

## INDONESIAN FOOD INDUSTRY ON HALAL SUPPLY CHAINS

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### ABSTRACT

Halal food industry is one of the potential economic sectors. This industry is experiencing a rapid global development. Indonesia is a country with the most Muslim population in the world. In addition, this country also has various potentials great in developing the halal food industry on the global scene. However, various existing problems and forms of regulation make Indonesia still unable to compete with other countries. Therefore, this review tries to explore various opportunities and the challenges of the halal food industry at Indonesian, especially in terms of the halal supply chain at industrial revolution 4.0. The method used is library research using a variety of secondary sources as research material.

**Keywords:** Food industry, halal supply chains

### INTRODUCTION

Guarantees and safety regarding halal food products are carried out in accordance with the principles of protection, justice, legal certainty, accountability and transparency, effectiveness and efficiency, and professionalism. Guaranteed implementation of halal food products aims to provide comfort, security, safety, and the certainty of the availability of halal products for the public in consuming and using halal products, as well as increasing added value for businesses in producing and selling halal products.

The Halal food product guarantee becomes important considering the progress of science and technology in the fast developing food sector. This significantly affects the shift in processing and utilization of raw materials for food, beverages and other products from what was originally simple and natural to the processing and utilization of raw materials resulting from scientific engineering. Product processing with the use of advances in science and technology allows a mixture of halal and unlawful whether intentional or unintentional.

Therefore, to find out the halal of a product, a special study is needed that requires multidisciplinary knowledge, such as

knowledge in the fields of food, chemistry, biochemistry, industrial engineering, biology, pharmacy and understanding of sharia.

As one of the countries, Indonesia is a country with the largest Muslim population in the world. Based on data from the Central Statistics Agency (BPS), the total population of Indonesia reaches 237.6 million, with a Muslim population reaching 207 people or around 87 percent. With the largest Muslim population in the world, Indonesia has a large market potential for the global halal industry. One of the efforts made by the state to realize the welfare state as a form of the rule of law is to pay attention to the interests of the community.

Especially those who have a Muslim population in this case is Indonesia which has the largest Muslim population in the world in carrying out state life, where the Republic of Indonesia has different characteristics from other countries. Living in Indonesia is heavily influenced by actualized dogma-Islam in public life, without prejudice to the interests of non-Muslim communities.

The achievement of safe food provision has the aim of avoiding people from material that is detrimental to health. Indonesia is as an

archipelagic country which has a large population with a variety of levels of development and food patterns, in this case the role of the government to ensure food security for the people must be very large and it cannot fully rely on free market mechanisms. In this regard, government policy is needed that is adjusted to the objective conditions, and if necessary direct intervention can be done to ensure the achievement of adequate food supply, safety and affordable purchasing power of the community. Products from the halal food industry are the main and most recognized components of the halal industry (Zulfakar et al., 2014).

On the other hand, in the halal industry, there are other challenges, especially in the halal food industry where the behavior of consuming halal food is not necessarily in line with the large Muslim population. Although the appeal of the halal market segment and its potential for growth is so rapid, but research into the consumption of halal food in the Muslim market segment has more or less been ignored (Muhammad et al., 2014).

Food safety is a problem that many developing countries face, including Indonesia. This is usually due to germ contamination and chemical contamination as well as various toxic substances in the food consumed. While it has high nutrition, delicious taste and attractive appearance, but if it's not healthy, the food has no benefit. In this case, the community needs to get adequate protection against the safety of food consumed by improving the quality and health of domestic food, in addition to being able to enhance a positive image for international trade.

Often, the interpretation of halal is largely in the food producers (Alhabshi, 2013). Food intake into a human being is passed down from one generation to another, which supplies a lot of nutrients for humans to survive (Mat Isa & Ismail, 2015). However, in recent years, halal food consumers have increasingly worried about the authenticity of the food they eat (Lubis et al., 2016). The state of the product *halalan thayyiban* can only be achieved if all the possible contamination of illicit and dangerous products can be avoided not only in production but also during the process of the supply chain took place.

Considering halalness is very important for Muslims for their type and food choices, a lot of research on halal has grown significantly in recent years (Yasid et al., 2015). Food is a basic need for human survival, so everyone needs to be guaranteed to get quality and safe food.

Food that is not produced properly and can be a source of microorganisms and chemical contaminants that can be dangerous and cause disease to humans. Cases of food poisoning should not need to occur if food products are processed with the correct processing procedures from upstream to downstream. The halal supply chain is now an emerging business that has attracted global attention (Noorsiah et al., 2015). The application of technology in the halal supply chain, especially in halal products is very important for halal control especially on location, tracking, item identification and data communication. Risk factors for traceability in food products contribute to the risk of contamination of food products during shipping (Yacoob, 2016).

Until now, many efforts have been made to improve food sanitation and hygiene, generally through improving the health quality of food processing facilities. The effort is not easy to do because essentially the food consumed by humans includes a very large amount and type and is produced by an increasing number of processing plants. This problem is an increasingly complex problem and is a challenge that must be faced in the future, because on the one hand the community will be more sensitive to demands for getting better quality food.

At a time when the development of science and technology related to food was not yet advanced, one could easily distinguish between halal food and haram food. In the conditions in the Industrial Revolution 4.0 era like today, differentiating halal or haram food is not an easy matter. This is related to the rapid development of science and technology in the field of food, where food no longer consists of raw materials only, but there are additional ingredients that are likely to come from prohibited foods and their derivatives.

Industrial Revolution 4.0, besides having an impact on the manufacturing sector, also greatly affected globalization, disguising

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international boundaries and competition. So that halal food is easier to obtain for producers and consumers by using elastic machines, the halal food industry is more affordable both domestically and abroad with the help of some halal food detection devices or applications both from places, materials, and so on. useful and effective in finding halal food without having to struggle and no doubt about its halal status and can lead to more and more competitiveness.

This paper aims to explain food eligibility in the Indonesian halal food industry within condition that will guarantee that produced food according to stages that is fit for consumption. The main focus of this paper is the various opportunities and challenges of the halal supply chain that is growing and developing rapidly in the Indonesian food industry in the Industrial Revolution 4.0 era.

### **HALAL FOOD ISSUES AND DEVELOPMENT IN INDONESIA**

Industrial Revolution 4.0 is an opportunity to make life more prosperous and has introduced technology so easily (Kagermann, 2013). Given the speed of trade globalization, the halal industry is progressing and becoming a significant industry locally and internationally (Damit et al., 2017). The issue of food has long been a special topic in every religion in the world. Food is not only a marker of an ongoing tradition but also a tool in various religious worship rituals. Because it is part of the ritual of belief, religion is an important factor that determines whether something can be eaten or not, when it is permissible or not, as well as what types may or may not be used.

Halal has now become a universal concept. Halal is a term that is exclusively used in Islam which means it is permitted or halal. No party can claim that food is halal without complying with Islamic law. Halal and non-halal include all symbols in Muslim life, not limited to food and drink, but also for safety, animal welfare, social justice and a sustainable environment. Halal and Thayyiban, which means clean and healthy, symbolize intolerance towards cleanliness, safety and quality of food consumed by Muslims (Baharuddin et al., 2015).

In connection with the enactment of the JPH Law (Halal Product Guarantee Act) in Indonesia related to the knowledge of the halal positive list of materials, it is a matter that must be known by the industry in making a product. This inevitably will force the industry to clearly include the halal logo on their products, except for products that are intended as illicit material. Of course, to be able to obtain a halal certificate for industry or business, they must know the knowledge related to the materials (raw materials or supporting materials) used during the production process. Knowledge of material critical points in the food sector will influence or determine whether a product has a status as a halal or haram product

According to the Indonesian Ulama Council (MUI) halal products are products that are in accordance with Islamic sharia, including: First, animals slaughtered must be in accordance with Islamic teachings. Second, the ingredients may not contain pork. Third, not from prohibited materials such as materials made from blood. Fourth, product storage, selling and transporting goods that are not used that are other unclean unless sanctified by Islamic procedures. Fifth, the ingredients may not be from khamr be it food or drink. Sixth, human organs, disgusting impurities and so on. To get halal certification for all products, the supply chain from agriculture to food preparations must be halal (Abidin et al., 2019).

Obviously, the halal industry has tremendous potential but is currently overshadowed by many problems such as the lack of a specific regulatory framework governing halal products, especially in most countries in the world and the uneven level of halal awareness that exists among Muslim consumers (Shah & Yusof, 2014). It was explained that the halal guarantee system was developed based on the concept of three zeros (3.0), namely zero limit, zero defect, zero risk.

The implementation of the halal guarantee system is very important to ensure effective and efficient production of halal products (Majid et al., 2015). In 2014 Law No. 33 of 2014 which there are 68 articles related to the guarantee of halal products it is explained that products circulating and entering and traded in Indonesia are required to be halal-certified. It has been proven to be very

difficult to get the respective halal standards from various halal authorities, especially in the world (Tieman, 2014).

The above law will provide comfort when consuming and utilizing goods or services that are in various places. Because food can be contaminated with food that is not halal when distributed to retailers or when displayed in retail stores (Yusoff et al., 2015). Halal certificates are a guarantee that a product is halal. The Minister of Religion of the Republic of Indonesia decides that halal certificates as collateral for the halal status of a product are marked with halal stamps so that they are safe for consumption by Muslim communities. Consciousness is aware, remember, know, feel, wake up, and understand. Halal awareness can be known with halal materials, slaughtering according to sharia, the place is not occupied by unclean goods (Azizi, 2013).

The technological development of the halal world trade situation should be very encouraging news for a country with a Muslim majority population such as Indonesia. However, the reality on the ground shows that the facts are less encouraging. Many agribusiness actors in the industry based on agricultural products such as fast food and manufacturing in Muslim countries are not ready to face these challenges. With the development of electronic device technology is changing the minds of people who used to use human power replaced by machines (Yulia, 2000). A high standard tool for halal food, environmental sustainability, and halal safety, this tool also provides various halal material requirements for halal products as well as exports to international markets and domestic management (Santo, 2018).

## **OPPORTUNITIES AND CHALLENGES ON INDONESIAN HALAL SUPPLY CHAINS**

Although the potential of the Islamic economic sector is huge, synergistic opportunities for growth and investment are far greater and can even be a necessity in realizing the true potential of each sector. However, many challenges that must be faced in capturing these opportunities include issues around standardization and fulfillment, supply chain integrity, lack of qualified human

resources, consumer education, strategic location on the global scene, business financing, and operational excellence. If halal food producers want to develop in the long run and increase their competitiveness, then they need to make food vendors related factors that better meet the needs of Muslim consumers (Yang et al., 2017). The main consumers of halal food are Muslims, because halal food is designed to meet Islamic requirements (Son et al., 2017). The process must take place from upstream to downstream, so that consumers can easily distinguish the two. It is believed that consumer acceptance of food is often the key to success as far as food processing methods are concerned (Krishnan et al., 2017).

Indonesia is not only potential as the largest halal food market share, but also the largest halal food producer with the wealth of its natural resources. However, these opportunities have not been utilized to the fullest. The existence of food acculturation indicates the adoption of habits to the new diet and food culture by a group of people from other countries dominant cultures (Halawa et al., 2018). Indonesia, in this case, is still the destination market for halal products from abroad. The development of Indonesia's halal industry is considered stagnant. This is because businesses in Indonesia do not consider the halal industry as a big and important business opportunity.

Halal supply chain is a necessity to implement halal value creation into logistics and supply chains that have been recognized recently. Halal food supply chain starts with finding various permitted raw materials and preparing them as needed (Son et al., 2017). If related to the halal supply chain, business practitioners in Indonesia who trade food products should provide clear, honest information about the composition, halal nature of traded food products to protect the rights of Muslim consumers against non-halal food products. But there are still many food products that are circulating in the community that have not included the halal logo or the halal logo is still doubtful. Food products that do not have a halal logo are not necessarily haram, so also products that have a halal logo are not necessarily halal either, because it is likely that the product is not halal.

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Halal supply chain refers to the process of managing procurement, movement, storage and handling of materials, spare parts, livestock and semi-finished inventory, food and non-food, and related information along with the flow of documentation through organizations that adhere to general principles of sharia law (Bahrudin et al., 2011). In addition, the halal supply chain adopts conventional supply chains but with Islamic legal requirements in force. The imposition of Islamic law in supply chain management acts as a basic requirement for sharia-based halal management processes in the sense that all must be halal (permitted) and also thoyyib along the whole chain (Omar et al., 2012).

Logistics plays an important role in protecting product quality and conditions through proper transportation, storage and handling in the supply chain, to achieving its final destination. The success of the halal industry depends on the ability of logistics service management to ensure the integrity of halal products. All halal products must comply with sharia law which states that products must be safe, harmless and healthy from beginning to end (Tieman, 2008).

Thus, adopting halal in the logistical context, halal products must be ensured halal during and throughout all logistical activities which specifically include transportation, storage and warehousing and retail must also comply with sharia principles as a whole (Kamaruddin et al., 2012). Halal supply chain requires a process approach, where processes and procedures must be clearly documented as proof of the halal logistics system. Currently, the food chain has become a part of the style of life has undergone many changes (Nakyinsige et al., 2012).

Although a well-established and well-documented halal food logistics system must be able to prevent contamination, proactive corrective measures need to be defined to reduce or at least minimize the risk of contamination of halal products and business strategies to overcome the perceptions and sensitivity of Muslim consumers. The main purpose of the halal supply chain is to ensure the integrity of halal products for end consumers (Jaafar et al., 2015).

Protection and prevention measures must be taken to ensure that halal products still

remain halal even during the transportation process in the supply chain. As such, halal supply chain management ensures halal integrity is guaranteed from the source (origin) to the point of purchase of the consumer end. This means that halal logistics plays an important role in halal supply chain management in linking suppliers with end customers so as to create a halal supply network, but the integrity of halal in the halal supply chain has not been guaranteed in the industry and its logistics practices. But sometimes consumers worry about the possible adverse effects of eating modified foods (Ismail et al., 2018).

In this case Muslim consumers are willing to pay the costs associated with halal logistics to ensure that sharia compliance parameters in every aspect of the food supply chain are maintained. This shows that the halal logistics policy especially related to the halal supply chain must be obeyed so that Muslim access to halal products can be guaranteed (Rohana et al., 2012).

To protect halal integrity throughout the supply chain or value chain, separation and communication are needed to provide a higher level of assurance to Muslim consumers in terms of protection for brand owners. This separation can be achieved by physical separation systems in transportation, storage and terminals (sea / air / land), to ensure that the flow of halal and non-halal goods is not combined with cargo carriers and for (destinations) Muslim countries are not mixed in transportation and storage (Tieman, 2012). The supply chain is a party network that connects sources to the point of purchase of consumers. Horizontal supply chain structure refers to the number of levels throughout the supply chain.

The supply chain may be long with many levels (many fast moving consumer goods supply chains), or short with only a few levels (such as a mass supply chain). The vertical supply chain structure refers to the number of suppliers / customers represented at each level. A company can have a narrow vertical structure (multiple suppliers and / or customers) or wide (many suppliers and / or customers) (Lambert et al., 2000). Because managing the entire supply chain is a complex task, there is tremendous potential to improve

the performance of halal supply chains through increased coordination throughout the supply chain.

The series of halal supply chains helps in managing global halal supply chains in accordance with the destination market specifications and ensuring that integrity is maintained throughout the halal network. The series utilizes a public halal distribution center at the main gate, transportation consolidation, and the use of innovative logistics concepts (such as halal cargo boxes) (Tieman, 2012).

This role can be fulfilled by fourth-party logistics service providers, namely integrators who gather resources, planning capabilities, and technology from their own organizations and other organizations to design, build and run comprehensive supply chain solutions. The application of the concept of vertical and horizontal collaboration provides better control of the halal supply chain from sources to the point of purchase of consumers and increases consumer confidence in halal-certified products.

The concept of vertical and horizontal collaboration requires a more advanced halal certification system (beyond product certification), expanding halal regulations along the supply chain. Industrial pilot projects and case study research are needed to test various concepts of halal supply chain collaboration and provide practical solutions for the halal industry to optimize halal supply chains. This is to support the development of a customer-driven supply chain that is better able to meet the diverse needs of the Muslim market and to meet general halal standards throughout the supply chain from source to consumer purchase point.

Empowering consumers through the use of strong information technology in all areas of life will lead to the emergence of goods and services economically as well as superior knowledge (Khan et al., 2018). Food handling throughout the supply chain process is important, because the production of halal thayyiban food will be meaningless if the halal and cleanliness of food is not taken care of during the delivery process from the source of supply to the final consumer.

The status of halal thayyiban product can only be achieved if all possible contamination of haram and dangerous

products can be avoided not only in production but also during the supply chain process. The halal process must be seen from the perspective of the supply chain because halal products can only be produced when all activities along the supply chain process are based on the provisions in Islam, not only on production.

So in this case to encourage and facilitate the implementation of the halal supply chain in Indonesia, it needs a strong role of the Indonesian government, in this case including preparing facilities and infrastructure in the implementation of the halal supply chain which includes logistics centers, warehousing airports, goods terminals, ports, goods terminals, warehousing and so on. Business providers and halal supply chain services require deeper insights from the attitudes and behavior of halal consumers (Al-Ansi et al., 2018).

The development of halal supply chains in Indonesia needs to be encouraged and directed for integrated supply chain management. The blueprint halal supply chain development in Indonesia needs to be prepared, as the master plan for development of the halal industry in Indonesia. The blueprint will be needed for the supply chain concept of halal industry in Indonesia. Halal supply chain is the application of halal thayyiban halal principles throughout halal logistics activities. All activities starting from the source of supply, storage, transportation, manufacturing, handling, and distribution must comply with the concept of halal thayyiban.

The purpose of the halal supply chain is to guarantee the halal product along the flow in halal logistics. This halal supply chain develops due to the increasingly high level of consumer awareness, in addition to halal products as well as halal logistical processes. One of the benefits of the halal supply chain is the ability of logistics service management in ensuring the integrity of halal products.

The industrial revolution 4.0 presents huge challenges and opportunities for the advancement of the halal industry in Indonesia. Thus, the readiness of halal industry stakeholders is needed, especially in the field of halal supply chain in solving complex problems in the process of digitizing the halal supply chain. Halal industry players are

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required to continue to innovate in digital product research and is a mandate to advance the Indonesian halal industry.

### **CONCLUSION**

The opportunities and challenges of the halal food industry in Indonesia include ensuring success implementation of halal product guarantees, increase the capability of guarantee of halal products with utilizing technological developments, ensure logistics and supply chain halal food, Sharia funding for the development of the halal food industry. The government must be able to provide facilities both in terms of access, cost and procedural requirements for MSME entrepreneurs in conducting halal certification. Like, the granting of halal certification fee waivers, ease of document requirements submitted and so on. So it is expected, the number of MSMEs, especially food halal-certified drinks can increase rapidly, and can increase revenue in the halal food industry sector.

The government is expected to provide various soft skills training for industry players halal food especially on halal supply chain. The soft skill training can include: product branding, product marketing, Islamic business ethics and so on. So that halal food producers in Indonesia can gain more trust from the public and be able to increase its power their product competitiveness both nationally and internationally.

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