



Halal Logistics Performance Index (HLPI) Conceptual Proposal: A Case Study on United State of America-Malaysia Food Trade to Support Halal Industry

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Abstract. The Logistics Performance Index, a global survey of logistics performance has been established for decades. However, to address niche areas such as halal integrity along the logistics chain and interaction, modification in indexing to present wholesomeness and hygiene aspects will demand a holistic scale to be considered. Therefore, Halal Logistics Performance Index provides a sufficient method to be determined by local experts involved in logistics services. The authors endeavor a modification index that stresses the halal standard produced by the Malaysia Standard agency and national legal requirements. The effort is in line with the nation's aims to fulfill Sustainability Development Goal (SDG) and Shared Prosperity Vision in 2030 through Key Economy Growth Activities (KEGA). The approach of the study includes a qualitative method in literature review and articles analysis. The case study based on US-Malaysia trade activity is expected to provide an optional scale of halal logistics performance index for logistics industry players and recognize standards on matters regarding the wholesomeness of logistics services. The study is believed to provide a new catalyst for the international halal logistics trade benchmark by providing responsible consumption, environmental sustainability, animal welfare protection, and overall safety for current and future generations.

Keywords: Halal Logistics Performance Index, Halal integrity, trade facilitation, Malaysia Standard

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INTRODUCTION

Logistics is part of the process that involves its operation including controls and implementation of efficient flows of goods, services, and information; the creation of value in the planning chain from the source to consumer (De Souza et al, 2007). The importance of logistics already recognizes for more than two decades, and the function of these key components in warehouse, storage, inventory, information systems, freight forwarding, and transportation play fundamental elements toward the economy and industrial sustainability (Rushton et al, 2014).

The importance of the logistics performance index was started with the Agreement on Trade Facilitation in 2013 which pressed on commercial and trade facilitation, and agriculture impetus to encourage global efforts toward mitigating differences and helping developing countries (Martí et al, 2017). The agreement brings an effective in customs procedures and border management by strengthening particular provisions (Sanz, 2014), even if the efficiency of the effort is not successfully guaranteed. This is because, only a minimum standard was recommended (Arvis et al, 2014) based on the country's ability to comply with global commercial requirements (Martí et al, 2017).

However, the need for an index as an instrument to measure and to do a comparison between each nation is crucial. To understand corporations and country's existing positions, business partners, and adjustment possibilities will bring precious feedback to the respective countries to maintain competitiveness. The introduction of the Logistics Performance Index (LPI) by the World Bank indicates that its objective is to measure feedback from respondents from various country using quantitative method through survey and to analyze logistics supply chain efficiency (Martí et al, 2017).

Logistics Performance Index (LPI) is a tool to benchmark the logistics service player performance along the supply chain of each country (Bakar et al, 2014). Elements consist in LPI particularly focusing on six indicators such as customs, infrastructure, international shipment, logistics competence, tracking and tracing also timeliness (Martí et al, 2017). Even though such indicators provide sufficient output for logistics performance effectiveness and efficiency, existing measurement scales failed to provide value creation of each indicator, especially on the integrity of the logistics services and business sustainability. These include halal and wholesomeness branding, go-green culture, animal and human welfare, safety on product consumption, etc. Therefore, the study will propose a compliance conceptual proposal reflecting on Halal Logistics Performance Index (HLPI) with an adjustment of index indicators to reflect the Malaysia ecosystem.

TRADE FACILITATION AND LOGISTICS INTEGRITY

United State of America – Malaysia Trade Activities

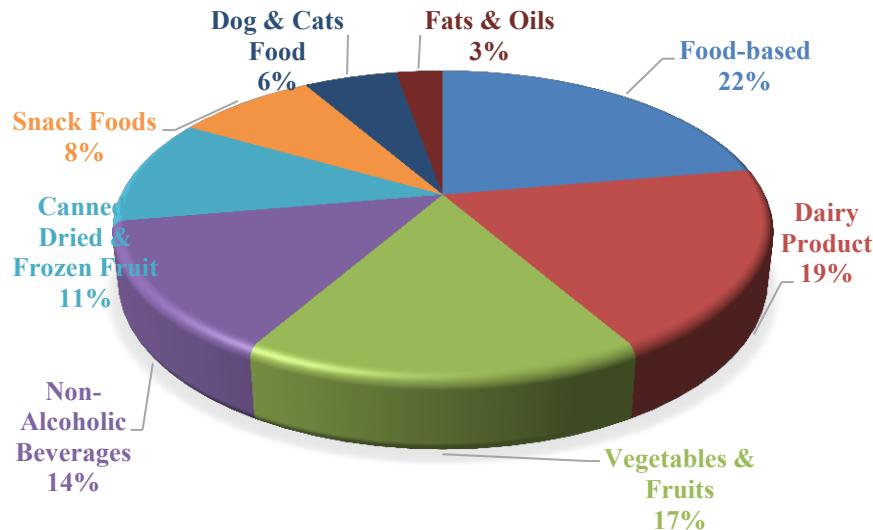
Malaysia's economy, which is among the most open in the world, is highly dependent on global trade. In order to create jobs and increase incomes, a country had to be friendly to trade and investment. Malaysia aims to lead the export of electrical and electronic components as it moves towards greater value-added activities (USDA Report, 2021), but the increase in the number of population in Malaysia, demands more food-based importation for internal use. Therefore, Malaysia has actively strengthened bilateral trade

and investment ties by gearing partnerships with world economy players. This effort translated into action suchas Joint Committee on Bilateral Trade and Investment Cooperation (JCBTIC) in 2020 between Malaysia and the United Kingdom (U.K.) (MITI Bulletin, 2020), the signing of the Regional Comprehensive Economic Partnership (RCEP) (News Strait Times, 2021), with nine Southeast Asian countries and major economic nations such as New Zealand, Australia, China, South Korea, and Japan; the world's largest tradeagreement generated nearly a third of global gross domestic product (GDP), and the anticipation in regional value chains, to promote harmonization and transparency for technical regulations and standards. In long term, the ecosystem imagines by the nation will track intra-regional trade and investment to comply with international requirements. The food and beverage market in Malaysian is considered the most sophisticatedand developed compared to other countries in the region, however the raw materials supplied by both local andimported products.

The value of US agricultural exports to Malaysia fell by 8 percent to \$1 billion in 2020, affected by the domestic economy shock caused by the coronavirus pandemic and the internal recovery plan. Consumer-ready exports from the United States grew 4 percent to US\$506.7 million, or slight over half of the total for agricultural exports. Malaysia is the fifth-largest market in Southeast Asia for the export of processed fooditems from the United States, with exports reaching US\$461.4 million in 2020, a record high and a rise of 5 percent (USDA Report, 2021). The top processed foods exported from the United States to Malaysia in 2020 were:

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CHART 1.0:
USA-Malaysia Trade Ranking by Commodity



Source: Foreign Agricultural Service., "Malaysia: Food and Agricultural Import Regulations and Standards Country", US Department of Agriculture (USDA) Report, Dec 2021.

Approximately 61 percent of Malaysia's population is Muslim, halal food consumption has grown over time (Jabatan Perangkaan Malaysia, 2021). The demand for halal-certified food products has expanded beyond meat and meat-based goods to include snacks, confectionery, dairy, bakery, etc. Nearly all foods and ingredients intended for the food service industry need to be halal-certified. As to maintaining the importance of wholesomeness and integrity in Sharia compliance, halal quickly recognize and accepted as a new standard for cleanliness, quality, and safety. Halal-certified food items and ingredients in Malaysia have higher commercial value. Beyond the demand, integrity in the logistics chains is also important to guarantee the "farm to fork" undoubtedly activities to ensure not only the safeness of the ingredient chain but also the cross-contamination issue. As a result, the majority of food producers, food service operators, and retailers are likely to request halal integrity chain documentation to protect their brand and reputation (USDA Report, 2021). Therefore, trade activities between USA and Malaysia were also affected by the series of halal integrity implementations beyond the product/commodity physical appearances and ingredients. Every single detail in trade facilitation will also accompany US seriousness to implement not only to offer halal products, but also a halal logistics chains. Below is a United State Department of Agriculture (USDA) public eyed-report on Malaysia's trade progress;

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TABLE 1.1:
Malaysian Market Opportunities and U.S. Supplier Challenges

OPPORTUNITY	CHALLENGES
Food and agricultural goods from the United States are regarded as trustworthy and high-quality.	The Malaysian market requires many U.S. goods to be halal certified, which may be a challenging procedure.
A broad variety of imported food items and ingredients are required by Malaysia's robust economy and growing rapidly hotel, restaurant and institutional (HRI) industry.	Rising inflation may reduce consumer purchasing power.
The majority of imported foods and beverages have minimal import and customs duties (except for alcoholic drinks).	Both Australia and New Zealand have free trade agreements with Malaysia and are well-represented in the nation's food and beverage business, which is geared toward consumers.

Major cities are dedicated to a sizable number of American-style dining and cafés, making it simpler for new American products to find a market.	Products from China and other ASEAN nations are overtaking Australia and New Zealand in market share
The high standards of quality and hygiene upheld by the high-end HRI segment bode well for the future of American food and beverage production.	Most Malaysian consumers only eat at premium establishments on exceptional occasions.

Source: Foreign Agricultural Service., "Malaysia: Food and Agricultural Import Regulations and Standards Country", US Department of Agriculture (USDA) Report, Dec 2021

Malaysia's food processing sector contributes 12 percent of the nation's industrial output and is expanding at a rate of about 3 percent per year (Jabatan Perangkaan Malaysia, 2021). Within and around Kuala Lumpur, several multinational corporations operate regional manufacturing facilities, and the Malaysian government has recognized the food processing sector as a vital component of the country's future economic growth. The industry produces drinks, canned fish, canned fruits, canned vegetables, confections, dairy products, noodles, and bakery items. It also has various businesses owned by multinational corporations (USDA Report, 2021). More than 8,000 enterprises, ranging from small and medium-sized businesses to significant multinational company facilities, are listed by the Malaysian Investment Development Authority (MIDA) as part of the local food processing sector (Jabatan Perangkaan Malaysia, 2021). Malaysia's trade and regulatory requirements are comparatively open and offer prospects for a wide range of ingredient items, even though the nation's halal standards restrict trading for some products.

In 2019, Malaysia imported almost US\$18.3 billion worth of agricultural goods, with the US accounting for around 7 percent of those imports. There is insufficient domestic production of several essential components for food processing, therefore U.S. exporters have almost no competition from domestic suppliers (wheat, soybeans, potatoes, dairy products, dried fruit, nuts) (A. Ababa & R. Bickford, 2020). However, Thailand, China, Australia, and New Zealand are fierce competitors for American exporters. The pricing is reasonable, and they have an edge compared to the US in terms of freight charges and delivery times due to their distance to Malaysia. Furthermore, a well-established halal food business targeted toward exports to Muslim consumers exists in Australia and New Zealand (A. Ababa & R. Bickford, 2020).

To have a massive picture of well-inform Malaysia regulatory and halal integrity effort reported by Global Agriculture Information Network (GAIN-USDA) (A. Ababa & R. Bickford, 2020), the below table provide sufficient terms and conditions so-called control trade requirement imposed by Malaysia;

TABLE 1.2:
 USA-Malaysia Food and Agricultural Import Regulations and Standards

SECTION	DETAIL	LEGAL & STANDARD
Section I. Food Laws	To govern food safety and quality control, including food standards, food hygiene, food import/export, food advertisement and accreditation of laboratories.	Malaysia's Food Act 1983 Food Regulations of 1985
Section II. Labeling Requirements	Pertaining to labeling requirements such as language to be used, particular in labelling, form and manner in labelling, date marking, matters forbidden on labels, specific nutritional labeling, nutrient contain and comparative claim, nutrient function claim, and biotechnology.	Food Regulations of 1985 "Guidelines on Labeling of Foods and Food Ingredients Obtained through Modern Biotechnology"
Section III. Packaging and Container Regulations	Pertaining to packaging and container regulations such as restrictions and limitations on packaging materials.	Food Regulations of 1985
Section IV. Food Additives Regulations:	Pertaining to food additives regulations such as food additive labeling requirements.	Food Regulations of 1985
Section V. Pesticides and Other Contaminants	Enforces regulations concerning pesticide residues in foodstuffs and pertaining to pesticides and other contaminants such as pesticide residue	The Pesticides Act 1974 Pesticides Registration Rules 1976

Section VI. Other Requirements, Regulations and Registration Measures	Ensure food items imported into the country are safe and comply with the prescribed standards and regulations in commodities such as plant and plant products, live animals/birds, meat and meat products (except pork), health and medicinal food products, animal-based further processed products, including milk and egg products, dairy facility registration	Agricultural Pests and Noxious Plants (Import/Export) Regulations 1981 Control of Slaughter Rules 1975 Malaysian Standard for Halal Food (MS1500:2009). Dangerous Drugs Act 1952 Control of Drugs and Cosmetics Regulations 1984
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Section VII. Other Specific Standards	Pertaining to Special Purpose Food	Food Regulations of 1985
Section VIII. Trademarks, Brand Names and IntellectualProperty Rights	Provide protection against misuse of trademarksand brand names.	Malaysian Trade Marks Act 1976 (Act 175) Trade Marks Regulation 1983
Section IX. Import Procedures	Responsible for ensuring efficient collection of indirect taxes, such as customs duty (import andexport), excise duty, sales tax, and service tax	Customs Act 1967.

Source: A. Ababa and R. Bickford (2020), "Food and Agricultural Import Regulations and Standards Country Report by Global Agriculture Information Network"

LOGISTICS PERFORMANCE INDEX (LPI)

Business trade between nations creates a competitive environment (Ulutaş, A., & Karaköy, Ç., 2019) and logistics has also become more important in playing its role as a 'mobility mechanism' to impact global industries and activities. The activities will sprightly influence the velocity and product safety, guarantee product mobility, promote new industries as well as a welcoming reduction in cost trading (Martí, et al., 2014) that reflected the competitive competition. The situation creates a symbiosis relationship caused by the acceptance of the logistics service industry in the economy mainstream with strong interdependence between both parties; the private and the nation (Kawa, A., & Anholcer, M. 2019). This relationship is significant to introduce sustainable competitive advantage in logistics and supply chain management (Çakır, 2017) especially to reduce defects in the packaging process, address storage and transportation issues, and also promoting value creation and integrity.

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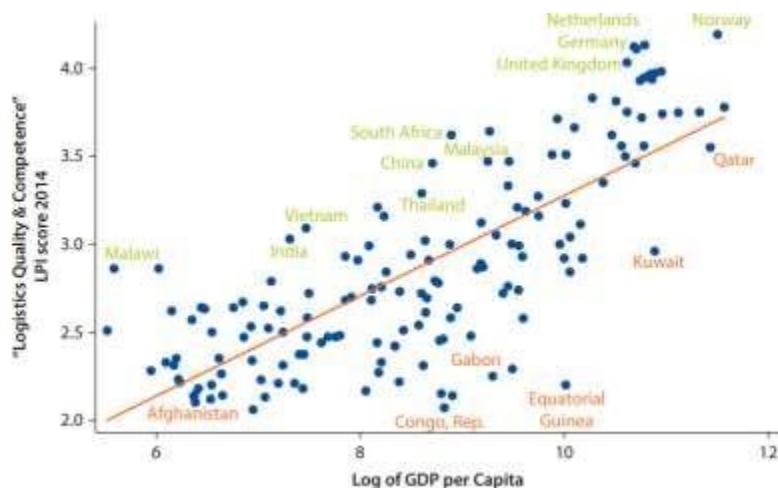
The logistics performance index measure the effectiveness and efficiency of six indicators introduced by the World Bank Study based on a proposition made by academic studies (Arvis et al, 2014). The indicators consist of efficiency of customs and border clearance, quality of trade and transport infrastructure, ease of arranging competitively priced shipment, competency and quality logistics service, ability to track and trace the consignment, and the timeliness of expected delivery frequency (Martí, et al., 2017). The performance measure in LPI is also related to logistics management and trade facilitation provided by logistics players and government commitment. Logistics management plays important role in planning, implementing, and controlling activities regarded as part of the supply chain structure. It is crucial to managing the movement of reversed freight efficiently and effectively, as well as the storage of goods and associated information between the production site and the point of consumption (CSCMP, 2014). On the other hand, government efforts to harmonize and simplify trade facilitation operations would provide a favorable trading environment for local and foreign participants to engage in

international trade and undoubtedly promote the development of the national economy (Florian A. Alburo, 2008). Modernizing the port and reforming customs standard regulations are essential to achieving positive results that benefit everyone (Otsuki, T. et al., 2013).

Malaysia also benefits from the recognition provided by the LPI when globally position itself at 25th place out of 166 countries counted in 2014. But the position was dropped to rank 41 out of 163 in the year 2018. Issues which not yet addressed accordingly such as lacking the in-depth research areas need to explore such as empirical findings and index substitution (Bakar & Jaafar, 2016). Hence, a customized indication or criteria will be developed, enhancing Malaysia's position on international stages rather than relying merely on a broad scale of requirements for evaluation. Additionally, it made Malaysia and other nations more competitive in terms of market commerce and business. This is consistent with earlier research that showed clients to be the final arbiters of the value that efficient logistics creates. Therefore, this study will offer a new spectrum of halal implementation in the logistics performance index, enriching the measuring scale for the economic advantages of the halalan toyibban logistics chain for halal products and meeting local and global demand. Malaysia for instance, impressively provides the outstanding scores in the conventional logistics index in 2014, which the LPI score in the "Logistics Quality & Competence" category above the average level. This can be observed in Figure 1.0 below;

FIGURE 2.0:
LPI 2014 "Logistics Quality & Competence" Score, Over- and Underperformers

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Source: Mckinnon, A., Flöthmann, C., Hoberg, K., & Busch, C. A. (2017). World Bank Study: Logistics Competencies, Skills, and Training – A Global View

Malaysia show tremendous achievement in Logistics Performance Index in 2014 (refer Fig.2.0) by

placing its position in over-performers quality and competencies score GDP per capita. The method of measurement considered criteria used in the survey (Martí, et al., 2017) include;

- i. The efficiency of customs and border clearance
- ii. Quality of trade and transport infrastructure
- iii. Ease of arranging competitively priced shipments
- iv. Competence and quality of logistics services—primarily in trucking, forwarding, and customs brokerage
- v. Ability to track and trace consignments
- vi. Timeliness—the frequency with which shipments reach consignees within scheduled or expected delivery times

The effectiveness and efficiency of logistics are key factors in the nation's economy's volatility (Yildirim, B. F., & Mercangoz, B. A., 2019). LPI is used to offer limited data, such as value in detail, chances to help nations, and benchmarking instruments, to establish competitiveness in trade logistics (Çakır, 2017). As a result, the research recommended gathering and analyzing additional data to retain a firm and national competitive edge for business sustainability. This includes halal logistics, green business practices, product safety, and the welfare of the living. The idea is also supported by earlier research that emphasized the importance of using government influence to determine which internal logistics subsystems—or, in the absence of an internal evaluation, cross-country assessments—need to be developed,

improved, or eliminated through initiatives and policies that can boost a nation's logistical competitive advantage (Jhawar et al., 2017). Therefore, based on currently used worldwide rating scales, it is also possible to measure particular indicators, but only with progress in a small specialist area that focuses on an underdeveloped logistics system. This is crucial because the government must comprehend where its logistics and transport infrastructure falls short of those of other nations. Therefore, a strategy in trade facilitation is to place a nation's logistical competence on global trade, participation, and public policy (Beysenbaev & Dus, 2020). This effort not only harmonize and simplify trade procedures, but also introduces and recognizes integrity, and halal value creation in halal logistics performance. Soon et al, (2017) and Tieman (2017) defined halal integrity as an assurance and unquestionable status of product condition which created values for stakeholders (Yunan, et al., 2020). Integrity and value creation in logistics performance becoming significantly important as it is accordance with the increase of e-commerce, logistics technology and virtual market (Ulutaş, A., & Karaköy, Ç., 2019). Integrity in halal logistics includes integrity in determining raw materials, management systems, servicing, labeling for information, and outsourcing (Yunan, et al., 2020).

INTEGRITY IN LOGISTICS AND HALAL COMPLIANCE

Halal is a term derived from the Quran and Hadith to mean "allowed" or "lawful" (Tieman M., 2007). The reversal of the terms used above, referred to as Haram or non-halal, is something that is prohibited, unlawful, or unjustified (Tieman, M., 2015). To preserve halal conditions in products, processes, and

manufacturing, more exact detail must be provided in the logistics sector specifically by Sharia's requirements. This involves obtaining the necessary materials, dealing with contamination problems, and determining what is filthy or dirty (Najs) (Ab Rashid & Bojei, 2019). Halal integrity included dependability, correctness, and consistency in terms of substance, method, procedure, and system, fostering trust toward both the product and the production line (Zailani et al., 2019). Additionally, the grace line to the halal ascend involves quality and uncompromising assurance at all manufacturing and supply chain stages, including product materials, processes, storage, transportation, and staffing (Tieman M., 2007;Jaafar, et al, 2011). Hadith narrated by Nu'man Basyir r.a, from Prophet Muhammad s.a.w said;

"I've heard Allah's Messenger (صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ) saying, 'Both legal and illegal things are evident but in between them there are doubtful (suspicious) things and most of the people have no knowledge about them. So whoever saves himself from these suspicious things saves his religion and his honor. And whoever indulges in these

suspicious things is like a shepherd who grazes (his animals) near the Hima (private pasture) of someone else and at any moment he is liable to get in it. (O people!) Beware! Every king has a Hima and the Hima of Allah on the earth is His illegal (forbidden) things. Beware! There is a piece of flesh in the body if it becomes good (reformed) the whole body becomes good but if it gets spoilt the whole body gets spoilt and that is the heart."

Al-Bukhari (45) & Muslim (133)

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The hadith at above clearly explained those that Allah and His Messenger have determined as halal will remain halal, and things that Allah and His Messenger have ordered as haram will remain haram. However, there is something between the two that is ambiguous as to whether it is halal or haram. This is known as 'syubhat' (Luqman T., 2019). This includes social responsibility toward environmental protection and sustainability for future generations as part of the requirement in Maqasid Sharia' or Islamic lawpriority (Hanapi & Khairuldin, 2017). Both issues regard of halal toyyiban and green were stressed frequently in the divine book – Quran Al Kareem; to show the importance of believers understanding the value chain of a safe and hygienic lifestyle, and being responsible for the environment around them. Therefore, the below table shows the Quran verses about the importance of halal compliance and environmental sustainability entrusted to human as caliph of the earth as follow;

TABLE 3.0:
Quran Verse on Halal & Environment Protection

No.	Surah	Verse	Content
1	Al-Baqarah	11	"...do not cause corruption on the earth."
2	Al-Baqarah	60	"...eat and drink of Allah's provisions, and do not go about spreading corruption in the land..."
3	Al-	205	"Allah does not like mischief..."

	Baqarah		
4	Al-Maidah	64	“...and they strive to spread corruption in the land. And Allah does not like corruptors.”
5	Al-Araf	56	“Do not spread corruption in the land after it has been set in order.”
6	Al-Araf	74	“...and do not commit abuse on the earth, spreading corruption”
7	Al-Araf	85	“Do not defraud people of their property, nor spread corruption in the land after it has been set in order.”
8	Al-Araf	142	“...and do not follow the way of the corruptors.”
9	Hud	61	“He has produced you from the earth and settled you in it...”
10	Hud	85	“...do not defraud people of their property, nor go about spreading corruption in the land...”
11	Al-Isra'	37	“...and do not walk on the earth arrogantly...”
12	Al- Syara'	183	“...and do not defraud people of their property. Nor go about spreading corruption in the land.”
13	Al-Qasas	77	“...and desire not corruption in the land. Indeed, Allah does not like corruptors.”
14	Al-Ankabut	36	“Do not commit abuse on the earth, spreading corruption...”
15	Luqman	18	“...indeed Allah does not like whoever is arrogant, boastful...”

Source: Author's

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However, common fact demonstrates that businesses and nations have inadequate control over supply chains, including logistics and retail chains (Tieman, M., 2015). Therefore, the assurance of halalness, including distribution and transportation of the products, needs to be verified by standard compliance to satisfy the halal market demand locally and worldwide (Latif et al., 2014). In this instance, Malaysia takes the initiative to provide adequate standards and regulations to satisfy the needs of the religious community, the environment, product safety, and the welfare of livings. In addition to upholding its reputation, Malaysia also offers halal value creation on logistics performance. The standards and regulations established were meant to be proposed by the study as a control point for the halal logistics performance index as below;

Malaysia Standard and Legal Requirement in Halal Compliance

Malaysian Standard

- a. The MS 1500:2004 (2009 – 2nd version) produced by Malaysian Standard, is a general guideline to manufacturer and producer in halal food products which include their responsibility for the storage and handling process (Zailani et al., 2019). The procedures stressed operation strategy as well as product mobility and storage. The standard focus starts from the preparation of tangible and intangible requirement until the transportation and storage placement to identify the hazard critical control point, particularly in cross-contamination.

- b. The MS 2400-2019 Halal Supply Chain Management System is replacing the previous standard called MS 2400-2010 Halalan Toyyiban Assurance Pipeline consists of;
 - i. Part 1: Transportation – General Requirement focusing on preserving halal integrity within the supply chain process in accordance with Sharia's requirement by setting up a standard with comprise of a sufficient management system to preserve goods, products and/or cargo halalness in transportation and freight forwarding.
 - ii. Part 2: Warehouse – General Requirement focusing on preserving halal integrity within the supply chain process in accordance with Sharia's requirements by setting up a standard with comprise of sufficient management system to preserve goods, products and/or cargo halalness in storage and/or warehouse.

Malaysia's Laws and Regulation

- a. Trade Descriptions (Halal Definition) Act 2011 stressed in Article 3 that product described as halal as long as not contain any part or matter prohibited by Sharia'law for a Muslim to consume or contain anything which is impure, intoxicate, poisonous or hazardous to health, prepared, processed or manufactured using any instrument contaminated with impure, including the course of preparing, processing or storing which impure or contamination as prescribed by the Islamic law. This includes any representation or act which mislead or confuses the consumers as stated under Article 4 of using any object concerning Islam either in the premises or container in which such food is supplied or sold.
- b. Food Act 1983, Food Regulation 1985, and Food Hygiene Regulation 2009 are legislation enforcement on consumer safety and health. That act provides provide protection against harmful substances and ingredients, misconduct in sales and promotion, and misinformation in labeling and marketing as per stated in Section 13(1) and Section 16 (Norazla et al., 2015). Both section indirectly takes into account halalan-toyyiban requirement such as purification and cleanliness.
- c. Animal Act 1953 revised 2006 regulations provide an implementation of the proper slaughter process, management, and the welfare of the animals. The Act empowered authority to examine the livestock condition, and safety of animal feed, as well as to ensure that the halal slaughter procedures have been implemented other than its welfare been prioritized.
- d. Customs Act 1967 and the Customs (Prohibition of Imports) Order 1988 provide sufficient legitimate power to act for Royal Malaysian Customs on the issue of the importation and the entry of halal products either for import or export purpose. All recognition of foreign halal certification bodies verified by the Department of Malaysia Islamic Development (JAKIM) will determine under customs rules and regulations on importation. The department will also be

responsible for any time release procedure to maintain the safety of any import and export products at the country border.

HALAL LOGISTICS PERFORMANCE INDEX (HLPI)

Previous studies on logistics performance index are limited to evaluate country-level logistics efficiency and tend to focus on the micro-logistics systems; to compare countries' logistical and transport systems to understand the existing bottlenecks. The outcomes produce The Logistics Performance Index (LPI) by the World Bank, the Agility Emerging Markets Logistics Index (AEMLI) by the Agility Logistics Company, and the Global Competitiveness Index "Basic requirements" sub-index "Infrastructure" pillar (GCII) issued by the World Economic Forum (Çakır, 2017). Even so, no effort done by any parties to provide a sufficient index on the halal-toyyiban and sustainable environment as part of player's and country's responsibilities.

Therefore, this research introduces; The Halal Logistics Performance Index as a new catalyst to achieve Malaysia's Key Economy Growth Activities (KEGA) and Sustainable Development Goals (SDG) as part of Malaysia's contribution to the nation and international agenda. The new logistics performance indicator is intended to influence the industry participants' and nations' preparation for the global demand for the halal supply chain. Therefore, it's crucial to have an index with constant, standard components to ensure the efficacy and efficiency of the halal logistics performance.

Halal Logistics Performance Index (HLPI) evaluates the performance and efficacy of six criteria or indicators. Five indicators—the "efficiency of customs and border clearance," "quality of trade and transportation infrastructure," "competency and quality logistics service," "ability to monitor and trace the consignment," and "the timeliness of projected delivery frequency"—were kept from the original index. Since the index focuses on the significance of upholding integrity in the halal chain of logistics and transportation, the indicator that refers to "ease of arranging competitively priced shipping" is not included in the HLPI. Since the scale's goal is to maintain halal integrity by ensuring that items are handled and kept correctly to support diverse supply chain activities, competitive shipping prices won't be scaled in HLPI. To preserve integrity, the halal and non-halal must be segregated. A new phrase, "effectiveness compliance on logistics operation," has been added to the indicator. This indicator will examine how committed industry participants and authorities are to supporting and adhering to any rules, regulations, policies, and standards set by the government or by international guidelines for halal, safety, welfare, and ecological sustainability. Halal logistics refers to a chain of operations for managing goods, including food and non-food, whether they are finished inventory or part livestock, as well as handling relevant documents and flows, such as the organization's procurement, movement, storage, and information control (Jaafar et al., 2015). Since the purpose of the index introduction is to straighten the halal logistics performance index, the components to be measured as;

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a. Planning of Warehouse, Store, and Material Handling

Storage, warehouse, and material handling in this area are crucial to maintain halal integrity. It is synchronizing with Islamic values in safety, quality, and hygienic in terms of the source, production,

process, storage, and distribution of products including the welfare of the living (such as the animal) and fairly traded (Ibrahim et al. 2012). Thus, well plan for the warehouse, storage and material handling to control contaminations and degradation need to be identified from the raw material sources and water supply; equipment, containers, facilities, wastes and disposal management; a premise, workplace, air quality, environment, and layouts; human health, personal hygiene and sanitary; pest control management and processes critical control points (Malaysian Standards, 2010).

b. Packaging and Unification

Packaging and unification are part of maintaining halalan-toyyiban integrity on goods/products since it is physically involved in any possibility of contamination. The arrangement from the sources to the end of the process will be determined by flows and changes in the operations, packaging, and equipment (Shariff, S., & Ahmad, N., 2019). Therefore, appropriate control measures for each process master list documented materials used, management procedures, and operating procedures, including conducting a periodic reviews on operations need to be established.

c. Inventory Control

The logistics service providers, are responsible adhere to halal inputs provisions by providing adequate resources such as training and competencies for employees in Sharia and halal, defining jobs tasks to fulfill the Sharia requirements, and communication flow on processes of reporting regarding halal issues (Shariff, S., & Ahmad, N., 2019). To avoid cross-contamination in the supply chain process, all necessary controls measure must be taken to protect the integrity of the product (MH, Anuar & Talib MSA., 2014). Control of inventory halalness is important as the main purpose is to mitigate the risk possibility of contact with contaminants or najs that may cause during logistics processes especially when delivery and distribution (Bahrudin et al. 2011).

d. Transportation

Transportation is part of important activity in halal logistics for the delivery, and movement of the halal products (Ngah AH. & Zainuddin Y, 2012). This compliance includes the inbound and outbound of transportation services activities, the description and nature of related mobile and immobile equipment and containers, stacking, receiving, dispatch, and placement of the consignment, handling, and distribution flow process, and determining the modes of transportation. Preciseness in the process flow will assist to clear tracking and traceability of halal movements as well as to formulate a risk management plan and the possibility of risks contamination (Shariff, S., & Ahmad, N., 2019).

e. Information Control / Management System

Information control highly depend on the inputs of halal logistics operations. This includes the management and manpower, the equipment and machines appliances, materials and inventories, the procedures, processes and methods, information and operating system, financial support and funding, and environmental technology (Mohd Shariff et al., 2010). Therefore, informational control is a must to comply with the requirements of sharia', top management commitment and responsibility and also

provide clear documents and procedures in the halalan-toyyiban system.

Based on the above argument, the study proposed Halal Logistics Performance Index (HLPI) as stated in Table 4.0. The table clearly explains each logistics components compare to logistics performance indicators on the basis of Malaysia's halal standards and Malaysia's rules and regulation regarding the production of a food-based product and logistics service management. The index is expected to benefit the nation as a leading country in halal hubs especially in logistics competency.

CONCLUSION

Conceptually, a firm's or organization's success is measured by how well its logistics operations, but it also has an impact on the national interest. Over the years, this has drawn a lot of studies, including definitions, tools, and measuring techniques. Therefore, the efficacy and efficiency of logistical operations must be prioritized to identify the amount to which resources have been employed economically. To improve the value of "doing things correctly" and "doing the right thing," the study's goal is to protect the integrity and sustainability of the halal industry. The index may be used differently in each country depending on the laws and regulations that are in place there. It is also impacted by each nation's demographics, ideologies, political will, and religious beliefs. There may be distinctions between Muslim and non-Muslim nations. To determine the useful results of the index implementation, a study on such concerns must be done.

LOGISTICS COMPONENT	Planning (Warehouse, Storage & Material Handling)	Packaging & Unitization	Inventory Control	Transportation	Information & Control	Malaysia Act & Regulation
CUSTOMS	NIL	NIL	<ul style="list-style-type: none"> i. List of halal goods required for license include agricultural products, animals (living or dead), foodstuff, plants. ii. All incoming processed meat and livestock products must be certified halal and must originate from slaughterhouses inspected and approved by the Malaysian veterinary and religious authorities. 	NIL	<ul style="list-style-type: none"> i. Import and export licensing based on regulatory and halal standards requirement using single digital window called Dagang Net. ii. Documents required for importing and exporting includes customs export or import declaration, commercial Invoice, bill of lading, packing list, certificate of origin and further permits if required, additional approvals under the Customs (Prohibition of Export) Order, 1998. iii. Customs reduced tariff or tariff exemption on halal products/goods raw materials imported into Malaysia for use in the manufacture of exported goods particularly when such raw material is difficult to source domestically. iv. Customs clearance not exceed than 24 hour or based on products/goods halal and toyibban condition affected by lead times, multiple consolidations and break points, multiple freight modes, cost options, and long or unreliable transit times provide by manufacturers/producers. 	<ul style="list-style-type: none"> •Customs Act 1967 •Food Act 1983 •Animals Act 1953 (Revised 2006) •Trade Descriptions (Definition Of Halal) Order 2011 (Article 4)
INFRASTRUCTURE	All inbound and outbound warehouse and storage services, inclusive of the nature and description of containers and equipment; placement, stacking and storage conditions; dispatch, receiving, handling, and distribution activities with clear process flow diagrams for tracking and traceability on halal movements as specified in the standard.	Adhere with the provisions of halal inputs by provide adequate resources such as halal and syarikh compliant for equipment, machines, and appliances, packaging raw materials, inventories, sufficient trainings and communication processes for workers including design and image use in packaging.	NIL	All inbound and outbound transportation services, inclusive of the nature and description of containers and equipment; modes of transportation; dispatch, receiving, handling, and distribution activities with clear process flow diagrams for tracking and traceability on halal movements as specified in the standard.	<ul style="list-style-type: none"> i. Implemented syarikh and technical aspects dictated in the MS1500-2009 and MS2400-(1/2)2009 requirements. ii. Assure halalness aspects as in the Islamic law and technical controls for integrity and technicalities (toyibban) in managing the logistics processes and activities 	<ul style="list-style-type: none"> •Food Hygiene Regulations 2009
LOGISTICS EFFECTIVENESS	Halalan-toyyiban risk management plan to eliminate risks of contaminations from premise, workplace, air quality, environment and layouts including storage equipment, containers and facilities.	Halalan-toyyiban risk management plan to eliminate risks of contaminations from raw material sources, equipment, facilities includes personale health, hygiene and sanitary, aslo the processes critical control points.	Halalan-toyyiban risk management plan to eliminate risks of contaminations from the water and raw material sources, wastes and disposal management aslo the processes critical control points.	Halalan-toyyiban risk management plan to eliminate risks of contaminations from transportation equipment, containers, facilities,includes personale health, hygiene and sanitary.	Reap the trust benefits in terms of levelling the communication standards, high level of data sharing/transfer and highly synchronization between public-private partnership and international trade alliances.	<ul style="list-style-type: none"> •Food Act 1983 •Food Hygiene Regulations 2009

Table 4.0 Halal Logistics Performance Index (HLPI)

Table 2.0 Halal Logistics Performance Index (HLPI) (continue)

LOGISTICS COMPONENT	Planning (Warehouse, Storage & Material Handling)	Packaging & Unitization	Inventory Control	Transportation	Information & Control	Malaysia Act & Regulation
LOGISTICS COMPETENCE	The halal warehousing according to Shariah law - halal and non-halal products consistently and continuously be separated in warehousing to avoid the contamination	The use of halal materials especially for tertiary packaging of the halal products and avoidance of materials harmful to human health.	Managing the influencers which impacting logistics network including risk, lead time, cost, location, transport, and service levels.	The halal transportaion according to Shariah law - halal and non-halal products separated during transportation activities as to avoid the contamination	Alliance in technological collaboration, enhancing relational performance and changing the environmental demand.	•Food Act 1983 •Food Regulations 1985
TRACKING & TRACING	Documented written standard operating procedures (SOPs), process flows, and detailed descriptions of the tasks for warehouse/storage/ material handling based on objective evidences of records to ensure halal integrity, quality assurance, audits, and traceability purposes	Manage physically right from the sources by determining changes in the operations, packaging, and equipment that may affect the integrity of the whole halal processes and implementing appropriate control measures for each process.	Provide ICT infrastructures, incentives and ideal halal ecosystem to support halal-tech based businesses	Documented written standard operating procedures (SOPs), process flows, and detailed descriptions of the tasks for transportation modes based on objective evidences of records to ensure halal integrity, quality assurance, audits, and traceability purposes	Alliance in technological collaboration and changing the environmental demand by benefited from levelling the communication standards, data sharing/transfer and synchronization	•Food Hygiene Regulations 2009 •Food Act 1983 •Food Regulations 1985
TIMELINESS	i. Punctuality in logistics and people crossing services at arrival and departure of consignment according to a predetermined schedule for timely response in promoting satisfaction with handling complaints after service. ii. Reserve transportation modes in a stand-by schedule must be able to be operated within no more than 2 (two) hours after receiving an operating order from the official who sets the schedule. iii. The operator's ability to provide transportation services on time (up to the final destination) according to a set schedule is an indicator of timeliness.					•Value Chain Proposition (VCP)
MALAYSIA HALAL STANDARD (ISO) & REGULATION	• MS ISO 1500-2009 (Clause: 3.2/Clauses 3.4.2(c)& 3.4.3/Clauses 3.5.3/Clauses 3.6.1&3.6.2) • MS ISO 2400-2:2019	• MS ISO 1500-2009 (Clause 3.3/Clauses 3.4.2(a & d)/Clauses 3.5.3/Clauses 3.7.1 - 3.7.8)	• MS ISO 1500-2009 (Clause: 3.6.3)	• MS ISO 1500-2009 (Clause: 3.6.3) MS ISO 2400-1:2019	• MS ISO 1500-2009 • MS ISO 2400-1:2019 • MS ISO 2400-2:2019	

Source: Author's

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