

The Implementation of Halal Supply Chain Management on Processed Meat Products in Yogyakarta

Fitri Eka Aliyanti¹, Luthfiana Kariim², Yudha Mauluddin³

^{1,2,3}Department of Islamic Economics, Universitas Islam Indonesia, Yogyakarta, Indonesia

Article Info

Article history:

Received 22 February 2022

Accepted 28 June 2022

Published 26 July 2022

JEL Classification Code:

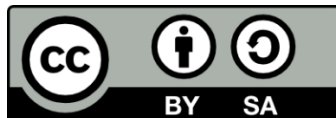
O44, L21, L23

Author's email:

fitrieka618@gmail.com

DOI :

[10.20885/jielariba.vol8.iss1.art2](https://doi.org/10.20885/jielariba.vol8.iss1.art2)



Abstract

The implementation of Law No. 33/2014 on Undang-Undang Jaminan Produk Halal (UUJPH) has become apparent with establishing Badan Penyelenggara Jaminan Produk Halal (BPJPH/Halal Products Certification Agency). The government plays a significant role in guaranteeing halal products for the community because Muslim consumers cannot validate massive credential halal products. In creating a halal product, it will undergo a process from raw materials to ready-to-consume products. There are eleven criteria for the Halal Assurance System in Indonesia, which become the guidelines for conducting halal product audits. One of them is the traceability aspect. It is the critical point in conducting studies on the halal supply chain. The research aims to explain the implementation of supply chain management in restaurants or stalls in Yogyakarta with halal certification from Majelis Ulama Indonesia (MUI/ Indonesian Ulema Council). It also analyses halal principles in supply chain management on processed meat products among restaurants or stalls in Yogyakarta. Also, it aims to identify problems among entrepreneurs of processed meat products in implementing halal supply chain management. The researchers implemented qualitative research with a descriptive analysis approach. The data were obtained from interviews and observations with entrepreneurs, slaughterhouse owners, and BPJPH. The researchers also conducted Focus Group Discussion (FGD) with the management of LPPOM MUI DIY. The two approaches are the data triangulation methods. Respondents were selected with the purposive sampling method. The data obtained were then analyzed with Atlas.ti software application. The results indicate that the entrepreneurs who have been halal certification highly likely apply halal principles in their business lines. Additionally, most entrepreneurs who run a halal business do not have any significant problem implementing halal supply chain management.

Keywords: Management, Supply Chain, Halal, Halal Products, Meat

INTRODUCTION

The establishment of Badan Penyelenggara Jaminan Produk Halal (BPJPH/Halal Products Certification Agency) puts a more precise direction on implementing Law No. 13/2014 on Halal Products Certification. In Article 4, the law mentions that products traded and distributed in Indonesia must have halal certification. It indicates a transition; halal certification is initially voluntary on 17 October 2019, mandatory even though the halal certification requirement for entrepreneurs will be implemented gradually.

One of the Halal Products Certification benefits is the increasingly visible role of the government in protecting Muslim consumers. The government needs to take part because Muslim consumers cannot validate massive credential halal products; therefore, halal products' certification and labeling are essential (Zulham, 2018). Moreover, it is known that consuming halal food products is an obligation for every Muslim.

The history of the halal industry is dated back to the 1980s. Around the time, lard in Indonesian food products spread and affected several factories that allegedly sold the products. The incident sparked the importance, especially for the government, to guarantee a degree of halal in food products to Muslim consumers. Thus, the need for halal certification for products in the Indonesian market is not only the government's demand and political issue but is also influenced by consumer demands for protection on the products they consume.

The label of "halal" on products that we consume is clearly stated in the Qur'an. Thus, it is crucial and needs careful consideration. Even in some verses, there is a connection between halal and faith. Halal consumption is an indicator of one's faith, as stated in Surah Al-Baqarah verse 173.

He has only forbidden to you dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah. But whoever is forced [by necessity], neither desiring [it] nor transgressing [its limit], there is no sin upon him. Indeed, Allah is Forgiving and Merciful.

Prophet Muhammad [PBUH] also provides a statement regarding clear boundaries between halal and haram. There is a third possibility, *syubhat*, which is considered lawfully unclear. He also advised his followers to avoid doubt because it is safer, as stated in the following hadith.

*Indeed, the lawful matter is straightforward, just as the unlawful one. Between the two, there is *syubhat* (lawfully unclear), which is vague for most people. Whoever abstains from this matter has saved his religion and honor. Whoever falls into *syubhat* tends to fall into haram matters (Hadith by Bukhari and Muslim).*

Yogyakarta Special Province is chosen for it has a total population of 3,645,487 people consisting of 92.8% Muslim. Thus, most of the population in the province is Muslim (DIY, 2019). Additionally, halal awareness of both consumers and producers in the province is also high. It can be observed from a program carried out by Lembaga Pengkajian Pangan Obat-obatan dan Kosmetika Majelis Ulama Indonesia (LPPOM MUI/Institute for the Study of Food Medicine and Cosmetics Indonesian Ulama Council) in Yogyakarta to issue halal product's producers in the

province every month. Also, up to November 2019, 1,101 products had received halal certificates from LPPOM MUI DIY (LPPOM MUI DIY, 2019). On the other hand, the residents of Yogyakarta Special Province also have a high awareness of halal products, which is mainly influenced by religious beliefs, the role of halal certification, exposure to information, and health reasons (Pramintasari & Fatmawati, 2017). These factors significantly influence a massive increase in halal product certification in Yogyakarta Special Province.

In creating a halal product, an item will undergo a process from raw materials to ready-to-eat products. There are eleven criteria in Sistem Jaminan Halal (SJH/Halal Assurance System) in Indonesia, which have been the guidelines for conducting audits on the halal product. One of the criteria is the traceability aspect. The process covers production from upstream to downstream; hence, it becomes the reason for the halal supply chain as an essential issue in this research. Unfortunately, the halal supply chain is still a confusing and multi-interpretable concept for entrepreneurs. Moreover, the halal supply chain increases costs related to associated factories (Omar & Jaafar, 2011). Thus, information regarding the halal supply chain needs to be further disseminated, especially among food product businesses.

Since 2019, several institutions take part in the halal product certification process, for instance, BPJPH (Halal Products Certification Agency), LPH (Halal Audit Agency), and MUI (Indonesian Ulema Council). Figure 1 illustrates the role of BPJPH in managing the halal certification supply chain. The role of the three institutions in developing halal certification in Indonesia can also be observed in Figure 1.

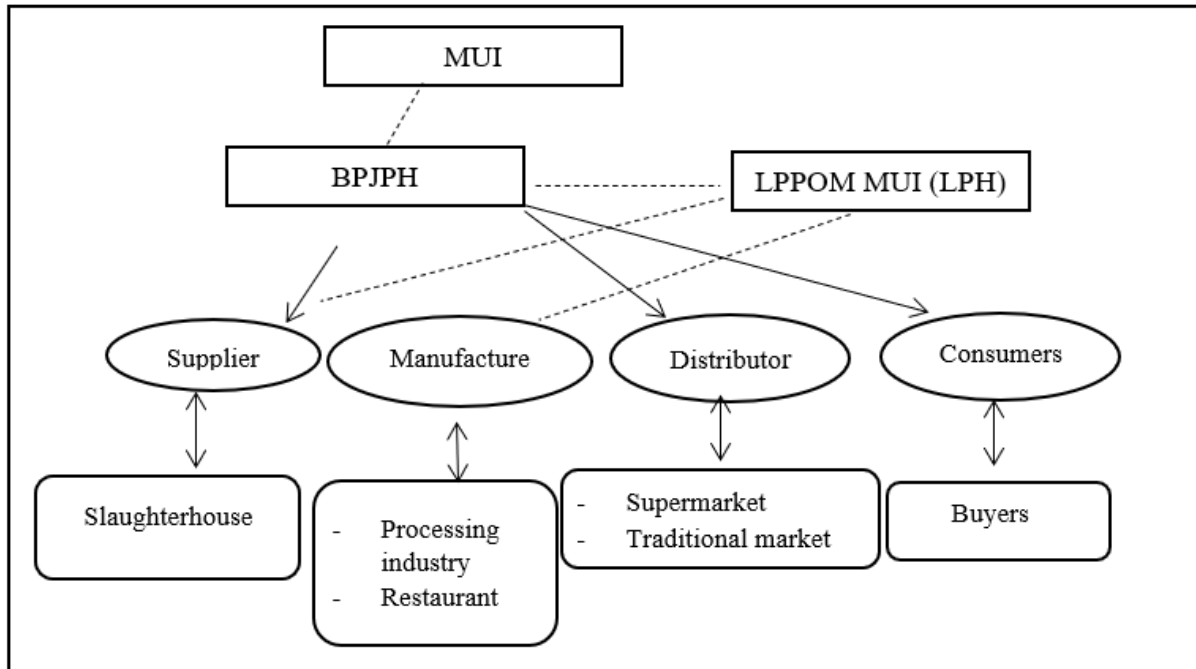


Figure 1. The Role of BPJPH on Halal Supply Chain in Indonesia

The research focuses on the implementation of halal supply chain management among processed meat products in Yogyakarta. First, it aims to explain the implementation of supply chain management in restaurants or stalls in Yogyakarta, especially in their processed meat products which have received MUI's halal certification. Second, it tries to analyze the application

of halal principles in the supply chain management of processed meat products among restaurants or stalls in Yogyakarta. Finally, it addresses the problems entrepreneurs of processed meat products found in implementing halal supply chain management.

The research also aims to contribute as a source of information, increase knowledge, and become material for advancing the halal industry in Indonesia. Secondly, it may assist BPJPH, which the government mandates to maintain the quality of halal products. Furthermore, the research can provide insight and considerations to policymakers in evaluating the implementation of Indonesia's halal product certification process. Next, it proposes to support the implementation of the law on Halal Product Guarantee. Later, the research results can also be adopted by BPJPH.

There is plenty of research on halal products, especially on food products. However, their quantity, quality, and content, especially those conducted in Indonesia, need improvement. Among seven halal industry sectors according to the State of Global Islamic Economy Report (SGIE), most of the research commonly discusses several sectors, such as food, finance, tourism, fashion, and cosmetics. In addition, research on halal supply chain management has been carried out; nonetheless, the researchers do not find any study mainly focused on halal supply chain management, primarily on processed meat products in Yogyakarta.

LITERATURE REVIEW

WHAT IS HALAL?

Religion is generally one of the most influential cultural forces that shape consumer behavior, food buying decisions, and eating habits specifically (Sherwani et al., 2018). The concept of halal is gaining more and more attention as the Islamic population grows around the world (Supian, 2018). The concepts of halal and haram cover all aspects of Muslim life, and it considers being a way of life. The word 'halal' refers to food, things, manners, and actions allowed by Allah for mankind and enjoined upon the believers of Islam. Its opposite, 'haram', refers to unlawful, prohibited or unacceptable. The halal food product plays an important role in the halal marketplace (Salindal, 2019).

Muslim must ensure that their food intake is halal. To ensure this, Muslims rely on halal food certification to directly inform them that the food is safe and its consumption is religiously permitted. (Ab Talib, 2017). When used in relation to meat, it is generally agreed within the Muslim community that for meat to be acceptable for consumption by Muslims, the animal must be a species that is accepted for Halal and slaughtered in accordance with requirements specified in the Quran and Hadith (Fuseini et al., 2017). In order for poultry and other non-pork products to be declared halal, several aspects need to be considered and implemented. In short, the animal must not be dead at the time of slaughter, it must be done by a experienced operator, the slaughter cuts a certain number of structures in the animal's throat without cutting the head and drains the animal's blood, and prayers must be said during the process (Thomas et al., 2017).

Due to the fact that not only Muslim consumed and prefer halal food products, the integrity of halal supply chain is crucial to ensure the halal status (Supian, 2018). From the economic

perspective, recent trends in the global halal industry show that halal food sector is one of the few rapidly growing product categories (Sherwani et al., 2018). Moving forward, the empirical evidence of recent studies suggest that business performance can be achieved through halal food certificate implementation (Ab Talib, 2017). In addition, an important paradigm shift in the modern business world is the shift of companies from a consumer-centric approach to a value-centric approach. Halal needs a supply chain approach that requires a complete alignment of the value chain and its supply chain to fulfil the promise of halal to its end consumers that the food they consume is a true manifestation of Islamic principles. Therefore, the integrity of the halal food supply chain is becoming an increasingly problematic issues (Tieman et al., 2012).

HALAL SUPPLY CHAIN MANAGEMENT

The supply chain has traditionally been interpreted as a static system, as a network of connected and interdependent organisations mutually and co-operatively working together or a system that consist of all parties involved, directly or indirectly, in fulfilling customer request (Wieland, 2021). Supply chains are evolving as technologies, companies, end-customers, and markets all change. However, with all these changes supply chain management is still relevant and important going forward (Min et al., 2019).

Supply chain management maintains upstream and downstream relationships with suppliers and consumers to deliver superior customer value at less cost to the whole chain (Behrenbeck et al., 2007). Some stakeholders in the supply chain share similar interests, such as suppliers, manufacturers, distribution, retail outlets, and consumers. Supply chain management is an integrated process starting from order delivery and its process, procurement of raw materials, order tracking, information dissemination, collaborative planning, performance measurement, after-sales service, and new product development. Therefore, the management can provide information system support to the managerial team regarding goods and services procurement. At the same time, it manages relationships between partners to sustain the factory's level of product and service availability (Anwar, 2011).

The Indonesian meat industry supply chain begins with feedlot and ends with meat consumption. The upstream part begins with the feedlot that produces cattle ready to be sent to a livestock wholesaler, followed by the slaughtering process at the slaughterhouse. Cattle are slaughtered and processed into meat before being distributed to wholesalers, retails, and meat processing units (Busyra & Ardi, 2020).

Halal supply chain management is halal network management aiming to extend halal integrity from a product's source to the consumer's purchase point. Ensuring a product is acceptably halal at the purchase point is essential to highlight halal supply chain management (Tieman et al., 2012). On the other hand, ensuring the integrity of the halal food supply chain will ensure the accomplishment of halal market. If consumers' trust on halal food is breached by the contamination of food products with haram sources, it might make negative sentiments among consumers and reduced confidence in the market (Vanany et al., 2020).

In the context of the supply chain, there are several aspects related to the supply chain that contaminate food, such as raw materials, raw materials in industry process, food storage, and

distributions (Busyra & Ardi, 2020). Three factors determine the basis of halal supply chain management, for instance, direct contact with forbidden substances, risk of contamination, and perceptions of Muslim consumers (Tieman, 2011). Risk of contamination or cross-contamination is a physical movement or transfer of harmful bacteria from a person, object, or place. In terms of halal principles, cross-contamination occurs when halal food products directly contact non-halal food products or non-food products during each supply chain stage (Yaacob et al., 2016).

Halal Assurance System in Indonesia has Standard Operating Procedures owned by a factory to achieve the factory's halal policy objectives. The procedures are made for all critical activities in the halal production process, such as Research and Development (R&D), Purchasing, Quality Assurance or Quality Control, Warehousing, Production, and Distribution. With variation in process technology or complexity level in each factory, the procedures may vary. Therefore, some key activities included in the standard operating procedures need to incorporate: (1) procedure in purchasing materials; (2) procedure for the use of new materials; and (3) procedure for replacement and addition of new suppliers (Mohamad Nadratuzzaman Hosen, 2008). In summary, the chain of Halal Assurance System administration systems is in Figure 2.

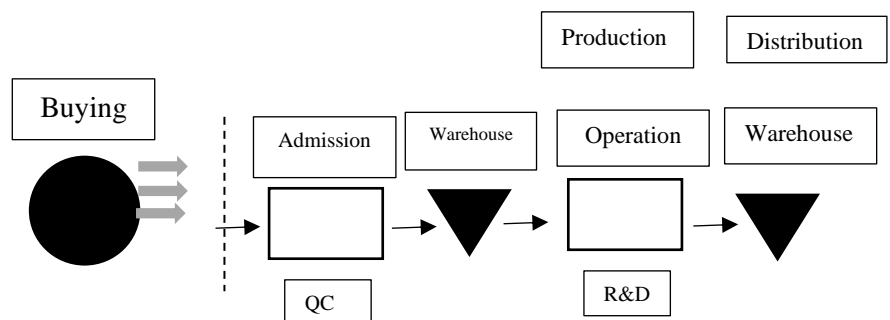


Figure 2. Administration System Chain in Halal Assurance System

There are eleven shades of food integrity in the halal supply chain, which can be categorized into four supply chain dimensions, related to raw materials, production, service, and the consumer. The halal supply chain requires mutual integrity and the cooperation of all actors involved. (Ali & Suleiman, 2018) Besides, as supply chains today are global, the use of a different local halal supply chain standard, especially logistic that is not aligned with the international halal logistics standard, would create inconsistencies in the supply chain by definition in halal transport, storage, and terminal handling practices, endangering the integrity of the entire halal supply chain. Therefore, in order to maintain the integrity of halal foods, local trade and retailers need to develop new halal standards to address halal requirements, recognized by halal processing, packaging, storage, and transportation of halal products (Supian, 2018).

RESEARCH METHODOLOGY

The research was an empirical study with a descriptive-analytical approach to explaining the implementation of halal supply chain management on processed meat products in Yogyakarta Special Province. The analysis was carried out on respondents' answers and Focus Group Discussion (FGD) results regarding implementing halal supply chain management conducted by the stakeholders. The research was carried out in a halal-certified meat product business unit in Yogyakarta Special Region. The subject was a factory on processed beef and

goat meat products with halal certification. In addition, other stakeholders took part in the study to test the data validity, such as LPPOM MUI DIY and some slaughterhouses in the province. Researchers used a sampling method based on the type of product, i.e., minced beef, meatballs, krecek, rambak (skin products), aqiqa packages, and jerky from all halal-certified meat product factories in Yogyakarta.

Data was collected by interviewing stakeholders related to the halal supply chain on processed meat products in Yogyakarta, especially business owners with halal certification from MUI. In addition, the researchers triangulated the data by interviewing the manager of LPPOM MUI DIY and some slaughterhouse owners in Yogyakarta. The researchers also observed business activity processes in each business location. The data were obtained by interview, observation, and Focus Group Discussion (FGD). Interviews conducted including:

1. The first interview was with business owners of processed meat products regarding the halal product certification process and performance indicators related to supply chain management. The interviewees needed halal certification from MUI. Thus, their products are halal-guaranteed, and the researchers could further analyze the halal supply chain of their products.
2. The second interview was with the slaughterhouse owners regarding performance indicators related to supply chain management that the owners had implemented.
3. Focus Group Discussion (FGD) on halal supply chain strategy used to triangulate the data and determine problem-solving strategies faced by the stakeholders related to the halal supply chain. It involved representatives from entrepreneurs, LPPOM MUI, and BPJPH.

Data analysis was primarily based on transcriptions as it explained the actual business situation, especially in the implementation of halal supply chains. The analysis technique referred to qualitative descriptive analysis and used Atlas.ti software application as the analysis tool.

RESULTS AND DISCUSSION

HALAL STANDARD IMPLEMENTATION IN FOOD INDUSTRY

Halal, in its terminology, comes from *al hillu*, which means *al ibaahatu* or something permitted according to sharia. Etymologically, halal is permitted by Islamic law to be carried out, used, or cultivated since it has been divided from the ties that limit or endanger a substance. It is accompanied by attention to obtaining the substance, not from prohibited muamalah results (Ali, 2016). The concept of halal and haram include all aspects of Muslim life. It is not merely on food consumption, but it also indicates a way of life (Salindal, 2019). Moreover, halal is not a purely religious issue. It is also an essential discussion in business and trade. Halal has become a global symbol of quality assurance and lifestyle choice (Lada et al., 2009).

Food is chosen in this research over another sectors because it is an essential factor commonly discussed in various ethnic and social, and religious groups—human beings are concerned about what they eat. For example, Muslims want halal food, and Jews want kosher food. Additionally, Hindus, Buddhists, and other groups believe that vegetarian food is a portion

of good food. Out of various kinds of food, meat is treated variedly and strictly in these groups (Riaz & Chaudry, 2003). Different religious groups prohibit certain food to be consumed due to their religious belief and identity (Supian, 2018).

According to State of Global Islamic Report (SGIE), The halal food industry continues to show promise despite industry players being severely impacted by the COVID-19 pandemic. Muslim spend on food increased by 3.1% in 2019 from \$1.13 trillion to \$1.17 trillion, and is expected to drop slightly in 2020, before going to reach \$1.38 trillion in 2024 at a 5-year CAGR of 3.5%. The halal food industry is taking steps to optimize supply chains. Governments and stakeholders are also taking steps to strengthen the industry. Stakeholders have recognized the need to improve halal-industry education, and banks are supporting the growth of the halal food industry (State of the Global Islamic Economy, 2021).

It is important for producers and manufacturers to recognize that the main motive for the observance of the Islamic beliefs is to obey God's command. Food must not only be halal or permissible, but also *tayyib*, which means safe, healthy, nutritious, and had a good quality (Aghwan, 2019). The concept of halal, especially on food, commonly covers the 'from farm to fork' concept. In general, it should be nutritious and processed from halal ingredients, with attention to cleanliness (Lada et al., 2009). Nevertheless, with the raising concern on health, a halal food business today is not exclusively for the Muslim consumers for it is also being sought by the non-Muslim consumers (Supian, 2018).

HALAL FOOD INDUSTRY IN INDONESIA

Muslims can be found all over the world, any country in which Muslims make up 50% or more of the population is considered a Muslim majority country. Indonesia is the country with the largest number of Muslims overall, which is home to an estimated 231 million Muslims. This is 86.7% of the Indonesian population and nearly 13% of the world's total population of Muslims (worldpopulationreview.com, 2022) There is Majelis Ulama Indonesia (MUI/Indonesian Ulama Council) as a forum for deliberation of Muslim scholars, *Zu'ama*, and intellectuals in Indonesia to guide, foster, and protect Muslims throughout Indonesia (MUI, 2021b)

According to fatwa MUI, meat and animal derivatives are critical ingredients in the halal industry, especially food products. Critical points in the animal slaughtering process are (Hosen, 2008):

1. The slaughterer must be a devout Muslim who carries out sharia daily.
2. It is prohibited to stun or to cause the animal to die before being slaughtered.
3. The tools or knife must be sharp.
4. The animal must completely die before being processed, and its blood must also pour out completely.

For imported meat, LPPOM MUI, as the first Halal Inspection Agency in Indonesia, provides the following requirements (Hosen, 2008):

1. The meat must have a halal certificate from the institution(s) acknowledged by LPPOM MUI.

2. It must have shipping and related documents.
3. The halal certificate and the documents should match.
4. The documents and physical condition of the meat (packaging, label, etc.) should match.
5. Lot number, plant number, slaughter date, etc., should match one another.

Halal food products play an essential role in the halal product market; also, it connects several sectors in the halal industry. Today, a growing number of businesses choose to provide halal certification services on their products as a strategy to enter the market. The existence of halal certification is an effective and significant marketing strategy in increasing customer loyalty. It also improves an organization's image and reputation. Besides, the certification can also increase profits and improves consumer confidence in purchasing decisions. As a result, products with halal logos are readily accepted by Muslims and non-Muslim consumers (Salindal, 2019).

In Articles 22 and 23 of Law on Halal Product Assurance, in terms of the Proses Produksi Halal (PPH/Halal Production Process), site, size, and equipment should meet several requirements. First, the halal product needs a separate site and equipment for slaughtering, processing, storing, packaging, distributing, selling, and displaying non-halal products. Second, Halal Production Process maintains cleanliness and hygiene. Third, it is free from najis (excrement). Finally, the process is free from non-halal ingredients. Entrepreneurs who cannot separate the required site and equipment for the Halal Production Process are subject to administrative consents in a written warning and administrative fine (UUJPH, 2014).

HALAL SUPPLY CHAIN MANAGEMENT IN MEAT PRODUCTS

Processed meat products are essential to be studied because the meat is one of the primary protein sources in food consumption. Additionally, meat consumption is rich in meaning because of its association with eating habits, culture, and rituals in a particular society. Halal meat-based food products consist of beef, mutton, and poultry. The products can be fresh, chilled, frozen, or processed. For Muslims, the decision to buy halal meat is commonly based on information provided by butchers and slaughterhouses, especially on aspects of method, freshness, taste, and cleanliness. It is chiefly under the halal meat processing industry and halal certification authority to maintain the integrity of halal status throughout the supply chain process. Therefore, stakeholders in the halal meat-based industry need extensive knowledge of requirements according to Islamic Law. They should also understand halal meat production's safety and quality aspects in halal meat's supply chain (Yaacob et al., 2016).

The typical characteristic of the halal supply chain process is to avoid cross-contamination risk of food products throughout the process (Maman et al., 2018) Cross-contamination of halal and non-halal food can be looked at two different perspectives. First, cross-contamination happens during mixing of non-halal ingredients in the halal food production, it includes substitutions of non-halal meat and the usage of prohibited ingredients. Second, cross-contamination happens when putting halal and non-halal food together either in the same storage container, transport, or retail shelf, especially if there is no proper packaging. (Supian, 2018).

Cross-contamination may occur along the halal supply chain process, therefore, processed meat production must strictly adhere to UUJPH and general guidelines from the Halal Assurance System of LPPOM MUI. Farms and slaughterhouses must comply with instructions and requirements mentioned in the laws and guidelines. During transportation and storage, processed meat products must also be separated from non-halal items to prevent cross-contamination. Details in the framework of the halal supply chain for processed meat products are in Figure 3.

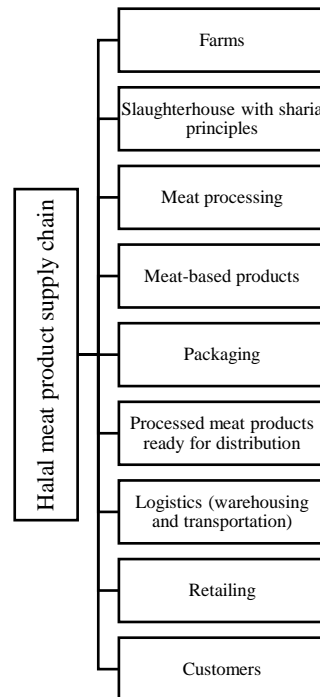


Figure 3. The framework of the halal supply chain for processed meat products (Yaacob et al., 2016)

Obtaining a halal certificate from a Halal Certification Agency is the first step in implementing a halal supply chain. In Indonesia, a halal certificate is valid for four years from the issuance date unless there is a change in the composition of the product's ingredients. BPJPH will cooperate with ministries and related institutions in supervising and implementing regulations for guaranteeing halal products (UUJPH, 2014). According to article 25, 38, and 39 in the Law of Halal Product Guarantee, entrepreneurs who have obtained halal certificates are required to:

1. Include halal labels on products with halal certificates, for instance, on the product packaging or a particular part or place on the product. Labels included should be easy to see, read, and well-attach.
2. Maintain the degree of halal on products with halal certificates.
3. Separate the location and equipment for slaughtering, processing, storing, packaging, distribution, sale, and display between halal and non-halal products.
4. Renew expired halal certificate immediately.
5. Report any changes in materials' composition to BPJPH.

The research was conducted to observe the supply chain in halal-certified processed meat products in Yogyakarta Special Province. The researchers interviewed several stakeholders with the purposive sampling method. The respondents were business owners, slaughterhouses, LPPOM MUI DIY, and BPJPH representatives. There are several criteria in selecting the business owners as respondents, such as:

- a. Producing processed meat products with halal certification.
- b. Representing certain types of processed meat products.

In addition, the selected slaughterhouse samples need to have halal certification. Table 1 provides detailed information on entrepreneurs and slaughterhouses that participated in the research.

Table 1. The Profile of Business Owners and Slaughterhouses

Profile		Frequency	Percentage (%)
Role/position	Owner	3	42
	Employee	2	29
	Slaughterhouses	2	29
Length of work	<1 year	-	-
	>1 year	7	100
Length of business	<1 year	-	-
	>1 year	7	100
Halal Assurance System	Provided	7	100
	Not provided	-	-
Halal certified	<1 year	-	-
	>1 year	7	100

LPPOM MUI AND BPJPH: HALAL PRODUCT ASSURANCE INSTITUTIONS

LPPOM MUI was established on 6 January 1989 to conduct halal inspection and certification. The institution was established after a case of lard usage in 1988. LPPOM MUI currently cooperates with the National Food and Drug Agency (BPOM), Ministry of Religious Affairs, Ministry of Agriculture, Ministry of Cooperatives and SMEs, Ministry of Trade, Ministry of Industry, Ministry of Maritime Affairs and Fisheries, Ministry of Tourism, and Creative Economy, and universities in Indonesia. At present, there are thirty-four LPPOM MUI offices across Indonesia (MUI, 2021a).

The Ministry of Religious Affairs is responsible for guaranteeing halal products according to Law No. 33/2014 on Halal Products Guarantee and Government Regulation No. 31/2019 on the law's implementation (SK BPJPH Nomor 12 Tahun 2020, 2020). BPJPH is established under the Ministry of Religious Affairs to ensure the degree of halal in a product traded in Indonesia (BPJPH, 2021).

BPJPH cooperates with several ministries and institutions, MUI, and Lembaga Pemeriksa Halal (LPH/Halal Audit Agency), to implement a halal product guarantee in Indonesia. The

guarantee provides safety and certainty on the availability of halal products in society. On the other hand, it can increase added value among business owners to produce and sell halal products. Small-scale and micro-businesses occupy a large portion of the Indonesian economy structure. The development and improvement of product quality in the sectors have potential leverage in the halal value chain. Therefore, BPJPH needs to pay attention to and supports halal certification for the sectors by developing halal certification administrations for business owners, especially to small, medium, and micro enterprises (SK BPJPH No. 12/2020, 2020). In fact, since its inauguration in 2020, BPJPH requires time to oversee the development of the halal industry in Indonesia. Recently, BPJPH only operates at a central level. Regional Halal Certification Service Task Force tackles halal certification services in some provinces

ANALYSIS ON THE IMPLEMENTATION OF HALAL PRINCIPLES IN SUPPLY CHAIN MANAGEMENT IN RESTAURANT/STALLS

In attaining halal certification for their products, meat product factories in Yogyakarta need to complete some stages, as shown in Figure 4.

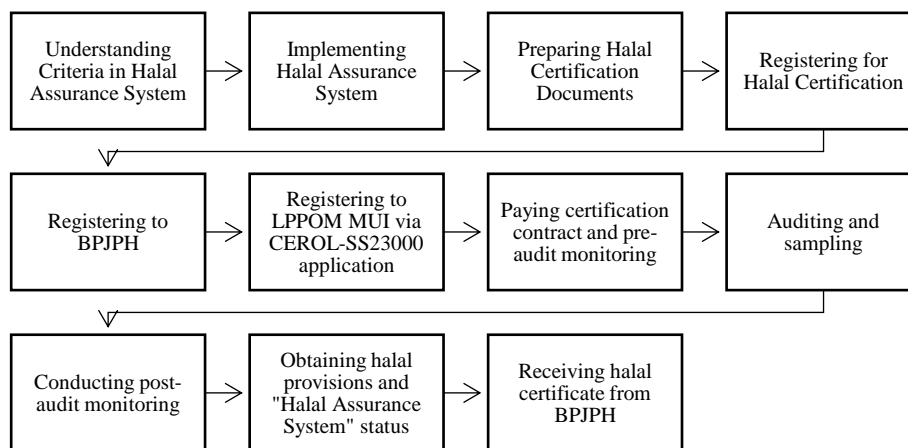


Figure 4. Stages in Attaining Halal Certification

(taken from <http://www.halalmui.org/mui14/main/page/prosedur-sertifikasi-halal-mui>)

Based on the interview results, halal policies established by business owners in their business activities cover:

- a. Separating halal products from non-halal ones to avoid doubt.
- b. Forming policy regarding materials, tools, and production processes to meet the halal standards of lppom mui.
- c. Creating alignment with the production team to maintain halal standards starting from the production process.
- d. Was putting a highlight on slaughtering, meat processing stages, and ingredients preparation with halal standards.
- e. A business partner who needs to pay attention to halal guarantees on all used ingredients.
- f. Keeping cows in slaughterhouses clean before they are slaughtered; the slaughterhouse also provides separate skin, meat, and dirt places. Waste is managed into the waste center. Additionally, the cow must have been purchased in cash. Therefore, the slaughterer's

clothes need to be considered its cleanliness. Also, the slaughterhouse environment needs to be regularly kept clean.

Regarding the halal guarantee on their products, the business owners agree that the halal certificate and halal logo from MUI are adequate proofs. Similarly, the slaughterhouse owners provide printed copies of halal to their consumers or signing the halal logo on their banners. In addition, employees understand halal policies used in the factories. Technical training and personnel development to support Halal Assurance System are:

- a. Considering the personnel's religion. If the employees are muslims, they need to take part in regular meetings or evaluations once a week and quran recitations twice a week. The halal training lasts 1-3 days.
- b. Pointing out to the personnel that halal management training is essential to understand factories' vision and mission.
- c. Providing training for the kitchen to handle food hygienically, for example, clothes, hand hygiene, gloves, masks, head coverings, aprons, and others.
- d. Conducting the training at the beginning of recruitment to understand the production process's standard operational procedure (sop).
- e. Emphasizing on supervision process on halal management.
- f. Monitoring daily when the owner is within the restaurant's area.
- g. Providing a verbal and written briefing on equitable halal production methods, which is in line with the local health office and lppom mui.
- h. Providing sufficient explanation to employees on audits and updated policies from MUI.

One of the slaughterhouses does not hold regular training for employees; however, employees are informed about slaughtering procedures and processes which meet sharia requirements. Halal Assurance System in Indonesia requires standard operating procedures for all critical activities in the halal production process, such as research and development, purchase, quality assurance/quality control, warehousing, production, and distribution. The implementation of halal supply chain management for processed meat products among halal-certified restaurants or stalls in Yogyakarta are:

- a. Purchasing process

Materials needed for the production process are only products with halal certification and avoid the unlikely source. Meat is only from halal-certified slaughterhouses. Therefore, it is essential that the products' vendors already have halal certificates. Restaurants or stalls have more options for products, like spices and vegetables that are halal certified. Some entrepreneurs commonly have suppliers or partners; however, some can purchase the products in traditional markets. For slaughterhouses, cattle primarily come from livestock. They are weighed on the spot before being purchased. Some slaughterhouses purchase the cattle from local farmers. The meat products are bought according to their carcass scales, i.e., slaughtered and sold without head, skin, legs, and innards.

- b. Admittance process

Admitting in production materials can either be delivered or picked up. When supply is ample, the materials will likely be delivered by the supplier and vice versa. Meanwhile, most of the factories rely on delivery services from suppliers. Shipping is a safer option to avoid cross-contamination. For example, meat sent using a particular meat container will be delivered safely in special packaging; thus, the factories will receive the meat in good condition. Next, the production materials deposit into the production department. Later they will be distributed to the restaurants or stalls.

c. Production

Seasoning is processed separately. Therefore, factories need to guarantee a good and hygienic production process, such as starting the process with prayer, keeping the required materials clean, and avoiding contamination. When the materials get exposed to najis (excrement, dirt), it is no longer halal and inappropriate for consumption. In the slaughterhouse, meat is processed per MUI's halal standard and procedure. After being slaughtered, factories will pack the meat as ordered. Cutting finishes at 4 am, and consumers (including hotel or restaurant) can start buying the meat at 6 am.

Meatball factory has different machines for meatball makers, noodle makers, and grinder. Meat used in the beef jerky factory comes shredded from the slaughterhouse. Additionally, the shredded meat is marinated or covered with spices and left overnight. The next day, the meat is molded and goes into the drying process. Here, the factory uses a food dehydrator to reduce water in the marination. The dehydrator is a semi oven, with a lower temperature (compared to a typical oven), around 65-80 degrees Celsius. The process aims to avoid fungi and other contaminants. Followingly, the jerky is vacuumed to increase its durability and packed in a pouch. Finally, the jerky is boxed and shielded.

Krecek and rambak factory put the meat in a can made by Lembaga Ilmu Pengetahuan Indonesia (LIPI/The Indonesian Institute of Sciences). A canned product can achieve a BPOM license under some requirements, for instance, the product has been tested, and the result is submitted to LIPI.

d. Warehousing

Slaughterhouses store fresh meat in the freezer for a day, and it should be entirely sold. However, processed meat can still be stored in the freezer for up to one year. The validity period for krecek is about nine months, according to LIPI's test. Packed beef jerky will be stored on the provided shelves.

Additionally, it can be stored at room temperature for more than six months since it has been dried and vacuumed. Finally, the catering provider, which product aims for direct consumption, will send its product directly to consumers. The production process is adjusted to the delivery time; therefore, it is still warm and fresh.

e. Distribution

Slaughterhouse products wrap in plastic, weigh and deliver to consumers in motorized vehicles. Meat sold in-store will be hung from 5-10 am (five hours) and put back

into the freezer. Meatballs wrap in non-recycled plastic bowls. Krecek is traded in the owner's restaurants, online shops, and resellers. Jerky is distributed to offline stores, such as gift shops or airports. The jerky is also available in the marketplace and social media and delivers to consumers in packages. In general, jerky factories ship its product in motorized vehicles. Catering products are put into plastic wrappers and rice boxes. Finally, the products are ready to serve and distributed to consumers by motorized vehicles.

f. Non-consumable products

When the products do not meet standard operating procedure, several actions will be taken, such as:

1. Production material will not be reused.
2. When an error occurs in the round unit (500 cans) of canned krecek, the factory will randomly select the products, and all of them will be withdrawn from circulation.
3. The beef jerky which does not meet quality standards will be sorted separately. Non-consumable jerky will be damaged, and consumable jerky will be reprocessed. The reprocessed product can be rice bowls or other cuisines.
4. Non-consumable products in the catering provider will be returned. However, it is improbable any catering product that does not meet standards.
5. Non-consumable product in the slaughterhouse is commonly beef liver. Therefore, the slaughterhouse owner immediately discards it.
6. Waste management

Some factories treat their wastes as:

1. Leftovers will be collected to feed fish.
2. The garbage collector will immediately gather plastic wrappers.
3. The particular waste will go to a personal disposal site.
4. Leftover from krecek containers (i.e., plastic or oil) will be incinerated.
5. Production equipment (i.e., gloves and used headcover) will be disposed in a non-organic bin. Residual spice waste will be disposed to the organic bin.
6. Waste in catering providers, like, ribs, can be used for cooking and consumption. Nevertheless, other bones are under the care of the slaughterhouse.
7. Waste in the slaughterhouse will be taken to the waste center.

PROBLEMS AMONG ENTREPRENEURS OF PROCESSED MEAT PRODUCT IN IMPLEMENTING HALAL SUPPLY CHAIN MANAGEMENT

Most entrepreneurs mention no significant problems implementing halal supply chain management in their businesses from the interviews and Focus Group Discussions results. Some mention that the halal criteria are clear and passed the LPPOM MUI's audit. Having halal supply chain management has saved the entrepreneurs from the unfair business competition.

However, some entrepreneurs mention problems in implementing halal supply chain management. First, sometimes, additional ingredients that are halal-certified no longer available in the market. Second, related to the mechanism for obtaining a permit halal label or logo, the

respondents require prior permission from BPOM with a separate procedure. Therefore, it suggests overlapping in the administrative system. Third, it causes inefficiency in the factory's management processes. Next, the validity period of the halal certificate is considered too short (two years). The entrepreneurs hope that the validity period is extended, like the Health Office permit for five years. Fourth, the management's costs burden the MSMEs.

CONCLUSIONS

Halal certification has become mandatory in Indonesia. The Indonesian government's role in managing halal certificates is unique. Entrepreneurs' satisfaction with the halal certification service depends on the credibility of a halal auditor. Therefore, the halal audit is mandatory for an entrepreneur to progress. In Indonesia, MUI, LPPOM MUI, and BPJPH are three institutions that highly influence the progress of the halal industry in the future. The results indicate that the entrepreneurs who have been halal certification highly likely apply halal principles in their business lines. Therefore, it is following the criteria of the Halal Assurance System made by MUI. All key halal production processes are research and development, purchasing, quality assurance or quality control, warehousing, production, and distribution. Therefore, these processes have met halal assurance criteria.

Additionally, most entrepreneurs who run a halal business do not have any significant problem implementing halal supply chain management. Nevertheless, some problems still occur in the unavailability of additional ingredients with halal certification. The mechanism for obtaining a permit from BPOM for halal labels or logos suggests overlapping in the administrative system. The validity period of the halal certificate is considered too short, and the high management costs burden the MSMEs.

According to this research, it can be concluded that the majority of meat-processed food business actors in Yogyakarta have implemented halal supply chains in their business management. In addition, valuable input was obtained for all stakeholders in the halal certification process. In terms of prolonged services or procedures, policy makers should pay attention to solutions; thus, stakeholders can accomplish the same mission to support the halal food product guarantee program. The hope is that the halal industry, especially the Indonesian halal food sector, will be more advanced and play a role in the world's halal industry.

ACKNOWLEDGEMENTS

The paper and the research behind it would have not have been possible without the support of the Directorate of Research and Community Service (DPPM), Universitas Islam Indonesia. The researchers would like to thank DPPM for providing the financial support to conduct this research as stated in the Research Agreement Number 010/Dir/DPPM/70/Pen.Pemula/III/2020 so that this research can be completed properly.

REFERENCE

Ab Talib, M. S. (2017). Motivations and benefits of halal food safety certification. *Journal of Islamic Marketing*, 8(4), 605–624. <https://doi.org/10.1108/JIMA-08-2015-0063>

- Aghwan, Z. A. A. (2018, August). Awareness and demand for halal and tayyib meat products supply chain. In Proceeding of the 3rd International Seminar on Halalan Thayyiban Products and Services (pp. 52-8). <https://www.researchgate.net/publication/327386537>
- Ali, M. (2016). Konsep makanan halal dalam tinjauan syariah dan tanggung jawab produk atas produsen industri halal. *AHKAM: Jurnal Ilmu Syariah*, 16(2), 291-306. <https://journal.uinjkt.ac.id/index.php/ahkam/article/view/4459/0>
- Ali, M. H., & Suleiman, N. (2018). Eleven shades of food integrity: A halal supply chain perspective. *Trends in Food Science and Technology*, 71(December 2017), 216–224. <https://doi.org/10.1016/j.tifs.2017.11.016>
- Anwar, S. (2011). Manajemen Rantai Pasokan (Supply Chain Management) : Konsep Dan Hakikat. *Jurnal Dinamika Informatika*, 3(2), 92–98. <https://doi.org/10.35315/informatika.v3i2.1315>
- Behrenbeck, K., Thonemann, U., & Merschmann, U. (2007). Soft secrets of supply chain success. *International Commerce Review--ECR Journal*, 7(2). <https://www.researchgate.net/publication/225669467>
- BPJPH. (2021). BPJPH. <http://www.halal.go.id/profil/pengantar>
- Busyra, S. H. I., & Ardi, R. (2020, June). A preliminary findings of risk categories in halal supply chain in Indonesia: Upstream level of meat industry. In *Proceedings of the 3rd Asia Pacific Conference on Research in Industrial and Systems Engineering 2020* (pp. 260-265). <https://doi.org/10.1145/3400934.3400982>
- Fuseini, A., Wotton, S. B., Knowles, T. G., & Hadley, P. J. (2017). Halal Meat Fraud and Safety Issues in the UK: a Review in the Context of the European Union. *Food Ethics*, 1(2), 127–142. <https://doi.org/10.1007/s41055-017-0009-1>
- Hosen, M, N. (2008). Panduan Umum Sistem Jaminan Halal LPPOM – Mui. Lembaga Pengkajian Pangan Obat-Obatan Dan Kosmetika, MAJELIS ULAMA INDONESIA, 1–36.
- Lada, S., Harvey T, G., & Amin, H. (2009). Predicting intention to choose halal products using theory of reasoned action. *International Journal of Islamic and Middle Eastern Finance and Management*, 2(1), 66–76. <https://doi.org/10.1108/17538390910946276>
- LPPOM MUI DIY. (2019). Daftar Produk Bersertifikat Halal (Issue November).
- Maman, U., Mahbubi, A., & Jie, F. (2018). Halal risk mitigation in the Australian–Indonesian red meat supply chain. *Journal of Islamic Marketing*, 9(1), 60–79. <https://doi.org/10.1108/JIMA-12-2015-0095>
- Min, S., Zacharia, Z. G., & Smith, C. D. (2019). Defining Supply Chain Management: In the Past, Present, and Future. *Journal of Business Logistics*, 40(1), 44–55. <https://doi.org/10.1111/jbl.12201>
- MUI, L. (2021a). [halalmui.org. https://www.halalmui.org/mui14/](https://www.halalmui.org/mui14/)
- MUI, L. (2021b). [mui.or.id. https://mui.or.id/sejarah-mui/](https://mui.or.id/sejarah-mui/)
- Omar, E. N., & Jaafar, H. S. (2011, September). Halal supply chain in the food industry-A conceptual model. In *2011 IEEE Symposium on Business, Engineering and Industrial Applications (ISBEIA)* (pp.384-389). IEEE. <https://doi.org/10.1109/ISBEIA.2011.6088842>.

- Pramintasari, T. R., & Fatmawati, I. (2017). Pengaruh Keyakinan Religius, Peran Sertifikasi Halal, Paparan Informasi, dan Alasan Kesehatan Terhadap Kesadaran Masyarakat Pada Produk Makanan Halal. *Jurnal Manajemen Bisnis*, 8(1), 734–766. <https://journal.umy.ac.id/index.php/mb/article/view/3922>
- Riaz, M. N., & Chaudry, M. M. (2003). *Halal food production*. CRC press.
- Salindal, N. A. (2019). Halal certification compliance and its effects on companies' innovative and market performance. *Journal of Islamic Marketing*, 10(2), 589–605. <https://doi.org/10.1108/JIMA-04-2018-0080>
- Sherwani, M., Ali, A., Ali, A., Hussain, S., & Zadrán, H. G. (2018). Determinants of muslim consumers' Halal meat consumption: applying and extending the theory of planned behavior. *Journal of Food Products Marketing*, 24(8), 960–981. <https://doi.org/10.1080/10454446.2018.1450173>
- State of the Global Islamic Economy. (2021). *State of the Global Islamic Economy Report 2020/2021*. Dubai International Financial Centre, 112. <https://haladinar.io/hdn/doc/report2018.pdf>
- Supian, K. (2018). Cross-contamination in processing, packaging, storage, and transport in halal supply chain. In *Preparation and Processing of Religious and Cultural Foods (Issue 2014)*. Elsevier Ltd. <https://doi.org/10.1016/B978-0-08-101892-7.00016-X>
- Thomas, A. M., White, G. R. T., Plant, E., & Zhou, P. (2017). Challenges and practices in Halal meat preparation: a case study investigation of a UK slaughterhouse. *Total Quality Management and Business Excellence*, 28(1–2), 12–31. <https://doi.org/10.1080/14783363.2015.1044892>
- Tieman, M., Van der Vorst, J. G., & Ghazali, M. C. (2012). Principles in halal supply chain management. *Journal of Islamic Marketing*. 3(3), 217–243. <https://doi.org/10.1108/17590831211259727>
- Tieman, M. (2011). The application of Halal in supply chain management: In-depth interviews. *Journal of Islamic Marketing*, 2(2), 186–195. <https://doi.org/10.1108/17590831111139893>
- UUJPH. (2014). Undang – Undang Republik Indonesia U No. 33 Tahun 2014 tentang Jaminan Produk Halal. *Igarss 2014*, 1, 1–5.
- Vanany, I., Soon, J. M., Maryani, A., & Wibawa, B. M. (2020). Determinants of halal-food consumption in Indonesia. *Journal of Islamic Marketing*, 11(2), 516–530. <https://doi.org/10.1108/JIMA-09-2018-0177>
- Wieland, A. (2021). Dancing the Supply Chain: Toward Transformative Supply Chain Management. *Journal of Supply Chain Management*, 57(1), 58–73. <https://doi.org/10.1111/jscm.12248>
- Yaacob, T. Z., Suzana Jaafar, H., & Rahman, F. A. (2016). A Review of Regulatory Framework for Halal Meat Supply Chain: The Case of Halal Meat Based Food Products in Malaysia. *J. Appl. Environ. Biol. Sci*, 6(9S), 14–21. <https://www.researchgate.net/publication/350853822>
- Zulham. (2018). Peran Negara dalam Perlindungan Konsumen Muslim. *Kencana*.