

## Dynamics of Halal Supply Chain Development in Indonesia

Adang Sonjaya<sup>1\*</sup>, Opik Rozikin<sup>2</sup>, Cucu Susilawat<sup>3</sup>, Hanafi bin Hussin<sup>4</sup>

<sup>1</sup>National Research and Innovation Agency, Indonesia,

<sup>2</sup>State Islamic University Sunan Gunung Djati Bandung, Indonesia

Email: [cucususilawati92@uinsgd.ac.id](mailto:cucususilawati92@uinsgd.ac.id)

<sup>3</sup>State Islamic University Sunan Gunung Djati Bandung, Indonesia

Email: [opikrozikin@uinsgd.ac.id](mailto:opikrozikin@uinsgd.ac.id)

<sup>4</sup> University of Malaya, Kuala Lumpur, Malaysia

Email: [hanafih@um.edu.my](mailto:hanafih@um.edu.my)

\*Correspondence email email: [adang.sonjaya@brin.go.id](mailto:adang.sonjaya@brin.go.id)

### Article Info

#### Article History:

Received : 25 January 2024

Reviewed : 18 March 2024

Accepted : 1 May 2024

Published : 1 June 2024

### Abstract

The article's main aim is to analyze the readiness of infrastructure to support the development of halal industrial areas in Indonesia. The discussion focused on aspects of infrastructure quality, halal awareness, and cooperation between organizations in the field of infrastructure. This study is proposed as literature research by examining various publications published in multiple media. The data that has been collected is validated and then analyzed using a descriptive-qualitative approach. Several halal industrial areas established in Indonesia are used as cases to discuss this study. This research shows that with Indonesia's sizeable Muslim population and solid demographic, religious, social and cultural capital, Indonesia has an excellent opportunity to become the centre of the world's halal industry. This support also takes the form of a high level of awareness regarding halal. However, Indonesia is still faced with various challenges, starting from suboptimal infrastructure and low awareness of halal certification, which results in limited availability of human resources and regulatory constraints so the halal industry can develop. The region's supply chain infrastructure and halal ecosystem accelerator could have been more optimal. This study can provide initial information on the development of halal industrial areas in Indonesia, but it requires further, more comprehensive research.

### Keywords:

Halal Industry; Halal Industrial Area; Halal Ecosystem

DOI: 10.28918/ijibec.v8i1.6808

JEL: G10, L5, L88



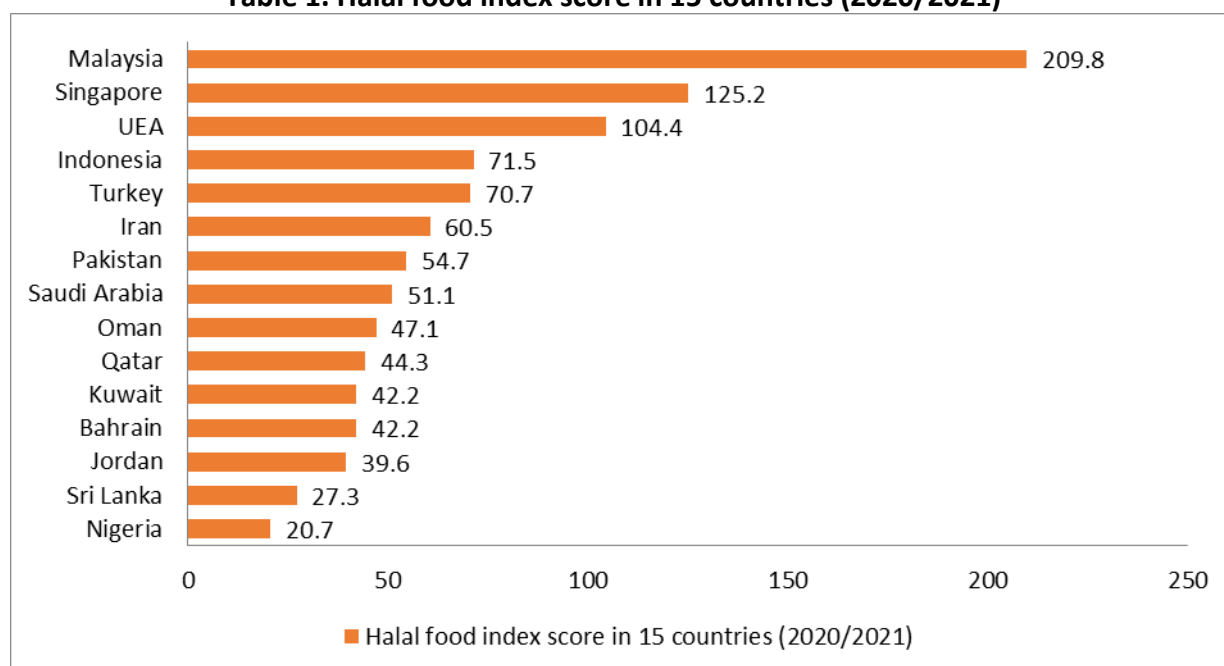
## 1. Introduction

The halal ecosystem integrates the entire halal value chain, where the ecosystem must be able to integrate from upstream to downstream, as well as the core and supporting components of the halal industry. The integration of the entire halal supply chain is the whole system for the halal industry, where the halal supply chain is managed more effectively than traditional logistics operations and is more complex, where Muslim consumers worldwide need certification, packaging and distribution. As a result, in this halal ecosystem, it becomes essential to follow halal regulations in every part of the supply chain (Azam & Abdullah, 2020), even in the product marketing stage, which is described as a policy to satisfy consumer needs through good behaviour in providing halal products and services (Ismail et al., 2018) to meet the increasingly global market.

Muslim consumers continue to be the demographic with the fastest growth rate worldwide. For comparison, Every fourth person in the world is a Muslim. A nation that adopts Islam is predicted to have 2.8 billion citizens by 2050, or nearly one-third of the world's population. Most of them come from the Asia-Pacific region (Choong & Hedrick-Wong, 2014). With an increase in the world's Muslim population, the halal segment will continue to grow along with middle-class income, the increasing millennial generation population, easy access to travel information, and Muslim-friendly services. (Ainin et al., 2020) This increase also has occurred in Indonesia.

The halal business in Indonesia is expanding due to Muslim and non-Muslim buyers becoming more conscious of the benefits of consuming halal foods. For a Muslim, halal is a spiritual dimension, while for non-Muslims, halal is part of the rational dimension, a sign of cleanliness and health (Bashir, 2020). Moreover, 12.7 % of Indonesia's population are Muslims from the world's Muslim population.

**Table 1. Halal food index score in 15 countries (2020/2021)**



Source: State of the Global [Islamic](#) Economy Report 2020/2021

According to the report, Indonesia's halal market is growing, particularly for halal cuisine. According to the 2020–2021 State of the Global Islamic Economy Report, Indonesia is in fourth place with a score of 71.5 points. Under the UAE and Singapore, Malaysia still

occupies the first rank with a score of 209.8. Advancements in Indonesia are inextricably linked to the increasing awareness of the significance of halal cuisine, which has gradually become a lifestyle for consumption.

For this reason, for the halal lifestyle to be accepted and accepted at all societal levels, it has evolved into a global trend and indicator. (Baharuddin et al., 2015)The halal lifestyle also influences the increasing interest of investors in the halal industry (Budiandru, 2021). The trend of change from initially being halal is a demand religion is shifting slowly to become a lifestyle of the people, which has an impact on the demand for halal goods and its consequences for the availability of halal products. It is not until now that the halal lifestyle demands guarantees of halal products from raw materials to marketing. As such, numerous approaches to growing Indonesia's halal sector are still being implemented, starting from strengthening legal regulations with the issuance of Perpu no 39 of 2021 to developing halal industry partners (KIH/Kawasan Industry Halal).

The concept of forming KIH is supply chain management, raw material procurement, halal production process, halal product storage, and distribution. Where the potential for increased demand for domestic and foreign halal products can be fulfilled, it is also hoped that Indonesia will become a producer in the halal industry (Sayekti et al., 2022), which distinguishes KIH from industrial areas in general, namely that all services related to halal products are under one roof or one-stop service in the KIH includes a halal guarantee system such as HR, laboratories and halal inspection agencies (LPH) (Sayekti et al., 2022).

Nonetheless, in addition to the need for more awareness and attention to halal products, business actors still need to know more about halal certification requirements. Halal products are still commonly accessible to small business owners. This kind of thing occurs because there needs to be more halal socialization and promotion, including halal education and information. Other factors include several barriers, like a shortage of raw materials that satisfy halal requirements. Several sectors are still dependent on imports.

A clear halal ecosystem pattern has yet to be formed. This problem is a challenge, especially since the Halal Product Guarantee Law, previously included in the Job Creation Bill cluster, has yet to be approved and implemented. Certification, which is the core of implementing the Halal Product Guarantee for all products circulating and traded in Indonesia according to the provisions, should have been practical after five years since the Law was promulgated. (Hosen et al., 2022)which means that before 2024, the certification process must be completed. This acceleration is one of the instruments used to establish a halal ecosystem.

Various analyses of the halal ecosystem have been carried out, such as research (Noordin et al., 2014), which analyzes the value chain and work system to describe the new halal value chain. This halal system is part of the halal ecosystem. The results of this study have a strategic approach that reveals that a belief in religion is an essential part of the organizational structure. Research (Abd Rahman et al., 2016)describes the governance and ecosystem of the halal industry in Malaysia, especially halal logistics, and (Haji Sulaiman & Hashim, 2021) examines the halal value chain and halal awareness and the process of implementing halal certification carried out in Brunei Darussalam.

Some research supervision methods in the halal industry (Júnior & Broday, 2019)combine halal value chains and PDCA the halal industry in order to achieve a competitive advantage and competitiveness by maintaining halal values in each process chain, starting with supply, manufacture, storage, distribution, and delivery to consumers.

Research on KIH has also been conducted (Dahlan & Wildan, 2022), which examines the Jokowi administration's Islamic banking policy and the political economy of the Halal Industrial Zone; this study demonstrates that political actors, like the Keynesian school, intervene in the market. However, adopting the Smithian school in Islamic banking economic regulations frees the market in its economic policies. Research on KIH and the importance of an ecosystem has been carried out a lot. However, research has yet to be carried out on halal industrial areas (KIH) as accelerators for halal ecosystems. This study aims to analyze Indonesia's halal infrastructure and constraints on the development of halal industrial areas.

## 2. Methods

This qualitative descriptive research explores the management of halal industrial areas in forming halal ecosystems and the infrastructure that has been built. Accordingly, the laws regarding halal are used as guidelines to review current practices. This research uses the documentary method, a simple written text (Mogalakwe, 2006) acquired from scholarly publications and other pertinent sources. A document has the following benefits: it is more affordable, stable, readily available, and well-organized. It was collected, after which it is reviewed by making descriptive explanations related to the Indonesian halal industrial ecosystem and the development of halal industrial areas in the form of words, pictures, and symbols.

Research data analysis goes through several stages, including: verification, classification, and data reduction are past this study's three phases of data analysis. This study minimized data by first choosing all of the data and then streamlining the existing data according to the study's focus. Additionally, the study objects to the Halal industrial area and the Halal ecosystem categorizes the reduced data. Data validation is the last phase, which brings the researchers' interpretation of the data to a close. Triangulation techniques are used to compare two or more data sources for verification.

## 3. Results and Discussion

### Halal Certification Urgency

In Article 4 of Law No. 33 Guarantee of Halal Products, commodities circulating in Indonesia must be halal certified. This Law means commodities such as food, drinks, items or offerings associated with food, Pharmaceuticals, cosmetics, chemical products, bio-products, and genetically engineered products. (UU No. 33 of 2014, Article 1) must be halal certified, and the organizers are the government through an institution called the Implementing Agency for Halal Product Guarantees (BPJPH). Since October 17, 2019, following article 67 of Law Number 33 of 2014 that has not been appropriately implemented, the issuance of PP no 39 of 2021, which revises the previous Law, where there are several changes between Law No. 33 of 2014 concerning Guarantees for Halal Products and PP No. 39 of 2021 concerning Implementation, although both regulate halal in the context of products, there are several differences between the two, including scope, management organization, certification procedures, and product types.

In general, PP No. 39 of 2021 provides a more detailed explanation and regulates more detailed procedures in implementing Law UU No. 33 of 2014, especially regarding certificates. In terms of halal and supervision, the issuance of this Perpu identifies an acceleration of certification, which is considered not only for religious or consumer protection interests but also for economic interests, especially Perpu, which is usually issued due to a crisis.

### Religious Interests

Religion and religiosity have values that set standards of behaviour for their adherents, which will directly impact consumption choices. Spiritual values are fundamental to encouraging consumer behaviour and actions because it has become human nature, where behaviour is influenced by the spiritual values they adhere to. (Jamal Abdul Nassir & Nur Shahira, 2009) Some foods are prohibited for consumption by Muslims, such as the prohibition on consuming alcohol, pork, blood, carrion, and meat that is not slaughtered according to Islamic law (Havinga, 2010).

The word *halal* is an Arabic term meaning permissible, primarily associated with the Muslim community. This refers to food and products produced by Islamic Law that contain no unlawful ingredients. (Mohd Nawawi et al., 2020) Halal products also include cosmetics, pharmaceuticals, tourism, etc. In addition, the fact that consumption is regulated in religion, which is explained in Al Baqarah 168, where two main points cannot be separated, namely "*halalan tayyib*," the *halal* and *tayyib* aspects, That is, it contains no haram elements, provides positive benefits and does not harm the mind or body. Halal terminology has utility and is not harmful to the body, mind, or religion (Abdelali & Ngah, 2019).

Regardless of the religious factor, concern for good products purchased and consumed is higher by Muslims and non-Muslims. This is seen from the food they consume (Awan et al., 2015), especially Muslims as a whole, the factor of knowledge of religion is very influential on consumption behaviour (Essoo & Dibb, 2004); therefore, certificates are characteristic because the *halal* logo and the composition of food ingredients will create consumer confidence in the product and will lead to emotional attachment to the product and will have an impact on consumer buying interest (Yoga, 2019).

### Consumer Protection Interests

Indonesia is moving forward by incorporating *halal* into the constitution with the birth of Law No. 33 of 2014 after a very long time and based on the absence of laws that explicitly regulate consumer protection for *halal* things. Thus, the government, as state administrators, is obliged to compile regulations and *halal* guarantees. Suppose it is linked to public interest theory. In that case, the State can intervene to make regulations on Halal Product Assurance, one of the provisions, which is the obligation of *halal* certification for all products that enter, circulate, and trade (Hosen et al., 2022).

Muslim consumers have the right to be protected by the State by providing Halal certificates. This aligns with Article 4 of Law Number 8 of 1999, which regulates consumer rights related to comfort, security, and safety in consuming goods and services. By this article, Muslims have the right to feel safe, comfortable, and secure when using products. It is mandatory for producers of goods and services, including those engaged in Micro, Small, and Medium Enterprises (MSMEs), to obtain a Halal Certificate that has a barcode. Product information and the ease of information about digital products are also consumer needs (Hidayat & Musari, 2022)

**Table 2. Development of regulations on halal product guarantees**

Regulation	Detail
Law No. 33 of 2014	Product guarantee for halal
PP No. 31 of 2019	putting into effect Law No. 33 of 2014's regulations pertaining to halal product guarantees
PMA No. 26 of 2019	introduction of halal goods
KMA No 982 of 2019	Regarding the discretion of halal certification

KMA No 464 of 2020  
PP No. 39 of 2021

services to LPH/LPPOM MUI, specifically regarding service tariffs

Types of products that require halal certification

Organizing the field of guarantee of halal products

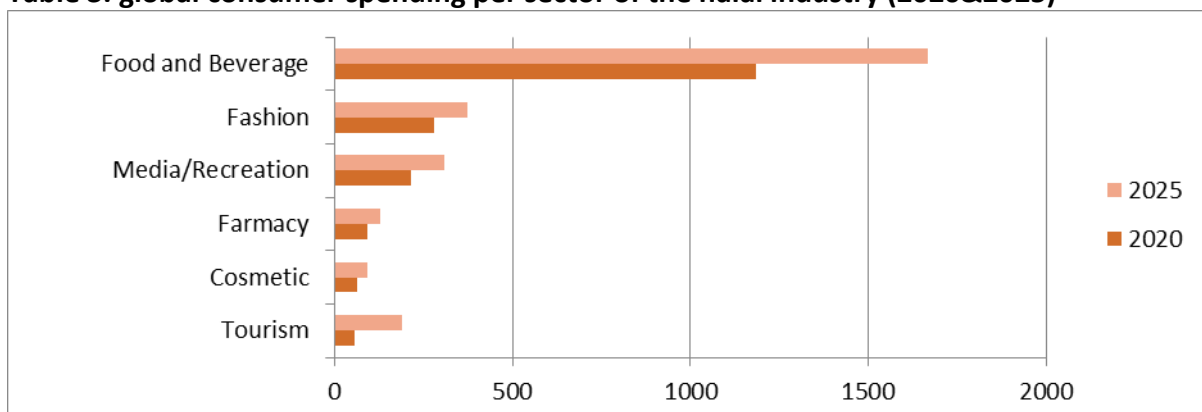
Source: Adaptation of related documents, 2023.

The obligation of halal certification regulated by the State is a form of safeguarding the interests and rights of consumers when information and technology provide various types of food, beverages, cosmetics, and medicines. Ordinary people need help recognizing how and what materials are used. It differs from the life of the Prophet's time, where halal and haram were very clear. However, some of it was clear that there were vague things that halal was important for a Muslim amidst the rapid development of the industry. Of course, religion is not a commodity. However, when religion is used to attract consumer sympathy, the State must be present to protect such research (Ireland & Rajabzadeh, 2011) where the majority of UAE Muslim consumers suspect many products are not halal, even in Indonesia this is a big challenge because historically halal certification was imposed due to halal fraud certification, falsifying logos and self-made labels. (Ahmad et al., 2018)

### Economic Interest

The State of the Global Islamic Economy Report 2020 states that the number of Muslims worldwide is still growing. There are 1.8 billion Muslims today out of a total population of 7.7 billion. Naturally, this has an impact on the rising demand for halal products. It is estimated that \$2.2 trillion was spent by Muslims globally in 2018 on goods influenced by Islamic faith-inspired ethics in the food, pharmaceutical, and lifestyle sectors. In 2024, it is anticipated to reach \$3.2 trillion. Islamic finance, modest fashion, pro-Muslim travel, halal food, cosmetics, media, and halal entertainment are all included. (Dewi et al., 2021) In contrast, According to the 2021/2022 Indonesia Halal Markets report, the world's Muslim population spent US\$ 1.9 trillion in 2020 on various lifestyle products such as food and drink, fashion, recreation, and tourism.

**Table 3. global consumer spending per sector of the halal industry (2020&2025)**

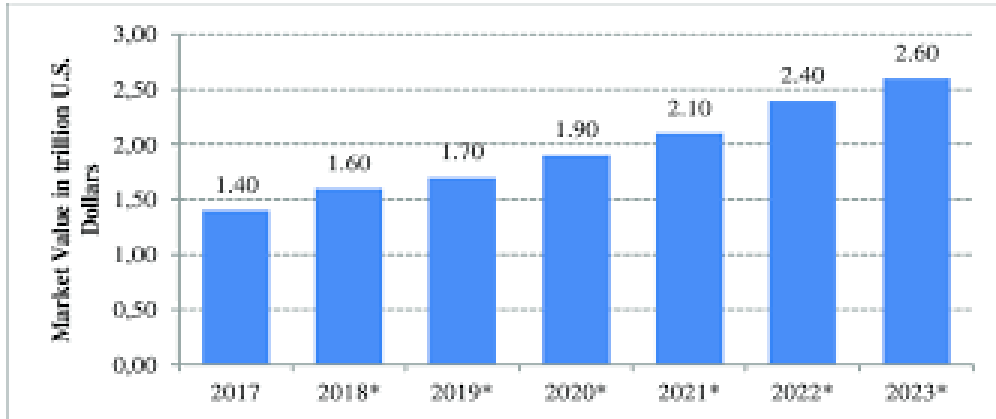


Source: Standard Dinar, 2023.

The beverage and food sector is the one where Muslims worldwide consume the most halal products. The food and beverage industry saw US\$ 1,185 billion in spending in 2020 and is expected to grow to US\$ 1,668 billion in 2025, while the fashion industry saw US\$ 279 billion in spending. By 2025, this sum is expected to rise to US\$ 375 billion. At US\$ 58 billion, the tourism industry has the lowest revenue. However, by 2025, it is expected to rise to US\$

93 trillion. In addition, halal food generates US\$ 560 billion in revenue or 12% of the trade in food products derived from agriculture. (Awan et al., 2015).

**Table 4 : Market Value of Halal Foods Worldwide from 2017 to 2023**



Source: www.statista.com. 2022

The market value of halal food is approximately 2.4 trillion dollars, estimated to reach 2.6 trillion dollars in 2023 (Tabel 4). Increasing awareness among Muslim consumers increases the demand for halal-certified products in the global market. In addition, women's participation in business has increased the demand for packaged food (Can, n.d.). From considering the opportunities for increased demand for halal products, which are increasing both nationally and globally, the government's *political will* in optimizing these opportunities must be strengthened, one of which is by strengthening Halal regulations by taking concrete steps, namely the establishment of a Law on Halal Product Guarantee

#### **Halal Industrial Areas (KIH) in The Establishment of A Halal Ecosystem**

Development has become one of the government's concerns with issuing regulation number 28 concerning KNEKS 2020, which focuses on 4 (four) developments. Namely: 1) The improvement of the halal industry; 2) The improvement of the Islamic finance industry; 3) The improvement of Islamic social funds; 4) The improvement and enlargement of Islamic businesses

The development of the halal industry is one of the four points that are the focus of this matter, as can be seen from the issuance of several regulations as a legal umbrella, one of which is the Regulation of the Minister of Industry No. 17 of 2020 which regulates the development of halal industrial areas.

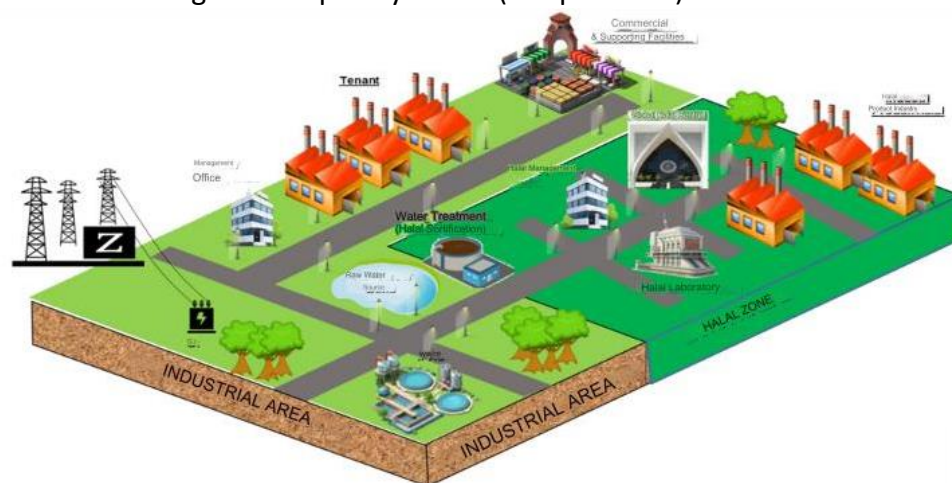
A place where Halal Industrial Park has been established as an area where industrial activities are concentrated. Moreover, where the infrastructure that supports it and the company's facilities. The development of this area after conducting a comparative study of Malaysia, which had already built a halal industrial area where a halal food control system was formed with five themes (Ahmad et al., 2018): ( 1 ) legislation and regulations, (2) controlled halal management, (3) halal inspection, (4) halal laboratory, (5) information on communication education and training which are all in one area.

The government sets various regulations to govern Halal Industrial Estates. These regulations were initiated through the Ministry of Religion and led to the inauguration of the Halal Product Guarantee Agency (BPJPH) in October 2017 as the agency authorized to issue halal certification after meeting halal standards, which refer to design and quality—products, as well as appropriate State, organizational, and individual behaviour (Fischer, 2015). In April 2019, President Jokowi approved Government Regulation No. 31 of 2019, per the Rules for Enforcing Law 33 of 2014, which deals with Assurances for Halal Products.

In addition, in 2019, the Minister of Religion Regulation Number 26 of 2019 was issued, which further strengthened the development of the Halal Industrial Area. This led to the formal inclusion of the Halal Industrial Area as part of the national strategic policy. The Halal Industrial Estate (KIH) development has been intensively carried out since 2020, and several regions are interested in developing it under various specific conditions. The Minister of Industry has released Ministerial Regulation No. 17 of 2020, which details the steps to follow to acquire a certification for setting up a Halal Industrial Zone.

Ever since the Minister of Industry Regulation No.17/2020 implementation on the Guidelines for Acquiring a Halal Industrial Area Determination Certificate (KIH), this area can be used by all business actors as a "kitchen" for Halal products. Apart from providing complete facilities and infrastructure to meet halal requirements, KIH is committed to increasing the business capabilities of SMEs, strengthening the halal supply chain in Indonesia, and centres for halal activities such as training, exhibitions, etc. promotions, certification, testing laboratories and others (Izzati, 2021) All halal processes can be integrated with this area to accelerate the development of the halal industry.

Previously, the halal sector was defined as an economic activity involving transforming raw materials or using industrial resources to produce goods with added value or higher profits, including industrial services, which are recognized as halal under Islamic law. This definition is found in Regulation of the Minister of Industry No. 44 of 2022, Article 1, Paragraph 1. citing Law 33 of 2014 about halal guarantees, which stipulates that a halal certificate is required to verify a product's halalness, the halal industry is concluded as a commodity that already has the halal certification. Based on the Regulation of the Minister of Industry Number 17 of 2020, the establishment of an area is not only for the whole area but also for a part of the area, meaning that an existing industrial area can open a green zone which is designated explicitly as KIH (see picture 1).



Source: Ministry of Industry

**Figure 1. KIH Green Zone**

The government prepared six halal industrial areas in different regions to speed up the halal value chain and the national halal ecosystem with the idea of a one-stop halal service (one-stop service), and 2020 will mark the start of the development of the halal industrial area (KIH). Only three of the six prepared areas—the 100-hectare Safe n Lock industrial estate in Sidoarjo, East Java, and the 500-hectare Modern Cikande industrial estate in Serang, Banten—have obtained halal KI certificates. To create an industry that manufactures halal goods under Shariah regulations, systems and facilities have been developed for the



Bintan Inti industrial zone, which spans 6.5 to 100 hectares in Bintan, Riau Islands. Intending to become a global halal hub in Indonesia, KIH is growing into a halal industry cluster as a halal ecosystem from upstream to downstream, including a logistics system. Furthermore, the government advocates for the efficient amalgamation of significant corporations with small and medium-sized businesses (SMEs). (Gayatri Anggarkasih & Sukmana Resma, 2022) Not only that, but KIH also provides other supporting facilities.

Supporting facilities available at KIH include halal integrated processes from raw materials to packaging along with supporting facilities, research and development centres, food technology polytechnics, halal quality management systems, Islamic financing institutions, and ports. In addition, customs facilities will also be available. Regarding halal infrastructure, KIH management has collaborated with the Halal Product Guarantee Agency (BPJPH) and the Research Institute for Food, Drugs, and Cosmetics (LPPOM MUI) regarding developing and designing the integration of the halal industry in KIH (Sutrisno, 2021) which covers all operational activities from the supply of raw materials, manufacturing slaughter, packaging to marketing, and various activities from upstream to downstream.

This concept has been recognized by the Food and Agriculture Organization (FAO) in preparing guidelines for using the term halal so that its member countries adopt it. In the case of Indonesia, the legitimacy of halal products is carried out by BPJPH, which previously went through a research process conducted by LPPOM and MUI (Ahyar, 2020). This changed policy is an instrument for accelerating halal certification so that it can optimize the potential of the halal market at the global level where Indonesia has not yet entered the top ten largest halal food producers, with the development of KIH which facilitates halal integration and accelerates the establishment of a halal ecosystem.

The ecosystem as a whole is a unified and intact system of integration of all halal elements, apart from the government issuing regulations and forming infrastructure, as well as the role of Islamic banking as a provider of capital, which until now has not been able to collaborate, not only Islamic banking, the establishment of KIH will attract investors. At home and abroad, the involvement of the community and Islamic community organizations (mass) is also very much needed in this KIH as a partner for developing and disseminating halal to the community.

The role of the community/people as political infrastructure in the formation of the halal ecosystem, political parties, non-governmental organizations (NGOs), community organizations (ORMAS), and the individuals involved (Ali Imran, 2014) since the environment that influences the dynamics and rate of development of the halal industry's growth can be understood as part of the ecosystem. The policies, processes, procedures, laws, regulations, and institutional and organizational arrangements that control the operations of the stakeholders in the halal industry concerning Shari'a compliance are collectively referred to as the ecosystem of the halal industry.

The halal industry's ecosystem is also considered a logistical tool for ecological competitiveness, which dictates the halal industry's success. Because the comparative advantage needs to be transformed into a competitive advantage through a healthy ecosystem. Comparative advantage is based solely on resource ownership (such as a Muslim demographic bonus or natural resource wealth). However, minimal innovation and increased value added (value added). Conversely, a competitive advantage is an advantage that can create value through innovation, technology, and superior human resources (Nasution, 2020).

### **Obstacles to The Development of The Halal Industry Area**

Indonesia has built the infrastructure for establishing a halal ecosystem, and although it is relatively increasing, its development is faced with various challenges. It is a country with the largest Muslim population in the world, which is an ample opportunity, but some findings state that challenges that are not easy come from the demographic aspect, where there is a high Muslim population with diverse schools of thought which can be a determining factor because it affects population mobility and market tastes (Nasution, 2020)

Differences in sects affect how to respond to halal products and affect demand and consumption. Based on the KNEKS 2022 report, the occupancy of three halal industrial areas is still not optimal. Modern halal Cikande Banten is only 19% filled with halal industry park Sidoarjo is 33.1%, and Bintan Inti Halal Hub Riau 4.7% obstacles in the development of the halal industry in at least two aspects: (1) lack of halal awareness; (2) the lack of adequate infrastructure and the lack of coordination of institutions that handle the infrastructure.

#### **Lack of Halal Awareness**

Customers' comprehension of halal principles and their advantages is critical to the halal industry's success. Consumer education is essential to emphasize the significance of halal food for Muslims and non-Muslims. For the public to comprehend the role of the government and regulators, the legitimacy of the halal logo is also essential. Other halal organizations facilitate the marketing of goods with halal certification. (Yunos et al., 2014) need for understanding between consumers, food producers, and suppliers.

The fact that halal goods are less appealing and that products must adhere to labelling requirements, particularly those about shelf life, are among the highlights. Food producers also need more education and training in product development. Additionally, food suppliers and producers must be more cognizant of consumer tastes. This evidence is proven by Issa, Hamdan, Muda, and Jusoff (2009), as a Malaysian food producer practising halal principles, demonstrated by our halal label compliance and recognition of halal food production. (Hamdan et al., 2013) Halal awareness at the producer level, especially for UMKM, which is still low, needs coaching and socialization because a study shows consumers are more concerned with halal logos (Hamdan et al., 2013). Hence, coaching and training at the producer level are needed.

Upstream producers in the halal industry typically require enhanced knowledge of supply chain management, production, marketing, investment, and raw materials to offer halal products. Sharia experts only make up some of the production sector, so understanding the average handling of halal products still needs improvement. (Takhim et al., 2023) This situation causes a lack of innovation at the producer level, and innovation development in the halal industry is better than in the traditional industry.

Innovation activities are strongly influenced by the ability of human resources to understand the concepts and practices of halal-based production (Fauzi et al., 2017). Not only consumers or producers of halal literacy are still weak at the level of central and regional stakeholders in line with research (Prabowo et al., 2015) which discusses the factors that hinder certification in areas where supervision and information problems are inadequate, but even local agencies are not aware of their role, one of the reasons for this is the lack of technological innovation.

The problem of technological innovation is one of the obstacles to the growth of the halal industry, partly due to low intellectual property rights, which limit the increase in innovation. The impact so far is that the nature of the halal industry is only aimed at realizing religious principles and is not oriented towards sustainable business innovation, especially in

taking advantage of opportunities. Understanding the governance of the halal industry at the regional level is very important for many fundamental reasons (Hudaefi & Jaswir, 2019).

That shows the importance of promotion and outreach. Promoting and disseminating halal products are essential because even though most Muslims or devout Muslims do not guarantee high awareness of halal products, people who follow a specific religion may not fully carry out what is required by that religion. For example, a Muslim who celebrates Eid al-Fitr, the final holiday of fasting, and performs religious rituals during Ramadan does not necessarily carry out these religious practices from the start. Likewise, religious rules, beliefs, and regulations may not influence their buying intentions and behaviour. According to Salman and Siddiqui's study of Pakistani consumers, Muslims are aware of Halal food because they have been eating it for a long time and know it does not contain any ingredients that are considered harmful (Salman & Kamran Siddiqui, 2011).

#### **Inadequate Infrastructure and Lack of Coordination of Infrastructure Handling Institutions**

The government is considered suboptimal in tracking the integrity of halal products along the supply chain. There is still room for improvement in infrastructure development in the Halal Industrial Zone. Ideally, the government's role in ensuring halal industry supply chain integration is very much needed, such as the provision of fiscal incentives that still need to be profitable for business actors so that investors still refrain from being involved in the halal industrial area. It is also seen that the role of government agencies involved in this industry is seen as there needs to be comprehensive coordination in supply chain activities, starting from planning, development, implementation, Regulation, promotion, and education of producers and consumers of the halal industry. Halal industry players also still need collaborations with Islamic banks, as evidenced by the low financing in this sector. In addition, the development of halal traceability technology could be more optimal. The development of technology in the halal industry is a necessity.

This modernization era is very dependent on the role of technology in running the halal supply chain. The use of digitization in halal supply chain management is a must. When connected, digitizing the halal supply chain reduces operating costs by more than 30% (Antonio et al., 2020). This modernization era is very dependent on the role of technology in running the halal supply chain. The use of digitization in halal supply chain management is a must. When connected, digitizing the halal supply chain reduces operating costs by more than 30%. The halal supply chain is closely related to food. Activities and issues inherent in the halal supply chain are the integrity of halal food (food raw materials, hygiene and safety factors, nutrition, good quality, and health), the slaughter process (poultry and meat slaughter must comply with Sharia regulations), and lawful logistics. And marketing (from the process of storage and distribution to the presentation of halal and haram products) (Bin Yusoff et al., 2015).

As a recommendation, With the high demand for the halal industry and limited supply problems that the State deemed necessary to build infrastructure for logistics and supply chain by strengthening the halal ecosystem, the development of the halal industrial area is the foundation for accelerating the national halal industry. However, it cannot be separated from the constraints in its development, the requirements for permits to form an area, and the provision of facilities. In the future. The supply chain strategy must be directed to the regions, infrastructure development for thematic halal areas following the superior commodities of each region, and thematic halal centre areas that do not require extensive facilities such as KIH but can optimize certain commodities and reach MSMEs more quickly.

#### 4. Conclusion

The global industry is expanding rapidly, with both demand and supply on the rise. Many nations have recognized the halal market as a lucrative economic prospect, even those without Muslim-majority populations, as part of the evolving global trade landscape. Likewise, With the largest Muslim population in the world and a strong demographic, religious, social, and cultural capital, Indonesia has a great chance to capitalize on the halal industry's potential. The country also has a very high level of awareness regarding halal consumption. However, Indonesia is still faced with various challenges, from non-optimal infrastructure and low awareness of halal certification, which results in limited availability of human resources and regulatory obstacles, so the halal industrial area as a supply chain infrastructure and halal ecosystem accelerator is not maximized. In general, The triumph of the halal sector necessitates collaboration and involvement of diverse participants, along with well-planned promotional tactics, among many other factors that support the positioning of "Halal" as one of the attributes consumers consider when consuming. Research is an introduction to studying the infrastructure of the halal industry so that it recommends further elaboration regarding the potential development of the halal industrial area and its challenges with other approaches, for example, interviews with area owners and actors of the halal industrial area, especially in exploring obstacles that occur in the field.

#### References

- Abd Rahman, F., Nor Haslina Saad, S., & Muhammad, A. (2016). An Overview of the Shariah Governance of the Halal Industry in Malaysia: With Special Reference to the Halal Logistics. *J. Appl. Environ. Biol. Sci*, 6(11S), 53–58.
- Abdelali, B. Z., & Ngah, B. bin. (2019). Empirical Analysis of Mcdonald's Fast-Food in Malaysia Based on Halāl Food Regulations in Sūrah Al-Mā'idah. *Asian Social Science*, 15(7), 134. <https://doi.org/10.5539/ass.v15n7p134>
- Ahmad, A. N., Ungku Zainal Abidin, U. F., Othman, M., & Abdul Rahman, R. (2018). Overview of the halal food control system in Malaysia. *Food Control*, 90, 352–363. <https://doi.org/10.1016/j.foodcont.2018.02.035>
- Ahyar, M. K. (2020). Halal Industry and Islamic Banking: A Study of Halal Ecosystem Regulation in Indonesia. *Journal of Finance and Islamic Banking*, 2(2), 165–182. <https://doi.org/10.22515/jfib.v2i2.1929>
- Ainin, S., Feizollah, A., Anuar, N. B., & Abdullah, N. A. (2020). Sentiment analyses of multilingual tweets on halal tourism. *Tourism Management Perspectives*, 34(January 2019), 100658. <https://doi.org/10.1016/j.tmp.2020.100658>
- Antonio, M. S., Rusydiana, A. S., Laila, N., Hidayat, Y. R., & Marlina, L. (2020). Halal Value Chain: A Bibliometric Review Using R. *Library Philosophy and Practice*, 2020(November 2020), 1–25.
- Awan, H. M., Siddiquei, A. N., & Haider, Z. (2015). Factors affecting Halal purchase intention – evidence from Pakistan's Halal food sector. *Management Research Review*, 38(6), 640–660. <https://doi.org/10.1108/MRR-01-2014-0022>
- Azam, M. S. E., & Abdullah, M. A. (2020). Global halal industry: realities and opportunities. *International Journal of Islamic Business Ethics*, 5(1), 47. <https://doi.org/10.30659/ijibe.5.1.47-59>
- Baharuddin, K., Kassim, N. A., Nordin, S. K., & Buyong, S. Z. (2015). Understanding the Halal Concept and the Importance of Information on Halal Food Business Needed by Potential Malaysian Entrepreneurs. *International Journal of Academic Research in*

- Business and Social Sciences*, 5(2), 170–180. <https://doi.org/10.6007/ijarbss/v5-i2/1476>
- Bashir, A. M. (2020). Awareness of purchasing halal food among non-Muslim consumers: An explorative study with reference to Cape Town of South Africa. *Journal of Islamic Marketing*, 11(6), 1295–1311. <https://doi.org/10.1108/JIMA-04-2018-0077>
- Bin Yusoff, M. N. H., Zainol, F. A., & Bin Ibrahim, M. D. (2015). Entrepreneurship education in Malaysia's public institutions of higher learning-A review of the current practices. *International Education Studies*, 8(1), 17–28. <https://doi.org/10.5539/ies.v8n1p17>
- Budiandru, Mr. (2021). Factors Affecting Islamic Social Reporting in the Halal Industry Sector. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(3), 4521–4529. <https://doi.org/10.17762/turcomat.v12i3.1841>
- Can, B. A. (n.d.). *HALAL FOOD MARKET WITH STATISTICS IN THE WORLD AND THE POTENTIAL OF TURKEY IN THE MARKET*. <https://www.researchgate.net/publication/364823457>
- Choong, D., & Hedrick-Wong, Dr. Y. (2014). MasterCard Global Destination Cities Index. *MasterCard Worldwide Insights*, 44.
- Dahlan, A., & Wildan, M. (2022). *el-Jizya : Jurnal Ekonomi Islam ISSN : 2579-6208 ( Online ) Analisis Ekonomi Politik Terhadap Kebijakan Pemerintahan Jokowi pada Sektor Kawasan Industri Halal ( KIH ) dan Perbankan Syariah*. 10, 105–122.
- Dewi, G., Maudyna, M., Fauzi, F., Taqiya, V. Z., Permatasari, E., & Rahajeng, A. N. (2021). *Analysis on Halal Hotel Regulations in 5 Tourism Spots in Order to Increase Halal Tourism in Indonesia*. <https://doi.org/10.4108/eai.18-11-2020.2311644>
- Essoo, N., & Dibb, S. (2004). Religious Influences on Shopping Behaviour: An Exploratory Study. *Journal of Marketing Management*, 20(7–8), 683–712. <https://doi.org/10.1362/0267257041838728>
- Fauzi, F. A., Karia, N., & Mokhtar, M. A. M. (2017). The antecedents of Halal competency model: Towards improvement of Halal certification for SMFES' products. *International Journal of Business, Economics and Law*, 14(5), 18–28.
- Fischer, J. (2015). *Islam, Standards, and Technoscience: In Global Halal Zones (1st ed.)*.
- Gayatri Anggarkasih, M., & Sukmana Resma, P. (2022). The Importance of Halal Certification for the Processed Food by SMEs to Increase Export Opportunities. *E3S Web of Conferences*, 348, 00039. <https://doi.org/10.1051/e3sconf/202234800039>
- Haji Sulaiman, N. S., & Hashim, N. (2021). Halal Certification Value Chain in Brunei Darussalam. *Dinar : Jurnal Ekonomi Dan Keuangan Islam*, 8(2), 24–34. <https://doi.org/10.21107/dinar.v8i2.10814>
- Hamdan, H., Issa, Z. M., Abu, N., & Jusoff, K. (2013). Purchasing Decisions among Muslim Consumers of Processed Halal Food Products. *Journal of Food Products Marketing*, 19(1), 54–61. <https://doi.org/10.1080/10454446.2013.724365>
- Havinga, T. (2010). Regulating halal and kosher foods: different arrangements between state, industry and religious actors. *Erasmus Law Review*, 3(4), 241–255.
- Hidayat, S. E., & Musari, K. (2022). ASEAN towards a global halal logistics through the digitally enabled community. *International Journal of Asian Business and Information Management*, 13(2), 1–15. <https://doi.org/10.4018/IJABIM.20220701.0a1>
- Hosen, Muh. N., Hutagalung, A. Z., & Suma, M. A. (2022). Analisis Undang-Undang tentang Jaminan Produk Halal Dan Undang-Undang tentang Cipta Kerja (Antara Kenyataan Dan Keberlanjutan). *YUDISIA : Jurnal Pemikiran Hukum Dan Hukum Islam*, 13(1), 103. <https://doi.org/10.21043/yudisia.v13i1.13721>

- Hudaefi, F. A., & Jaswir, I. (2019). Halal Governance in Indonesia: Theory, Current Practices, and Related Issues. *Journal of Islamic Monetary Economics and Finance*, 5(1), 89–116. <https://doi.org/10.21098/jimf.v5i1.1049>
- Ireland, J., & Rajabzadeh, S. A. (2011). UAE consumer concerns about halal products. *Journal of Islamic Marketing*, 2(3), 274–283. <https://doi.org/10.1108/17590831111164796>
- Ismail, N., Md Husin, M., Bhatti, T., & Aji, H. M. (2018). Islamic Branding in Food Service Industry: Qualitative Study of Sellers' and Consumers' Perceptions. *Global Business and Management Research: An International Journal*, 10(3), 900–907.
- Izzati, K. (2021, March 2). KNEKS Kaji Arah Pengembangan KIH. *KNEKS*.
- Jamal Abdul Nassir, S., & Nur Shahira, M. A. (2009). *Pages\_from\_Dimension\_of\_Halal\_Purchase.pdf*.
- Júnior, A. A., & Broday, E. E. (2019). Adopting PDCA to loss reduction: A case study in a food industry in Southern Brazil. *International Journal for Quality Research*, 13(2), 335–347. <https://doi.org/10.24874/IJQR13.02-06>
- Mogalakwe, M. (2006). The Use of Documentary Research Methods. *African Sociological Review*, 1, 221–230.
- Mohd Nawawi, M. S. A., Abu-Hussin, M. F., Faid, M. S., Pauzi, N., Man, S., & Mohd Sabri, N. (2020). The emergence of halal food industry in non-Muslim countries: a case study of Thailand. *Journal of Islamic Marketing*, 11(4), 917–931. <https://doi.org/10.1108/JIMA-05-2018-0082>
- Nasution, L. Z. (2020). Penguatan Industri Halal bagi Daya Saing Wilayah: Tantangan dan Agenda Kebijakan. *Journal of Regional Economics Indonesia*, 1(2), 33–57. <https://doi.org/10.26905/jrei.v1i2.5437>
- Noordin, N., Noor, N. L. M., & Samicho, Z. (2014). Strategic Approach to Halal Certification System: An Ecosystem Perspective. *Procedia - Social and Behavioral Sciences*, 121(September 2012), 79–95. <https://doi.org/10.1016/j.sbspro.2014.01.1110>
- Prabowo, S., Rahman, A. A., Rahman, S. A., & Samah, A. A. (2015). Revealing factors hindering halal certification in East Kalimantan Indonesia. *Journal of Islamic Marketing*, 6(2), 268–291. <https://doi.org/10.1108/JIMA-05-2014-0040>
- Salman, F., & Kamran Siddiqui. (2011). An exploratory study for measuring consumers awareness and perceptions towards halal food in Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 3(2), 639–651.
- Sayekti, N. W., Mauleny, A. T., & Lisnawati, I. (2022). *Kawasan Industri Halal: Upaya Menuju Indonesia Pusat Produsen Halal Dunia*. Yayasan Pustaka Obor Indonesia.
- Sutrisno, E. (2021, March 2). Menyiapkan 3 Kawasan Industri Halal di Indonesia. *Indonesia.Go.Id*.
- Takhim, M., Sonjaya, A., Salim, Z., Rahman, A., Basmar, E., Abdullah, R., & Ali, M. (2023). The Synergy of Islamic Banks and Muslim-Friendly Tourism: Patterns of Halal Industry Development in Indonesia. *International Journal of Sustainable Development and Planning*, 18(9), 2723–2731. <https://doi.org/10.18280/ijstdp.180911>
- Yoga, I. (2019). Halal Emotional Attachment on Repurchase Intention. *Shirkah: Journal of Economics and Business*, 3(1). <https://doi.org/10.22515/shirkah.v3i1.206>
- Yunos, R. M., Mahmood, C. F. C., & Mansor, N. H. A. (2014). Understanding Mechanisms to Promote Halal Industry-The Stakeholders' Views. *Procedia - Social and Behavioral Sciences*, 130, 160–166. <https://doi.org/10.1016/j.sbspro.2014.04.020>