

HALAL AIR CARGO LOGISTICS REGIONAL HUB

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ABSTRACT: *The aim of this study is to develop a framework of halal air cargo logistics regional hub operations in a view of specifically on export and import of halal products in air cargo terminal. The method used in this conceptual paper is based from literature reviews from journal articles, theses proceedings and conferences, books and online news which are related with keywords and research area. The integration of halal and air cargo operations is important as it is to avoid cross contamination between halal and non-certified halal products and to maintain halal integrity of halal products. This study will cover mainly on the policies of halal industry, halal logistics, air cargo concept, airport as a hub and logistics as part of air cargo hub. It is hoped that the findings of this study will serve as a platform for future research. Finally, this study will discuss on the opportunities of halal air cargo logistics regional hub operations according to gaps.*

Key Words: air cargo, halal, halal logistics, hub

1.0 INTRODUCTION

Air cargo industry, cannot be denied, as one of the most emerging industry and one of the most important components of today's transportation structure to support the economy of a country and also the world. As the demand for high-value industrial and consumer goods continue to grow over recent years, air cargo industry would be the option for transporting the goods at the right time and place. The Just-In-Time operations that are being implemented by many industries also help in emphasizing the needs of air cargo industry in translating the operations into some process that ease the industries.

A vast expanse of challenging terrain and a lack of developed ground transport service between countries limits land-based transportation alternatives [1]. Many would see that the land transportation would require fewer expanses but then again land transport has its limit in reaching separated places as lands that are separated by waters and mountains. Economic growth also has always been associated with Gross Domestic Product of a country. Total air cargo handled at airports nationwide rose 5.6% to 567, 303 tonnes (January – July 2013: 4.1%; 537,177 tonnes) on account of higher exports, especially E&E products [2]. Trade among countries within Asia is expected to expand [1]. Thus the need to gain the competitive advantage of this blooming industry is far greater according to the forecast. The reason for the forecast on the expanding trade among Asian countries would be the production chain in the manufacturing industry where the products are being produced in different factories in different countries which lead to the intercontinental exports [1].

Logistics hub also had been developed or is in focus by many countries as it could give benefits to many other industries as logistics support the movement of the processes in the industries. Logistics hub is known as the facilitator of the economies of many countries and also the mover of the performance. Having an efficient logistics hub in a country could actually attract foreign investors and at the same time providing much opportunities of jobs for the citizens of a particular country.

As said above the air cargo industry has its reason for emerging these recent years. Another new emerging phenomenon it is the supply chain industry is the Halal Supply Chain. The halal aspect of a supply chain had always been the issue as the halal integrity of the halal products may have been challenged if the products were being placed in the

same for example, truck, with the non-halal products. Consumers have always had the curiosity of the halal integrity but only in recent years that the emerging of halal awareness among consumers and manufactures really triggers the need of Halal Supply Chain. Supply chain as we know it has many elements on it including the transport, storage and terminal. At these elements are where many of the experts are concern about in maintaining the halal integrity of the halal products. Halal logistics which part of the Halal Supply Chain has come to the surface of the industry as to provide the consumers the need to maintain halal integrity of products.

2.0 REVIEW

2.1 Halal Industry

2.1.1 Halalan Toyyibban

Halal originates from an Arabic phrase that means allowed or permitted by Islamic Law. Halal, not limited only to things but also actions being carried out that are allowed by Shariah Law and should be done in order to show an obligation towards Islamic faith [3].

Any halal products that will be consumed by Muslims must not consist of elements of animals that are forbidden by Islamic Law or not slaughtered according to Islamic Law, does not contain substances that is considered impure by Islamic Law, the usage of equipment that contain impurities in preparing, processing and manufacturing of halal products and also no cross contamination between halal and non-halal products.

Harlina Suzana Jaafar *et. al.* [4] states in their study that the rising number of Muslim population globally had caused an increased in the attention on the concept of halal. Halal concept has become more recognizable as more Muslims are aware of the halal integrity of the halal products and the fact that non-Muslims are also consuming the halal product makes the market for halal product become known more widely across the globe.

2.1.2 Malaysian Standard

The standards that are developed by the Department of Standards Malaysia are to provide many functions in order to establish a more proper society and country within reasonable standards that are being proved by the committees that are being represent by all the stakeholders in a particular relevant interest. The department has established MS 2400 which consists of three parts. For this study, the related standards

are part one and part two which will be discussed further on the sub sections following.

a. MS 2400-1:2010 Halalan-Toyyiban Assurance Pipeline- Part 1: Management System Requirements for Transportation of Goods and/or Cargo Chain Services

This standard provides a framework for organizations to assure the halal integrity of halal products throughout the cargo supply chain specifically in transportation activities according to the halalan-toyyiban requirements. The implementation of this standards must be accompanied with the following standards which are the MS 2300 (Value-based management systems), MS 1900 (Quality management system) and MS 1500 (Halal food- production, preparation, handling and storage).

This standard detailed the cargo supply chain that are supposed to meet the halalan-toyyiban requirements and are applicable to any types and sizes of halal products. Every transportation activities which include the transport used and the conditions of the transportation and stakeholders such as under the chain of custody, meaning personnel or workers involved in the transferring of the goods from one hand to another in the supply chain are being taken under considerations.

The detailed framework is needed because organizations could not control and oversee every movement of the products when it is on the way from point of origin to point of destination. The worker or personnel that are being put in charge must be responsible and trustworthy in order to maintain halal integrity throughout journey. Therefore organizations can foresee the situations that could challenge the halal integrity by planning the Halalan-toyyiban Risk Management Plan which is part of the standard's framework. Aligning this standard with this study, transportation companies or logistics service providers would be entering the air cargo halal hub every day. Thus it is important for air cargo halal hub operator to ensure the transportation providers to comply with the standards applied for the hub. A neglect in the actions of any transportation providers inside the hub could raise a challenge, not only to the halal integrity of the products carried by them, but also to the other goods since it is a halal hub where cross contamination should be avoided at any cost.

b. MS 2400-2:2010 Halalan-Toyyiban Assurance Pipeline- Part 2: Management System Requirements for Warehousing and Related Activities.

This standard also required the consistent implementation of MS 2300, MS 1900 and MS 1500 along with it. The framework provided by this standard is focuses on the usage for stakeholders involving in warehousing activities which are manufacturers, collection and distribution centres, warehouse and storage providers and retailers handling and managing halalan-toyyiban products, goods and/or cargo, which these stakeholders are interacting with each other at receiving, loading and delivery levels.

Like the MS 2400 part 1, this standard detailed on the warehousing activities in which halal integrity could be challenged. The importance of personnel or workers are being highlighted again in this standard where organizations should established a halalan-toyyiban committee which would oversee the activities of warehousing so that it should be aligned with Shariah. Records and documentations are

necessity as to provide evidence of compliance by all the stakeholders of cargo supply chain.

The air cargo terminal operator should ensure the compliance of stakeholders with this standard as there are many freight forwarders and logistics service providers that are residing at the hub. The non-certified halal products should be transport and stored separately from the moment they arrived at the hub whether for export or import.

c. Halal Assurance System

The Halal Assurance system serve as the guideline for halal certificate holders in order to established a proper system to maintain halal integrity of halal certified products. The system should be imposed by organizations that obtained and intend to obtain halal certification for authorities. It is a system that is meant to control halal activities from inside the organization itself. The principles provided by the guideline mainly are on what the Internal Halal Committee should be focusing when implementing the Halal Assurance System.

The importance of personnel and workers are again being highlighted as the establishment of internal halal committee is necessary to avoid cross contamination. The skills and knowledge owned by the committee members are crucial as they will control the activities that are being carried out in their organizations throughout all levels, whether it is the production level or warehousing level. The organization shall provide continuous training to the management members and periodic assessment should be carried out throughout their services to the organization.

In the context of this study, the air cargo terminal operator should implement this system and established an internal halal committee which will serve as the controller of the activities happening in the hub. The committee should possess adequate knowledge and skills for halal industry and also for air cargo operation.

2.1.3 Halal Logistics

Tieman *et. al.* [5] in their study of principles of halal supply chain has came up with the foundation of halal logistics which consist of three levels that touched on the direct contact with haram, risk of contamination and perception of the Muslim consumer. These levels of foundation must be followed and taken into account by all the halal logistics service providers for them to maintain integrity. Tieman *et. al.* [5] also established a guideline for guidance on the implementation of halal supply chain. This is because the idea without practicality will never succeed in the first place thus having a guideline that could actually being practice by organizations can help them since halal logistics is an emerging industry.

According to Dasuqkhi *et al.* (2014) [6] through their Quranic Analysis and its practicality of the word tayyib, which means pure, clean and nourishing [7], the understanding of the word tayyib according to Al-Quran comprised of a few major themes and these themes are the essentials in order to maintain halal integrity of halal certified products.

The Islamic Manufacturing Practice (IMP) which was introduced in Malaysia in 2005 gives an idea of providing a guideline with system that are aligned with Shariah and ensuring the integration of halalan-toyyiban elements into production process. However, the usage of IMP was not widely practiced as it seems to be impractical for international markets and thus it need more improvement for more standardization of halalan-toyyiban [6].

The concept of halal logistics does not limited only to the physical segregation between halal and non-certified halal products but also covers other logistics activities such as the material handling and workers or employees [4]. In order to perform a complete halal supply chain, segregation and dedication are the two principles highlighted by *Harlina Suzana Jaafar et al.* [4] that organization should have understanding on based on their case study.

Halal logistics is an emerging industry and it has been practiced by many organizations lately. However, even though many research done to prove the significant of halal logistics, there are still organizations that are not ready to provide halal logistics services to the industry. There are five factors that are personnel or employees related are being listed by *Tarmizi et al.* [3] which include the implementation of Halal Assurance System which had been discussed earlier and also support from management and acceptance from employees. The readinesses of the employees are very important as they are the ones who will carry out the duties to maintain halal integrity of halal products. Management of organization should provide adequate training and support for their employees in order for them to perform in their work.

There are not many researches that touch on the halal air cargo hub but more on the general halal hub itself. *Borzooei and Asgari* [8] discuss in their study of establishing a global halal hub as general hub which could be adopted in developing a more specific hub like a halal air cargo logistics regional hub. The requirements listed were the essentials in developing such hub which include the human capital, infrastructure and public and governmental support.

Muhammad et al. [9] argue in their study of positioning Malaysia as Halal-Hub: Integration Role of Supply Chain Strategy and Halal Assurance System, where enhancement of integration structure between strategic orientation and halal assurance system can be fit by the level of marketing intelligence practice by a company. These authors have look into the perspective of strategic management of a company on how to position themselves as halal hub which is focusing on the systems and marketing level available in the company.

2.2 Air Cargo Industry

2.2.1 Air Cargo Concept

Zhang [10] argued that, air cargo throughout the world has strongly linked to trade growth and the pattern of air-cargo traffic is influenced by import/export flows between countries/ regions. *Yuan et al.* [11] stated in their study on the internal and external influences on the growth of air cargo services and used a air cargo supply chain operations reference model (ACSCOR), had resulted in the a very strong association between amount of value-added in the logistics industry and national GDP per capita.

Clausen et al. [12] explain in their study the general set up of the air cargo transport chain where when the transport order placed by a consignor, pre- and post-carriage systems are being handled by numerous participants and it takes several relocations and numerous handling processes until the export goods reach the cargo compartment of an aircraft.

From the explanation, the general air cargo chain would require a lot of good movements along the way and with different handlers. This is exactly where halal integrity could be challenge by mishandling or cross contamination with haram goods.

In air cargo supply chain or any logistics supply chain, the

information flow is significant as the physical flow of the goods themselves. The cost and efficiency of managing supply chain has been made more competitive by Information and Communication Technology (ICT) which led to significant changes in global market of organizations that are based on production and distribution [13].

In the midst of expanding the air cargo industry in Malaysia, the study will also take a look on the regional aspect of services. Malaysia is a member of Association of Southeast Asian Nation (ASEAN) which was established on 8 August 1967 in Bangkok, Thailand. Other members include Brunei, Cambodia, Indonesia, Laos, Myanmar, Philippines, Singapore, Thailand and Vietnam. The liberalization of services under ASEAN Framework of Services which signed in December 1995 to liberalize the service sectors for over a period of 20 years ending in 2015. The framework is to serve as the enhancer of cooperation between ASEAN members and eradicating significant constraint in trading among members.

Singapore is renowned for its functions as hubs around regional of East Asia due to its rapid development of facilities and strategic locations. Singapore's development of transportation, telecommunication, commercial and financial infrastructures serve as the competitive advantages that aiding in the regional hub status for Singapore [13, 23-25].

2.2.2 Airport as a Hub

'Hub cargo' refers to cargo flying from, say, the US or Taiwan to Hong Kong, and then flying out of Hong Kong to its final destinations, mainly Southeast Asia and Central and Northern China. (It also includes the traffic in the reverse direction.) Since hub cargoes are air-to-air flows, they are often called 'transhipments' [10].

Hub as defined by *O'Kelly & Miller* [14] can be said to have the quality and principle of a warehouse or depot in which the connectivity functions of it is limited to the demand region where it is situated. Exchange center of many-to-many distribution system where goods flow from its origin point to their destination point undergone a hub or few hubs for sorting or centralization of destinations. This definition could fit into this study as the main function of this proposes halal air cargo logistics regional hub is to become the main hub in the Asian region by consolidating the halal products from many destinations and dispersing them to their final destinations.

Airport should have their own competitive advantage in order to attract users. The competitive advantage of an airport evolving around five central circumstances in which the airport could be focusing on. Demand, spatial, facility, services and managerial are the factors listed by *Park* (2003) [15] in his study of competitive strength of Asian major airports. These factors can be the main focus of halal air cargo terminal as the demand of halal logistics services are increasing throughout the years.

Zhang [10] in the study has listed the competitive factors for Hong Kong in order to become international air cargo hub. They are geographical location, costs, delivery times, infrastructure, customs, intermodal transportation and international aviation policy. These factors are derived from the analysis where if an airport to become a hub, it needs to fulfill the demand of the industry where air industry has the key competitive advantage for goods for industry that are applying the Just-In-Time concept and high ratio of value to

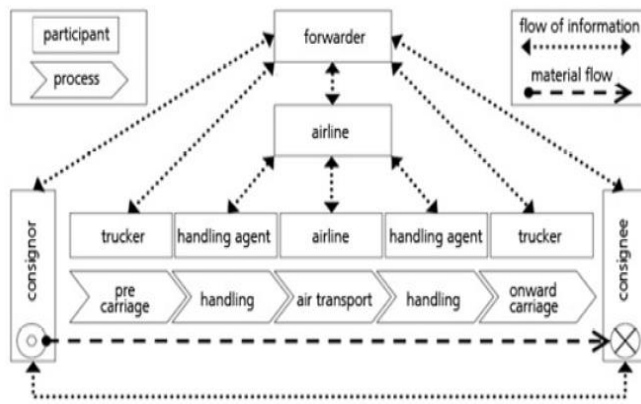


Figure 1: General set up of the air cargo transport chain
(source: Clausen, Frye, & Sieke, 2013, p. 64)

2.2.3 Logistics Hub

There are two perspectives of logistics research states by Harlina Suzana Jaafar *et al.* [4] where the supply chain logistics are concerning on material concerning activities like traffic and transportation and also value-added activities while service response logistics are related to the activities which are not involving the goods itself such as customer service and information system which assist the movement of the goods. These two perspectives are intertwined with each other as it can heavily depending on one another.

The needs of integration between elements of supply chain are vital due to the need of optimizing the tradeoffs between cost efficiency and responsiveness of the supply chain [16]. According to Han *et al.* [17], the three-step roadmap suggested in their study of establishing a successful logistics hub for South Korea, where broadening the logistics capacity, the initiation of value-added logistics services such as assembly, packing, labelling and investigation and the third step is the existence of global logistics and business centres [16].

Tongzon [18] in his study listed out the factors that are important for a hub to be a successful logistics hub which are strategic location, extensive linkages and connectivity by an air terminal, good capabilities in warehousing and related services and sufficient and highly efficient infrastructure. From this study, air terminal is being listed as one of the vital factors in setting up an efficient logistics hub due to the connectivity that air terminal are providing for a logistics hub. Air terminal as a fast gateway of export and import of goods need an efficient logistics hub to make sure that the goods are at the right place and at the right time.

Singapore Ministry of Trade and Industry Working Group on Logistics (2005) had established the key strategies to enhance Singapore's competitiveness as the logistics hub. The ministry listed aviation, land transport, maritime and supply chain management capabilities and technologies as the pillars and integrators in order to be the leading global integrated logistics hub. Aviation hub could support the logistics hub in terms of the connectivity and high technology facilities around it. In this study, the focus would be on the aviation hub where the logistics hub as the supporting pillars to build a halal air cargo logistics regional hub. Logistics hub with the previously listed pillars and integration could support the

country's aviation hub to become the leading in the global halal hub [16].

Fernandes and Rodrigues [16] also listed the key criteria identified for setting up an integrated logistics hub which include the necessity of an airport to be part of the logistics hub. The infrastructures and the services provided by the airports and the charges and locations of the airport are needed to be taken into consideration. Their study had listed the key criteria for integrated logistics hub, however these key criteria could be the guidelines or basic points in order to build a framework of air cargo logistics regional hub.

Trappey *et al.* [19] in their study had integrated the business and logistics under one roof. The needs of these two aspects had been explained where the business hub and logistics hub had their own role which the latter will manages the operational activities of the integrated hub while the former will manages the information-sharing and other elements of supply chain such as procurement and order processing. Having a business hub to support the logistics hub could actually facilitate the logistics hub to be more focusing on the movement of the goods. Furthermore, the idea of business hub also had been proposed by Lee & Yang [20] in their study for strategies for a global and economic hub for Incheon International Airport where Asian hub which will be consisting of Asian Hub Center, an Asian Logistics Center and Asian Business Center. To build this Asian Hub, the study had listed the success factors which include the infrastructure, government interventions and various producer services. In related to this study, the airport infrastructures are adequate and sufficient enough to accommodate halal products from around the world.

3.0 DISCUSSION

Policies that are developed by government bodies serve as the guidelines and benchmark for the respective users of the policies. In this paper, the focuses of policies are on the Malaysian Standard or MS 2400 part 1 and 2. The institutional that are responsible for the developing of the policies take into account all stakeholders concerns and opinions so that the implementation of the policies are well executed and can be done by the respective industries. Control after implementation of policies is significant as the actual implementation of standards in real warehousing and transportation activities are very challenging as it involves many handling and relocations of goods in the cargo supply chain.

The management of the organizations is the one that should ensure the right execution of the standards in the warehousing and transportation activities done in their organizations. The Halal Assurance System which is developed by Department of Islamic Development Malaysia is to ensure the workers to comply with the standards through the establishment of internal halal committee.

Air cargo operations as discussed above require many handlings and locations of goods in the supply chains. The standards and policies are developed to monitor and control the activities as the it is not only limited to the segregations of halal-certified products and non-certified halal products, but also involves the material handling inside the hub and the workers handling the goods. These activities requires personnel or workers which must be trained and have adequate skills to execute the work. Human capital of the

organizations need to undergo trainings that are concerning on halal matters which are provided by many institutions in Malaysia, whether it is from government or non-government bodies.

Developing a halal air cargo logistics regional hub is significant as the amount of halal consumer goods that are moving through air transport are increasing day by day due to the increasing in demand of the halal goods. Thus, air cargo operations today should practice halalan-toyyiban operations in order to maintain halal integrity of halal goods in between transshipment. Air terminal is the gateway of export and import as discussed on previous chapter and the efficiency of the logistics hub are the main concern right now. However, with the increasing awareness from consumers on halal integrity, it is time to transform the air terminal or logistics hub as the halal hub which is the integration of halal and air cargo operations.

4.0 CONCLUSION

Although many researches had been done on halal hub, there are very few researches that integrate halal with air cargo operations. This has been the gap that could be filled by this study. Halal concept is to avoid cross contamination between halal and non-certified halal products in the operations. Air cargo terminal operators handled many types of products and there are very rapid movements of goods managed by the workers. These products are from various point of origin and are set to be dispersed to many destinations.

Being an operator of a halal air cargo terminal, the movement of the goods once they are inside the terminal must be monitored and handled with much control and responsibility. Human error are unavoidable, however with the right skills and knowledge, halal air cargo hub could be made possible in the future.

Policies from government and authority are important as it would serve as the guidelines that are needed by the organizations. Policies that are proposed must be applicable and practical for industry and the developing of the policies must involve the stakeholders of the industry in decision making of the policies made as they are the ones who will implement it.

Halal air cargo logistics regional hub could be the country's competitive advantage halal supply chain are getting more recognizable in logistics industry. Moreover, the demand for halal logistics today are increasing as not only Muslims consumers are starting to aware on the importance of it, but also the non-Muslims consumers are taking interest in it due to the toyyib concept of halal logistics.

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