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Halal Hub Sustainable Framework

Nur Faizah Mat Zain[1] , Harlina Suzana Jaafar[2] , Irwan Ibrahim[1,2], Hasbullah Othman[3]

[1]Malaysia Institute of Transport, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia

[2]Faculty of Business and Management, Universiti Teknologi MARA, 41500 Puncak Alam, Selangor, Malaysia

[3]Inti International University and College, Nilai, Negeri Sembilan, Malaysia

Abstract - The supply chain involves the connectivity of commitments involving administrations, people, activities, information and resources decorative in moving a product or service from the supplier to the customer. Hence, the hub plays an important point to the whole activities which evolve broader supply chain especially in logistics activities. Despite the importance of hub and its development around the world for transit of time, cost saving and punctuality, the emerging demand for halal supply chain in the recent years pretentious the establishment of halal industrial areas throughout Malaysia and led the arguments on the current implementation of the park operation. Extensive literature reviews from the existing halal supply chain and halal logistics were adopted in this paper, particularly from the year 2008 to 2018. This concept derived in this paper is then developed as fundamental for future studies.

Keywords: Logistics hub, halal supply chain, halal hub

1. Introduction

Distribution is an important point in the logistics park to ensure the movement of goods while transferring products. Some of the critical proportions for operative distribution are planning and forecasting, which provides respected insights into the season and year forward, as it does affect the plan of the service network. The whole activities of logistics is supported by a hub which means the industrial area or defined area for activities related to transport, logistics and the distribution of goods, regional, national and/or international transit, are carried out by several operators and they are desirable with intermodal facilities [36]. The hub is measured as a vital level to the economic growth by facilitating the evolution expectations in freight and to endorse intermodal transport, attract businesses and create employment, support the economic building of region by generating economies of scale and scope and appeal more businesses [36]. According to [30] [14], the triumph of a logistics hub depends on four major factors, which are location, efficiency, financial sustainability and level of services, for instance; price, punctuality, reliability or transit time.

Halal as means permitted or lawful in Shariah [1] [18]. In the context of modern business nowadays, halal is emerging as a new paradigm for assuring quality and affecting the way of living by changing people's attitude, tastes and values [19]. The increase in demand for halal products today has led to growth in the halal industry around the world. Besides which the concept of halal logistics

grows from the supply chain management that refuges the handling of halal products from the suppliers or manufacturers up to the customers, that may sometimes involve diverse parties, places and non-halal products too [40]. Besides, the values of logistics are that the products must be distributed to the customers at the exact time, in the right extent and good condition [40], in order to be successful in implementing logistics management.

Despite the academic publication concerning halal logistics is still very limited, as stated by [39] [41], most halal publication are on consumer studies and pursuing as well as traceability on halal products [4] [28] [29]. Hence, it is vital to have effective and efficient halal hub to ensure the proper management of the whole chain of business. At this moment, there is no successful logistics hub in Malaysia particularly in halal perspectives because of the new emerging halal products. Then, a model for halal hub will be proposed which can be used by the stakeholders in providing solutions for the planning and development of halal parks in Malaysia. Furthermore, this study will provide a good guideline for the halal industry key players to further advance their operation services up to the standards and to be more competitive in expanding the whole chain, because it needs the wide set of skills and management knowledge to arrange and run such system efficiently [11] [15].

2. Method

The framework proposed in this paper was derived from the review of the literature. There are two study main streams namely logistics hub stream and halal supply chain literature that generally adopted as the main references for this conceptual paper. Literature from the year 2010 to 2018 was reviewed to ensure that the most recent ideas and issues within the research area are clearly identified. The review years are involving the 8 years range from the year of 2010 to 2018. A total number of 93 published articles were reviewed (refer Table 1.) and they formed the foundation of a conceptual framework for this study.

Table 1. Numbers of papers reviewed based on topic

Literatures Field	Number of Papers
Logistics Hub	35
Halal Supply Chain	58

3. Results and Discussion

3.1. Logistics Hub

The current trade logistics hub framework is purely based on the conventional philosophy; which logistics hub can be resolute through the organization of logistics facilities. This supports tagging basic structures, goals, and functioning borders of a separate type of facility, distinguishing them alongside other current structures. Observation of current hubs shows that the arrangement could be linked to the point of the supply chain where the hub is situated, the characteristics of products´ flows and the assist market. In the context of logistics centers, for example in Europe, they can be organized by the state such as in Great Britain, which are known as “Freight Villages”; while in Japan, China and Singapore, they are often referred to as "Logistic Centre” [12] [16]. All the names have a similarity in defining all subject such as their basic function: specialize in complex logistic service, which requires them to have similar infrastructure and sub frastructure. Meanwhile, there are five main influences factor contribute to the integrated logistics hub.

3.1.1. Transport Infrastructure

The transport infrastructure and its equipment are among the factors that influence the competitiveness among the regions. This impact must be considered in a wider context, since many other conditions need to be fulfilled in order to achieve competitiveness, like other infrastructure, quality and education of the labour force, application of unconventional technologies based on the support of research and development, functioning labour market, healthy financial and market environment, good quality of the environment, health care and attractiveness for tourism [20] [17] [42]. Transport infrastructure as define by [9] relates to the value and technical parameters of the transport infrastructure (land and water routes, airports, seaports) should locate in a certain area. Regular delivery of goods is important for the reduction of costs in the logistics chain supported by high-quality transport infrastructure. At the same time, the technologies in logistics based on regular deliveries make it probable to cut stock, speed up the turnover of goods to decrease production costs of the companies in the relevant region [20]. On the other hand, railway, waterway and roadway links, which allow multimodal connections at transshipment points are regarded by [6] [7].

3.1.2. Telecommunications and IT Network

The characteristic design of information systems in logistics is the occurrence of feedback. The whole of the worth system of logistics management and system of assortment, transfer, storage, and processing of information form a closed-loop [21] [2]. One condition of this is, the technology affects the distribution operations such as the computerized, automated, and equipped with state-of-the-art material handling equipment and information systems [27] [3] and the telecommunication and information technology networks and/or telecommunications networks located in a certain area [9] [43].

3.1.3. Infrastructure Availability

The major criteria for the logistics hub are infrastructure facilities, proximity to market, land availability, government and industrial support as well as labor supply [22]. According to [23], the purpose of the passable location of a logistics hub is to vary the products available to diverse the markets through the greatest possible networks, allowing for a use of the logistics and transportation infrastructure available [13][44]. According to [7] and [8], logistics hubs should be located at the joint of large streams of movement, or very close to main transportation links, particularly in order to take the lead of multimodality.

3.1.4. Logistics Network

The logistics networks affect the shape of the logistics procedures and the shape of supply chains and business networks [9][45]. The elementary logistics nodes have been divided and described according to the adopted classification. The existing infrastructure has already been identified as an important factor when choosing the site of a logistics center.

3.1.4.1. Multi-Branch Transport

In the inland transport in European, centers must at least offer the possibility of linking up with the combined transport network of road/rail services [31]. According to [38], it is important to ensure that logistics centers have a connection to rail transport combined with different means of transport (multimodal and intermodal transport) includes the areas with points in interstellar where there are connections of different modes of transport (by road, rail, sea, and air).

3.1.4.2. Warehouse Facilities

Warehouse facilities are one of the networks, which comprise of a proper number of nodes and should also comprise the internal multi-branch transport infrastructure linking nodes with similar national infrastructure and a technical infrastructure permitting intermodal transport solutions to be recognized [9]. On the other hand, the pains to produce settings for the facility of inland waterway transport services and achievement of new markets, the support of ship modernization and innovation, acquisition of new labor and the increase of human capital investment, raise awareness on inland waterway transport and upgrade the inland waterway transport infrastructure.

3.2. Halal Supply Chain

According to [40], the necessity of the halal products is to be well-protected by all parties from the starting point until it reaches the final destination, which is consumption by the customers. This is where the sector of integrity takes place where positive actions must be taken by the players who are well-educated in the supply chain process to avoid any possible cross-contamination with non-Halal products. [26] highlighted that the halal supply chain means the total chain must be Halal and 'Toyyib'.

In logistics, halal grows from the supply chain management that refuges the handling of Halal products from the suppliers/manufacturers up to the customers, that may sometimes involve diverse parties, places and non-halal products too [40]. Besides, the values of logistics are that the products must be distributed to the customers at the exact time, in the right extent and good condition [40], in order to be successful in implementing logistics management. It can be interpreted that the combination of these activities is important, particularly transportation, storage/warehousing, inventory management, material management, product scheduling, and customer service. Therefore, by implementing halal into logistics context, it is compulsory for those activities to comply with the Shariah principle especially during the storage and transportation of the halal products [32]. Then, [24] added on by stating that the activities in the halal supply chain are warehousing, sourcing, transport, handling and delivery of halal products, inventory management and other business management strategies such as lean management and value-based management.

Besides, [39] describe that halal supply chain is similar to the conventional supply chain, which comprises of planning, implementing, and controlling the distribution and storage, but it only caters for halal-certified products, from the origin to the consumption point. Therefore, to develop a hub for halal, all of the activities involved in the halal industry need to be halal certified.

3.2.1. Halal Supply Chain Ms2400: 2100 Standards

Halal Certification is a halal concept applied through certification for food products in Malaysia. In Malaysia, the halal certificate is a document issued by an Islamic organization, which is Malaysian Department of Islamic Development (JAKIM). The company that handles halal business should have halal certification products registered under the Department of Islamic Development Malaysia (JAKIM) using Malaysian Halal Logistics Standard: MS2400-1-2010 Distribution, MS2400-2-2010 Warehousing (refer table 2.). The registered organizations would be able to handle the halal goods movement in the halal industry.

Table 2. MS2400: 2010 HTAP Standard

	Malaysia Halal Standards Ms2400:2010

Ms2400-1:2010 Part 1	Halalan Toyyiban Assurance Pipeline: Management System Requirement for Transportation of Goods and/ or Cargo Chain Services
Ms2400-2:2010 Part 2	Halalan Toyyiban Assurance Pipeline: Management System Requirement for Warehouse and Related Activities

Sources: Department of Standard Malaysia, 2010

3.3. Transportation

Halal and non-Halal goods are not to be mixed on a freight carrier while delivering the halal products (like trolley or pallet) or in an ampule transportation vehicle (in case of bulk shipments). There is a clear variance in transportation in the condition of ambient (chilled or frozen) [10] [35]. The one thing that differentiates between conventional transportation and Halal transportation is the need to comply with Shariah principle as the fundamental guidelines of Halal Standard in the logistics activities [37]. This is the exclusivity of halal in Islam. It is a feature of purity since a Hadith saying that it is clear between halal and haram. In order to preserve the halalness of the halal products, it must be held by a true knowledgeable person who knows the exact process. The products cannot simply be put together in the same transport without considering the Halal status of the products before being moved to the right destination. If there is any misconduct, the Halal integrity of the products could be questioned. Then, [33] [34] said that for refrigerated shipments there should be no mixing in the same container/common transportation storage of Halal and severe Najis products (items regarded as ritually unclean) like pork. In case of ambient transports, there should be no mixing of Halal and non-Halal goods on a pallet or load carrier, and tertiary packaging should be used to protect the Halal cargo along the supply chain, with an equal number of drivers and vehicles [10][46].

3.4. Warehouse

[29] stated that if products are not felt or kept consequently, they would not be considered as halal. It is believed that the goods are kept for a lot of time in storage and temperately little time in the movements and transformations. Hence, this is an important argument to address the Halal compliance for storage and warehousing. Since halal goods spend more time in storage, which is a place where manufacturers keep their goods before it is delivered to their destinations [35]. In the wet environment there is a risk related (minimum level) to ensure segregation, whereas, in the dry environment, segregation between halal and non-halal is mainly based on perception (preferred) [33]. In the halal supply chain, it is clean and halal from the farm to the fork. It is similar to the halal transportation concept, in which there are halal and non-halal ways of handling Halal products. Food such as meat, pharmaceutical products, and cosmetic products have their characteristics. Since there are differences in product characteristics, each product needs different treatments to maintain their Halal integrity [17].

3.5. Packaging and Material Handlings

In terms of packaging, the products should be cleaned and permitted from any non-halal ingredients. In order to avoid cross-contamination, the tools to handle the packed food products should not be used with the one exhausted for non-halal products [32]. A dedicated and committed group of workers should handle the halal food production to decrease and minimize the failure of cross-contamination between halal and non-halal products and to keep away from any human mistakes [25].

In storage and material handling, the non-halal products must be labeled as non-halal under the regulation of the government. Non-halal products must not arrive at the same product area as halal products unless there is whole segregation of products that is attained [10]. To ensure segregation, the wet materials become risky whereas, in the dry environment, the segregation process between halal and non-halal is mainly based on insight (preferred) [35].

4. **Conclusion**

The conventional logistics hub includes the logistic infrastructure based on linear elements such as quality and technical parameters of transport infrastructure (land and water routes, airport, seaport) and the telecommunication and IT networks. In the nodal elements of logistic infrastructure, it consists of the presence of essential elements, the similarity of technical solutions, level of availability and parameter exploitation (location). The second stage is the logistics network including an appropriate number of nodes, warehouse facilities, and multi-branch transport infrastructure. In contrast, the application of halal can be adopted in a daily process like warehousing, transportation and new components halal in packaging and material handlings. All activities should be certified according to the halal certification products registered under the Department of Islamic Development Malaysia (JAKIM) using Malaysian Halal Logistics Standard: MS2400-1-2010 Distribution, MS2400-2-2010 Warehousing. The literature in this area is still limited. Therefore, this research is going to conduct a study on developing a model of the halal hub, especially in Malaysia. To further establish the framework, exploratory research will be conducted in the next stage of this research.

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