteful. Table 1 lists some of Allah the Almighty's decrees. In these verses, it is highlighted that Islamic teaching opposes environmental harm, advocates moderation, and bans waste—all of which are consistent with sustainability principles.

Table 1: Sustainability-themed Verses from the Quran

Surah	Verse	Translation	Sustainability Theme
Al-A'raf (The Heights)	31	“O Children of Adam! Dress properly whenever you are at worship. Eat and drink, but do not waste.”	Do not waste
	85	“So, give just measure and weight, do not defraud people of their property, nor spread corruption in the land after it has been set in order. This is for your good if you are true believers.”	Forbid the corruption / ethical practices
Al-An'am (Cattle, Livestock)	99	“And it is He who sends down rain from the sky, and We produce thereby the growth of all things. We produce from it greenery from which We produce grains arranged in layers. And from the palm trees – of its emerging fruit are clusters hanging low. And [We produce] gardens of grapevines and olives and pomegranates, similar yet varied. Look at [each of] its fruit when it yields and [at] it's ripening. Indeed, in that are signs for a people who believe.”	Protect the environment
Al-Furqan (The Criterion)	67	“And (they are) those who, when they spend, do so not excessively or sparingly but are ever, between that, [justly] moderate”	Living a balanced, moderate life

Source: The Holy Quran (www.quran.com)

Halal Food Supply Chain (HFSC) Concept

The halal supply chain is the management of a halal network to extend the halal integrity from the source to the point of consumer purchase (Standards Malaysia, 2019). Khan et al., (2018) define Halal Supply Chain as:

“A process-oriented approach, to manage the flow of material, information and capital; through strategic coordination and collaboration of stakeholders, as to create value to improve the performance of the Supply Chain, in such a way that Halal and Tayyib is extended from farm to fork”

The process starts from the point of origin to the point of consumption. In another word, a “farm to fork” concept is applied along every stage of the supply chain. The concept of halal encompasses adhering to Shariah law in all respects, including handling, packing, warehousing, inventory management, and the procurement and delivery processes as well as the ingredients or origin of the products.

Since the production of halal food will be useless if its cleanliness is not maintained during the delivery process from the source of supply to the final customers, food handling and the supply chain process are viewed as vital in the halal business. If all potential contamination brought on by haram and dangerous products is avoided throughout the supply chain process until it reaches the customers, a product could become halal. As a result, a halal process can be seen from the perspective of the supply chain, as a halal product can only be produced when all activities across the supply chain process are solely focused on halal items or isolated from haram and dangerous products. Since the halal concept involves not only the sources of food, maintaining a robust halal supply chain is a significant problem for all halal food producers, according to

Tieman (2011). If halal food products are not handled correctly, they cannot be labelled as such. Separating halal and non-halal products is crucial to preserving the halal integrity of the supply chain because halal commodities move over large distances and through a variety of handling activities.

The halal supply chain, according to Rasi et al. (2017), consists of four main parts: halal manufacturing, halal distribution, and halal logistics. Halal inputs, by-products, and resources are the focus of halal procurement since they are essential to maintaining the integrity of halal. The production process should be conducted according to halal standards and with halal materials by halal manufacturers. The organisation and protection of goods and materials before the delivery of halal products to clients was the focus of halal packaging, halal containers, and halal logistics, on the other hand.

Sustainability and Halal Food Supply Chain (HFSC) Concept

Industry experts and academia have recently expressed an interest in discussing supply chain sustainability issues. Evidence of this can be found in the recent increase in papers reporting supply chain network sustainability issues. Sustainability is widely considered to require the integration of three factors—economic, social, and environmental responsibility—into company processes. Elkington (1997) popularised the three dimensions as the triple bottom line (TBL) concepts (also known as the three pillars: profit, planet, and people). It has also become a crucial issue in supply chain management, especially when discussing how it helps with cutting waste, increasing productivity, and planning for efficiency. Academic researchers (Haleem et al., 2020, 2021) appear to be steadily establishing a connection between the practical, which emphasizes a safe and wholesome food supply chain, and the determination to simultaneously create a sustainable and environmentally friendly halal food ecosystem.

According to Seuring and Müller (2008), the supply chain management (SCM) process refers to all activities involved in the extraction, manufacture, and processing of items from raw materials to the final consumer. In the supply chain, resources and information resources and information in the supply chain move in both directions, up and down. Supply chain management (SCM) also involves the integration and collaboration of business strategies across the supply chain partners (Rejeb et al., 2021).

Transforming from the supply chain management (SCM) concept to Sustainable Supply Chain Management (SSCM) involves integrating environmentally, socially, and financially practical practices into the complete supply chain lifecycle, from product design and development to raw material selection (procurement), manufacturing, packaging, transportation, warehousing, distribution, consumption, return and disposal. SSCM generates significant pressure on organizations to modify their strategies to meet sustainability needs. SSCM is a cutting-edge management technique that can help food manufacturers achieve sustainable performance.

Halal Food Supply Chain (HFSC) Concept and 2030 United Nations (UN) Sustainable Development Goals (SDG).

On January 1, 2016, the world formally began implementing the 2030 Agenda for Sustainable Development, a transformative plan of action based on 17 Sustainable Development Goals to address major global challenges over the next 15 years. This agenda is a road map for people and the planet to ensure global social and economic progress. It aims not only to remove extreme poverty, but also to combine and balance the three pillars of sustainable development; economic, social, and environmental to a complete global vision (Guterres, 2020). To meet the

Sustainable Development Goals (SDGs), which ought to be accepted as a fundamental business practice, it is essential to balance environmental, economic, and social responsibility activities. This is where the HFSCM concept plays an important role. Table 2 below maps the targets and indicators of the 2030 United Nations (UN) Sustainable Development Goals (SDG) that could be met by the Halal Food Supply Chain (HFSC).

Table 2: Mapping of Halal Food Supply Chain (HFSC) and Sustainable Development Goals

Triple Bottom Line Components	Sustainable Development Goals	Sustainable Development Indicator/ Targets	How HFSC meeting the Targets of SDG
Economic	Goal No 3: Good Health and Well Being Ensures healthy lives and promotes well-being for all at all ages	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	The foundation of halal practice (i.e., to avoid contamination) may ensure that final products that reach consumers are safe to be consumed and that the quality may promote the health and well-being of society.
Economic	Goal No 9: Industry Innovation, and Infrastructure Build infrastructure, promote inclusive and sustainable industrialization and foster innovation.	9.1 Develop quality, reliable, sustainable, and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Halal food manufacturers must promote industry innovation through the development of value-added services and upgrade the infrastructure.
Economic	Goal No 17: Partnerships for the Goals <i>Multi-stakeholder partnerships:</i> Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial	17.11 Significantly increase the exports of developing countries, to double the least developed countries' share of global exports.	Implementing HFSC requires cooperation and collaboration among various stakeholders to support the country's aspirations to be the Global Halal Hub.

	<p>resources, to support the achievement of sustainable development goals in all countries, in particular developing countries</p> <p>Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships</p>		
Social	<p>Goal No 10: Reduced Inequalities</p> <p>Reduce inequality within and among countries</p>	<p>10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion, or economic or another status.</p>	<p>Addressing the need to consume halal food is the inclusion of all irrespective of religion.</p>
Social	<p>Goal No 12. Responsible Consumption and Production</p>	<p>12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.</p>	<p>Create awareness among society on the importance to have a sustainable lifestyle.</p>
Environment	<p>Goal No 12. Responsible Consumption and Production</p> <p>Ensure sustainable consumption and production patterns</p>	<p>12.2 By 2030, achieve the sustainable management and efficient use of natural resources</p> <p>12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle</p>	<p>The reduction in contamination may reduce waste, thus indicating the ability of the model to complement that part of the supply chain to reduce food waste and food losses along production and supply chains.</p>

Source:(United Nations, 2020)

From an economic aspect, the goal of preventing contamination may help fulfil Goal 3's target 3.9, which is to ensure healthy lives and encourage well-being, and the development of a reliable, and sustainable supply chain infrastructure will aid in economic growth. Additionally, HFSC is essential for achieving Goal 9's target 9.1 from an economic perspective. As more halal-certified firms enter the market, the demand for specialised halal cargo, handling, transportation, and storage services will increase. The development of an HFSC requires collaboration and coordination among multiple halal manufacturers. As a result, it helps the nation achieve its goal of being the global hub for halal food (Mageswari, 2019), which results in the achievement of aim 17.11. in line with the 12th Malaysian Plan. "In positioning Malaysia as a Global Halal Hub, the halal industry supply chain must be improved and the role of MSMEs will be enhanced to be a key driver for the development of the halal industry. High-performing MSMEs will be groomed as home-grown halal local champions. This will involve upscaling production capacity and product quality as well as promoting local brands to be on par with global brands in improving access to the international market. In addition, the capacity and capability of local companies will be strengthened to facilitate participation in the supply chain of MNCs"(Ministry of Finance Malaysia, 2020)

Accordingly, the social element of HFSC is demonstrated by the halal food manufacturer's responsibility to ensure that their product is free from contamination with haram and harmful substances. The halal certification holds guarantees the product's quality, and it reflects its compliance with the halal supply chain guideline. Accordingly, it aims to meet target 10.2: empower and promote the social, economic, and political inclusion of all irrespective of religion or status. Consequently, addressing the rising demand for halal products globally, not just from Muslim consumers but from people of all faiths.

The reduction in contamination rates may reduce waste, indicating the ability of the model to complement that part of the supply chain to meet the environment target 12.3, particularly by reducing food waste and food losses along the production and supply chains. By introducing HFSC, society will be more aware of the importance of having a sustainable lifestyle, this led to the achievement of target 12.8.

Conclusion

The sustainability in halal food supply chain management (HFSC) has garnered increasing attention and recognition from scholars, practitioners, and the public, especially regarding the ways and methods food is prepared, handle, distributed and delivered to consumers. The operations of halal food manufacturers must be controlled by several guidelines and rules that aim to ensure the halal integrity of food products. Halal food manufacturers need to implement sustainability initiatives within their companies as well as upstream and downstream supply chains. The operation of food supply chains must comprise an integration of economic, social, and environmental dimensions of sustainability. From an economic perspective, halal food manufactures are often strived to optimize the business process, maximize operational efficiencies, and try to control and minimization of costs throughout the entire supply chain. Environmental concerns are also important specifically when the food industry plays a significant role in the development of an environmentally sustainable food ecosystem. Additionally, the Environmental Management System (EMS) such as ISO 14000 is part of a comprehensive effort to reduce the environmental effects of the supply chain. From a social perspective, sustainability constitutes as a corporate social responsibility among supply chain partners towards stakeholders (customers, workers, suppliers, and community).

This paper aims to capitalise on the growing interest in HFSC by reviewing potential practises in Malaysia and aspires to contribute a roadmap in achieving the targets and indicators of the 2030 United nation (UN) Sustainable Development Goals (SDG). Some limitations cannot be overcome in this paper. This preliminary review is based on brief and limited insights from selected literature. The review is not comprehensive and may overlook several key pieces of research.

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