UNIVERSITI PUTRA MALAYSIA

READINESS OF MALAYSIAN FOOD-BASED LOGISTICS SERVICE PROVIDERS FOR HALAL PRACTICES

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READINESS OF MALAYSIAN FOOD-BASED LOGISTICS SERVICE PROVIDERS FOR *HALAL* PRACTICES

By

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Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirement for the Degree of Master of Science

March 2015

DEDICATION

This work is dedicated to my parents

Ahmad Tarmizi bin Said

and

Hayati binti Jaafar

Abstract of thesis presented to the Senate of Universiti Putra Malaysia
in fulfillment of the requirement for the degree of Master of Science

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Halal is a code to describe things or actions that permitted by Shariah (Islamic Law) and it should be performed to show an obligation towards Islamic faith basically towards foods ingredients. However, *halal* aspect is not only restricted for ingredients of foods products but includes anything related to the *halal* food. In a way to serve *halalan toyibban* products to end consumers, all parts in supply chain of *halal* products also should be conducted according to *halal* guidelines. Logistics services are one of the parts in supply chain and most of *halal* foods producers using logistics services from logistics service providers (LSPs). As *halal* foods demands increasing, logistics players should be ready towards emerging of *halal* market in order to ensure *halal* integrity along *hala*l foods supply chain.

In order to be ready to involve in *halal* market, improvements need to be done by LSPs to make sure the integrity of *halalan toyibban* of *halal* food products along the supply chain. few aspects need to be considered by LSPs in providing good *halal* logistics services due to few problems reported respected to logistics practices for *halal* products. Organization vision to change, knowledge on *halal* logistics, company's profiles, past experience, organization resources and structure, assurance system, internal and external environments, employees acceptance, management support as well as *halal* logistics barriers are the important aspects with regard to *halal* logistics. In the light of *halal* logistics scenario, the general objective of this study was established in order to investigate the readiness factors among Malaysia's food-based LSPs for *halal* practices.

This study was conducted in most states in Peninsular Malaysia such as Selangor, Kuala Lumpur, Negeri Sembilan, Melaka, Johor, Perak, Penang, Kedah, and Pahang and census method was used to select targeted respondents. The sample of this study was 156 food-based LSPs from a total population of 350 logistics companies. Face-to-face interviews with the respondents were conducted using structured questionnaires consisting of 5-point Likert Scale statements which were designed to measure readiness towards *halal* logistics among food-based LSPs. Relevant analyses were carried out to

achieve the specific objectives of this study such as descriptive analysis, mean score analysis, chi-square analysis, correlation analysis, factors analysis, and logistic regression. These analyses used to describe LSPs company's profiles, to measure the level of knowledge among food-based LSPs, to identify correlation between LSPs readiness with level of knowledge, to identify factors that influence LSPs readiness towards *halal* practices and to investigate the relationships between dependent variable (readiness towards *halal* logistics) with few independent variables that influenced the readiness towards *halal* logistics.

Generally, the finding of this study found that experienced complying with any assurance systems, locations, types of logistics activities, presence of Muslim workers, level of knowledge and barriers have significance relationships towards LSPs' readiness towards *halal* practices. While company vision to change, *Halal* Assurance System, employees acceptance, external and internal environments of the organization and management support were the five factors that influenced readiness towards *halal* logistics by the LSPs. Meanwhile, presence of Muslim workers, knowledge on *halal* logistics, and experience in complying with any assurance system, were determined as the factors that mostly influenced readiness towards *halal* logistics. Since the result of this study clearly showed that important of knowledge on *halal* logistics, experienced with standard or assurance system and presence of Muslim workers have significant effect on LSPs readiness for *halal* practices, thus authorized agency should impose compulsory *halal* terms for food-based LSPs.

Abstrak tesis yang dikemukan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk Ijazah Master Sains

KESEDIAAN PENYEDIA PERKHIDMATAN LOGISTIK (PPL) BERASASKAN MAKANAN MALAYSIA UNTUK AMALAN HALAL

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Halal adalah kod untuk menerangkan perkara atau tindakan yang dibenarkan dalam Shariah (Undang-undang Islam) dan perlu diikuti dan dilaksanakan untuk menunjukkan kepatuhan terhadap ajaran agama Islam terutamanya terhadap bahan makanan. Walau bagaimanapun, aspek halal tidak hanya terhad kepada bahan makanan sahaja tetapi juga merangkumi semua aspek yang melibatkan makanan halal dan juga barangan bukan makanan yang perlu mematuhi peraturan Islam. Untuk menyediakan produk yang berstatus '*halalan toyibban*' kepada pengguna akhir, semua komponen yang terlibat di dalam rantaian bekalan untuk produk halal mestilah dikendali mengikut praktikal halal yang disarankan. Khidmat logistik adalah salah satu bahagian di dalam rantaian bekalan dan kebanyakkan pengeluar makanan halal menggunakan khidmat logistik daripada pembekal perkhidmatan logistik (PPL). Dengan peningkatan permintaan produk makanan halal, PPL perlu bersedia terhadap kemunculan pasaran halal untuk memastikan integriti halal disepanjang rantaian bekalan makanan halal.

Untuk bersedia menghadapi peningkatan permintaan dalam pasaran halal, beberapa penambahbaikan perlu dilakukan disepanjang rantaian bekalan produk halal untuk memastikan integriti '*halalan toyibban*' disepanjang rantaian bekalan. Beberapa aspek perlu diambil kira oleh PPL untuk menyediakan khidmat logistik halal yang bagus kerana beberapa masalah dilaporkan berkaitan dengan amalan logistik halal untuk produk halal. Perubahan visi syarikat, pengetahuan berkenaan halal, profil syarika, pengalaman, struktur dan sumber syarikat, sistem jaminan, persekitaran luaran dan dalaman, penerimaan perkerja, sokongan oleh kumpulan pengurusan dan juga halangan amalan logistik halal adalah antara aspek utama yang berkaitan dengan amalan logistik halal . Dengan senario logistik halal semasa ini, objektif utama kajian ini adalah untuk menyiasat faktor kesediaan terhadap logistik halal dikalangan PPL di Malaysia.

Kajian ini dijalankan di empat kawasan utama di Semenanjung Malaysia iaitu Kawasan Tengah, Kawasan Timur, Kawasan Utara, dan Kawasan Selatan yang diwakili negeri-negeri seperti Selangor, Kuala Lumpur, Negeri Sembilan, Melaka, Johor, Perak, Pulau Pinang, Kedah, dan Pahang. Pemilihan sampel adalah menggunakan kaedah census untuk memilih responden daripada PPL berasaskan makanan sebagai responden sasaran. Sampel kajian ini adalah sebanyak 156 PPL berasaskan makanan daripada

keseluruhan populasi PPL berasaskan makanan iaitu 350 syarikat. Temu bual secara langsung dengan responden telah dijalankan menggunakan borang kaji selidik berstruktur, berskala Likert lima titik telah direka untuk mengukur kesediaan PPL berasaskan makanan terhadap logistik halal. Beberapa analisis yang berkaitan telah dijalankan untuk mencapai objektif kajian seperti analisi diskriptif, analisi skor min, khi-kuasa dua, analisis faktor dan regresi logistik. Analisis telah dijalankan untuk mendapatkan gambaran profil PPL berasaskan makanan, mengukur tahap pengetahuan PPL mengenai logistik halal, mengenalpasti hubungan tahap kesediaan PPL dan tahap pengetahuan halal, mengenalpasti perbezaan antara profil PPL, menentukan faktor yang mempengaruhi kesediaan PPL terhadap logistik halal dan untuk mengenalpasti hubungan antara pembolehubah bersandar (kesediaan terhadap logistik halal) dan beberapa pembolehubah tidak bersandar yang mempengaruhi kesediaan logistik halal.

Secara keseluruhannya, penemuan kajian ini mendapati pengalaman mematuhi sebarang sistem jaminan, lokasi, jenis aktiviti logistik, kehadiran pekerja Muslim, tahap pengetahuan dan halangan menunjukkan hubungan yang signifikan terhadap kesediaan PPL terhadapa amalan logistik halal. Sementara itu, visi syarikat untuk berubah, sistem jaminan halal, penerimaan pekerja, persekitaran dalaman dan luaran serta sokongan kumpulan pengurusan adalah lima faktor yang mempengaruhi kesediaan terhadap logistik halal. Dalam masa yang sama, kehadiran perkerja Muslim, pengetahuan dalam logistik halal, dan pengalaman mematuhi sistem jaminan, dikenalpasti sebagai faktor yang paling mempengaruhi kesediaan terhadap logistik halal. Memandangkan keputusan kajian ini jelas menunjukkan bahawa pengetahuan dalam logistik halal adalah penting, pengalaman mematuhi sistem jaminan dan kehadiran pekerja Muslim mempunyai kesan signifikan kepada PPL untuk amalan halal, maka agensi yang terbabit haruslah mengenakan syarat wajib kepada PPL untuk makanan halal.

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I certify that a Thesis Examination Committee has met on 17 March 2015 to conduct the final examination of Hazwani Ahmad Tarmizi on her thesis entitled "Readiness of Malaysian Food-Based Logistics Service Providers for Halal Practices" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Degree of Master of Science.

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LIST OF ABBREVIATIONS

CEO	Chief Executive Officer
COO	Chief Operating Officer
CFO	Chief Financial Officer
DOI	Theory of Diffusion of Innovation
GAP	Good Manufacturing Practices
GCC	Gulf Cooperation Council
GLC	Government Linked Company
HACCP	Hazard Analysis Critical Control Point
HALFEST	Halal Festival
HAS	Halal Assurance System
HDC	Halal Industry Development Corporation
JAKIM	Jabatan Agama Islam Malaysia (Department of Islamic Development Malaysia)
KN	Kontena Nasional
LSPs	Logistics Service Providers
MIHAS	Malaysia International Halal Showcase
MISC	Malaysia International Shipping Company
MNCs	Multi-National Corporations
MS	Malaysia Standard
RFID	Radio Frequency Identification
SCM	Supply Chain Management
SIRIM	Standards and Industrial Research Institute of Malaysia
SSM	Suruhanjaya Syarikat Malaysia (Company Commission of Malaysia)
UAE	United Arab Emirates

CHAPTER 1

INTRODUCTION

Food safety is one of the most pressing concerns for governments, consumers, and food chain players across the globe. The food safety certification processes and assurance guidelines like *halal* logo, Hazard Analysis Critical Control Point (HACCP), and Good Manufacturing Practices (GAP) were developed as a consumer reassurance mechanism. Studies have revealed that *Halal* logo is the certification mainly associated by Malaysian consumers with food safety. The establishment of a *halal* supply chain for food products is essential to provide 100% *halal* quality end-product to consumers. For this purpose, the involvement of all players in the food supply chain in *halal* practices is necessary. In this chapter, the focus is on research background, problem statement, research questions, research objectives, significance of the study, and organization of the thesis.

1.1 Overview of *Halal*

Every aspect of a Muslim's life rely on the *Shariah* laws (Mejia, 2007), as a sign of reverence to *Allah* and to attain his blessings. Basically, there are four *Islamic* laws followed in *Islam,* collectively known as Mazhab (school of laws). The four *Islamic* laws are (i) *Shafie'*, (ii) *Hambali*, (iii) *Maliki*, and (iv) *Hanafi*. *Halal* is well known as one of the *Islamic* rules or *Shariah* laws. The *halal* rules and regulations could be referred to in *Al-Nahl* verses of the *Islamic* Holy Book (Al-Quran).The *Al-Nahl* verses contains messages for Muslims to practice *halal* things and *halal* actions to show commitment towards better life and soul as well as better life aftermath. There are specifications for anything to be called *halal.* Anything intended to be called *halal* should not contain nor be in contact with *najs.* The term *najs* is used by Muslims to refer to things that they are themselves not permissible such as dogs, pigs, and any parts of those animals, any liquid or objects from human or animals like urine, blood, vomits, pus, placenta as well as excrement, sperm and ova of dogs and pigs (Latif, 2014).

The word *halal* originated from an *Arabic* word and is translated as lawful or permitted, permissible or allowable (NikMuhamad, Isa, and Kifli, 2009). Basically, *halal* is the encompassment of everything permitted under *Shariah* laws. The antonym to *halal* is '*haram*', meaning unlawful, unacceptable, and forbidden. The concepts of *halal* and *haram* are familiar to Muslims worldwide. Actions and consumption based on *halal* principles is essential for Muslims to fulfill the objective of *Shariah* laws.

The objective of *Shariah* laws is known as '*Maqasid Shariah*' which describes the important of following *halal* rules by Muslims (Bedoui and Mansour, 2013; DusukiandBouheraoua, 2011). Al-Mubarak andOsmani (2003) argued that the objective of *Shariah* as a design to promote benefits and repel harms. The *Halal* Industrial Development Corporation of Malaysia (HDC) argued that *Maqasid Shariah* protects Muslims against mental, spiritual, and physical damage by safeguarding the basic elements of faith, life, mind, progeny, and properties (HDC, 2012). First, the faith of Muslims needs to be protected to ensure their belief towards Allah and obligation towards *Islamic* laws. Next, the life and mind of Muslims need to be protected to ensure peace of soul to live, to think, to learn, to develop they to be a better person as well as to perform religious worship. Whenever people have a protected faith, peaceful life and mind, they will basically achieve better living standards through a good career, materials, house for living peacefully and good progeny which means good heritance (refer to the next generation of Muslims).

In order to help Muslims to have a better understanding and implementation of *halal* in their daily lives, seven *halal* principles were introduced based on the sources of *Al-Quran*, *Hadith*, *Qiyas,* and *Jumhur Ulama*' (HDC, 2012). The seven principles of *halal* that provides clear and extensive guidelines to Muslims are listed below:-

1. All things created by Allah S.W.T are *halal*, with exceptions of few prohibited such as pork, dog, blood, animals that are not slaughtered according to *Shahriah* law, food that is dedicated or immolated to someone other than *Allah*, *khamr* (wine, beer and liquor), intoxicants and inappropriately used drugs.
2. *Halal* and *haram* based on the junctions that are stated in *Al-Quran* and *Sunnah*. There will be no human being, no matter how pious or powerful may take it except His (*Allah*) hand to change it.
3. *Haram* is prohibited due to impurity and harmfulness. For example, carrions and dead animals are unfit for human consumption because decaying process lead to formation of chemicals that harm humans, intoxicants are considered harmful for the nervous system and could affect senses and human judgments as well as lead to social and family problems, even death.
4. What had been permitted is sufficient enough compared to prohibited which is superfluous. *Shariah* prohibited only things that are unnecessary or dispensable while it has alternatives to replace it, for instance peoples can still survive without consuming unhealthy carrion, pork, blood, and *khamr*. There are still lots of *halal* food compare to prohibited food.
5. Whatever that conducive to prohibited is in itself prohibited. This is explained that when something is prohibited, anything leading to it is also prohibited.
6. Falsely representing unlawful as lawful is prohibited. For example, calling *haram* thing as *halal* thing will remain sinful.
7. Doubtful thing should be avoided. For example, any Muslims whoever doubtful regarding *halal* status of any actions, things and food, they should be avoided to make or take it for further actions.

Halal principles are very extensive guidelines for Muslims to perform permitted things and actions collectively called as '*halalantoyibban*'. The meaning of *halalantoyibban* is 'good, clean, and wholesome' (HDC, 2012), 'safe to consume' (JAKIM, 2012). In food processing for instance, *halalantoyibban* refers to all the processing stages involved in producing *halal* foods. *Halalantoyibban* process starts from the phase of choosing ingredients for food preparation until it is ready for final consumption after processing and handling phases. However, *halalantoyibban*is not restricted to Muslim consumers, but it should be practiced by industries especially in the *halal* sector.

The *halal* sectors include industries like *Islamic* banking, pharmaceuticals, foods and beverages, cosmetics and personal care, animal feeds, and logistics (HDC, 2012; Latif, 2011; Latif, 2014). To be certified a *halal* sector, all the involved industries must follow the *halal* principles to ensure *halalantoyibban*thereby fulfilling *halal* rules, regulations, and promises. Uniformity in implementation of *halal* rules and regulations by industrial players would help in confirmation of *halal* integrity by that sector. According to HDC (2012) and Tieman (2012), *halal* integrity is described as continuous implementation of *halal* rules, regulations, and promises.

Halal integrity interlinks the industrial players in the *halal* sector to ensure the *halalantoyibban*status of its products or services offered as *halal*. For instance, *halal* integrity could help upstream and downstream in production or servicing to align with *halal* rules and regulation for the entire process and this automatically will cover all aspects of *halal* industries to ensure continuation of *halalantoyibban.* The implication of having *halal* integrity in *halal* sector is to produce and provide high quality trusted brand of*halal* products and services not only for Muslims but also for the world populations.

1.2 An Overview of World *Halal* Sector

The global *halal* sectors operate in China, India, Philippines, Thailand, Indonesia, United States, New Zealand, Iran, Egypt, United Arab Emirates (UAE), and France among other countries. The industries involved in *halal* sectors get the advantage of *halal* value added to their products and services. Such industries could be classified under three categories (Table 1.1), namely *halal* food products, *halal* non-food products, and *halal* services (Ibrahim, 2008). The *halal* food products are confectionary, canned and frozen foods, dairy products, bakery products, organic foods, herbal products and beverages, while *halal* non-food products consist of cosmetics, toiletries, beauty products, pharmaceuticals, leather products, and perfumes. The *halal* services comprise *Islamic* banking, securities and bonds, travel and tourism, supply chain and logistics, education, and training food services.

Table 1.1: Industries Involved in *Halal* Sector

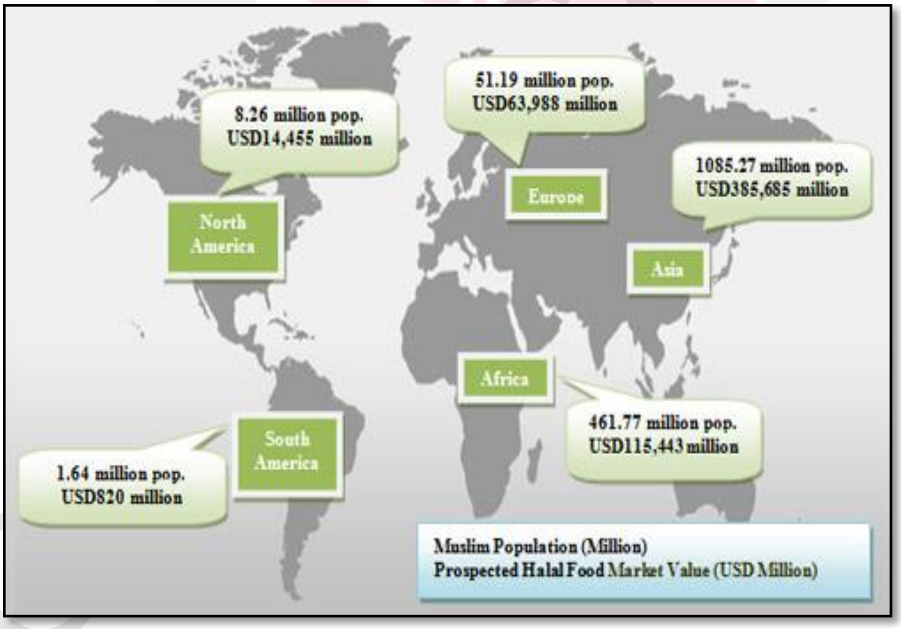
***Halal* Foods**	***Halal* Non-Foods**	***Halal* Services**
Confectionary	Cosmetics	Islamic Banking
Canned and Frozen food	Toiletries	Securities and Bonds
Dairy Products	Beauty Products	Travel and Tourism
Bakery Products	Pharmaceuticals	Supply Chain and Logistics
Organic Food	Leather Products	Education and Training
Herbal Products	Perfumes	Food Services
Beverages		

(Source: Ibrahim, 2008; Latif, 2011)

The increasing global Muslim population has led to increased demands for *halal* products and services across the globe (World *Halal* Forum, 2012). The Muslim population was reported at 1.86 billion in 2012, as is expected to grow 3.5% its size by 2030, representing about 26.4% of the global population. Asia lead the Muslim population count with 1,085.27 million Muslims in 2012, followed by Africa with 461.77 million, while Muslim populations in Europe, North America, and South America were 51.19 million, 8.26 million and 1.64 million respectively. The distribution of Muslim populations and their *halal* food market values for 2012 could be seen in Table 1.1.

As shown in Figure 1.1, South America accounted for the highest *halal* food market value in 2012 with USD820 million, followed by Asia with USD385 million while Africa accounted for USD115 million. However, the prospected markets of Europe and North America accounted only for USD63 million and USD14 million respectively (HDC, 2012).

In 2013, the statistics showed that the trade value of the global *halal* sector has increased to USD2.3 trillion to fulfill demands of the world Muslim populations (MIHAS, 2013). Furthermore, as reported by the Malaysia International Trade Industry (MITI) in the World *Halal* Summit (WHS) 2015 that the *halal* market is estimated to be worth USD2.3 trillion annually (MITI, 2015).



(Source: HDC, 2012)

Figure 1.1: Muslim Population across the World and *Halal* Food Market Value

Asia is home to the largest Muslim population in the world and is one of the biggest *halal* markets globally. The development of Muslim economies and emergence of new markets for *halal* could be seen from the import-export trade values among Asian countries. Table 1.2 summarizes the *halal* products export-import information between

China, India, and Malaysia. The Malaysian *halal* products import-export relationship with India in 2011 was reported at RM21 billion and RM4.1 billion respectively. However, the Malaysian-Chinese import and export trade value was reported much higher. Malaysian import-export with China accounted for RM80.6 billion and RM66.4 billion respectively. This high trade influenced a 10% annual rate of expansion of *halal* market in China worth USD2.1 billion.

Table 1.2: Malaysia Export and Import Trade Value in 2011

Trade Value	Import	Export	Muslim populations from total populations
India	RM 21.0 billion	RM 4.1 billion	13.4 %
China	RM 80.6 billion	RM 66.4 billion	3.0%

(Source: HDC, 2012)

The huge potential of *halal* industry are attracting several countries into the *halal* sector. Countries with large Muslim populations are likely drawn into this *halal* way of business. Some of the prospective countries include Indonesia, Pakistan, India, Bangladesh, Bahrain, Kuwait, Saudi Arabia, and Algeria, with Saudi Arabia, Turkey, Iran, and Malaysia leading in purchasing power among Muslims. Table 1.3 below shows the 2012 world *Islamic* countries ranking based on largest Muslim populations and largest percentage of Muslims of total population as well as purchasing powers of Muslim populations (Berry, 2011).

Table 1.3: *Islamic* Countries Ranking of Muslims Population and it Purchasing Power

Largest Muslim Population	Largest Muslims % of total population	Highest purchasing power of Muslims population
Indonesia	Bahrain	Saudi Arabia
Pakistan	Kuwait	Turkey
India	Saudi Arabia	Iran
Bangladesh	Algeria	Malaysia
Turkey	Iran	Qatar
Egypt	Oman	Russia
Iran	Turkey	France
Nigeria	Yemen	Libya
China	Tunisia	UAE
Ethiopia	Iraq	United States
Algeria	Libya	Algeria
Morocco	Pakistan	Singapore
Sudan	UAE	Indonesia
Afghanistan	Qatar	Egypt
Iraq	Egypt	The Netherlands

(Source: Berry, 2011)

The increasing growth in global *halal* sectors is attributed to contributions by various countries in the global *halal* markets. Indonesia, China, India, and Malaysia are the major contributors to *halal* food market in Asia while the metropolitan areas of New York, New Jersey, Long Island, and Los Angeles are the major contributors to *halal* food market in the United States. Russia, France, and United Kingdom are the major contributors to *halal* markets in Europe. The global key *halal* markets are however monopolized by Indonesia, United Arab Emirates, Algeria, and Saudi Arabia. Berry (2011) had listedmajor contributors of *halal* food market and global key *halal* markets as in Table 1.4.

Table 1.4: Summary of World *Halal* Food Contributors and Global *Halal* Key Markets across the World

Contributor	Countries
Major contributors of *halal* food markets in Asia	Indonesia, China, India, Malaysia, and Gulf Cooperation Council (GCC): (United Arab Emirates, Bahrain, Saudi Arabia, Oman, Qatar and Kuwait).
Major contributors of *halal* food markets in US (Top 10)	New York City, New Jersey and Long Island metropolitan areas, Los Angeles, Chicago, Detroit, Houston, Dallas/Fort Worth, South Florida, San Francisco, Atlanta, and Washington D.C.
Major contributors of *halal* food markets in Europe	Russia, France and United Kingdom.
Global key *halal* markets	Indonesia, United Arab Emirates, Algeria, Saudi Arabia, Iraq, Morocco, Iran, Yemen, Qatar, and Bahrain.

(Source: Berry, 2011)

1.3 An Overview of Malaysia *Halal* Sector

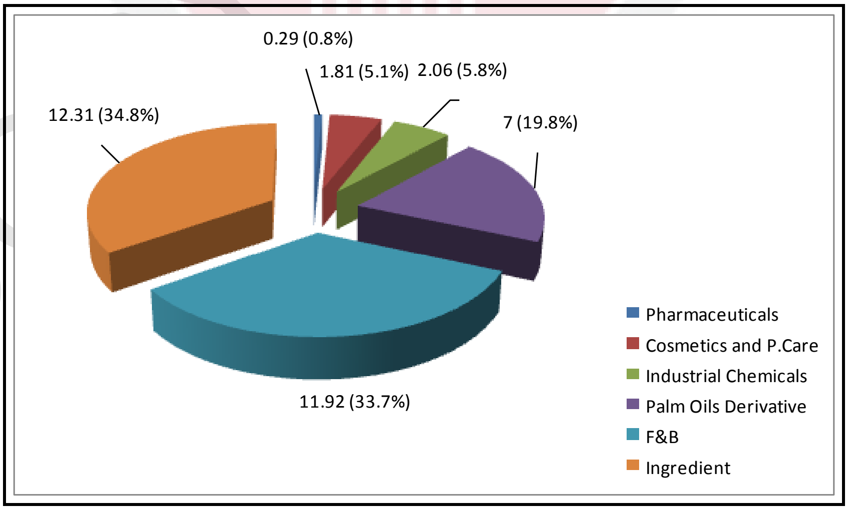
Malaysia ranks fourth highest in purchasing power among Muslim populations and is one of the key contributors to *halal* markets globally. These factors make the Malaysian *halal* sector desirable for industrial investments and involvement. The increasing Muslim population in Malaysia further sweetens the deal. According to census data, current Malaysian whole population is about 29.6 million and inherent Muslim population is 17 million (60.40%) (Kettani, 2010; IndexMundi, 2013). Statistical data reported the per capita food expenditure of a person to be about RM1 per day. With nearly 60% of Malaysian population comprising of Muslims, the demand for *halal* products could be calculated to an average value of RM5 billion a year. The data on Malaysian whole population and Muslim population over the years are summarized in Table 1.5 given below.

Table 1.5: Malaysian Population

Population/ Years	**1970**	**2000**	**2013**
Whole Population	10 million	23 million	29.6 million
Muslim Population	5 million (50.04%)	16 million (60.36%)	17 million (60.4%)

(Source: Kettani, 2010); IndexMundi, 2014)

In coherence with expanding Muslim population in Malaysia, the *halal* industries export value is also showing an increasing trend. The six industries namely pharmaceuticals, cosmetic and personal care, chemicals, palm oil derivatives, ingredients, and food and beverage are involved in *halal* sector export trade in Malaysia. In 2010, the ingredients or raw materials industry exported value worth RM12.31 billion (34.8%) followed by the F&B industry with RM11.92 billion (33.7%) and RM7 billion (19.8%) from the palm oil derivative industries. The chemicals industry, cosmetics and personal care industry and pharmaceuticals industry recorded lower export values of RM2.06 billion (5.8%), RM1.81 billion (5.1%) and RM0.29 billion (0.8%) respectively. The *halal* export value across industries is highlighted in Figure 1.2 given below.



(Source: HDC, 2011)

Figure 1.2: Malaysia *Halal* Export Value (RM billion)

The Malaysian government decides to develop Malaysia to become the World Hub *Halal* by 2020 as a means to further explore the potential of global *halal* markets. The government introduced *halal* parks as an initiative towards world hub *halal.* The plan behind development of *halal* parks was to have one park per state across Malaysia, to act as a focal point for *halal* business activities, especially for the F&B industries. In meeting with the objectives of *halal* parks, the Malaysian government pulled in foreign and multi-national corporations (MNCs) to invest and develop the targeted 20 *halal* parks across Malaysia. Currently around seven *halal* parks in Selangor, Sabah, Kedah, Pahang, Kelantan, Sarawak, and Penang are operational.

The Malaysian government appointed a government linked company (GLC) known as *Halal* Industry Development Corporation (HDC) in 2010 to monitor and manage *halal*parks across Malaysia. Along with above stated duties, the HDC also arrange programs to create *halal* awareness and enhance *halal*knowledge among industrial players, local communities and individuals involved in *halal* sectors. Training programs such as *Halal* Best Food Practice, *Halal* Awareness Program, *Halal* Professional Program, *Halal* Executive Program and Go *Halal*! are also organized by HDC. The Malaysian government collaborated with HDC to organized selected *halal* programs and *halal* showcases such as Malaysia International *Halal* Showcase (MIHAS), *Halal* Festival (HALFEST), *Halal* Conferences and *Halal* Seminars to support the *halal* industry.

HDC is not the only government body appointed to develop the *halal* sector in Malaysia. The Malaysian government appointed JabatanKemajuan Islam Malaysia, JAKIM(Department of Islamic Development Malaysia) to enforce, conduct, and issue *halal* certification. JAKIM is the authorized body responsible for implementation of *Shariah* laws in Malaysia including *halal* laws and it also plays the role of *halal* inspector to companies applying for JAKIM's *halal* certificate. Generally, the *halal* certificate issued by JAKIM has a validity period of two years however; the validity depends on JAKIM's consideration based on the applicant's capability to fulfill *halal* certification requirements. JAKIM is not hesitant to cancel the *halal* certificate in case of failure to fulfill all the halal requirements. The third body appointed by government for *halal* sector development is the Standards and Industrial Research Institute of Malaysia (SIRIM) which plays the role of publisher of Malaysia *halal* standards.

JAKIM awarded about 4,785 companies with *halal* certificate in 2011 (Table 1.6). Out of the 4,785 companies certified with JAKIM's *halal* certificate, 3,828 (80%) were small and medium enterprises while 957 (20%) were MNCs. The statistics also show that Bumiputera owned companies certified with JAKIM's *halal* certification accounted for only 1,531 (32%) companies while 3,254 (68%) of the certified companies belonged to non-Bumiputera. Further information could be seen in Table 1.6 below.

Table 1.6: Certified *Halal* Companies in Malaysia (Classification Based on Business Scale and Ownership)

Features	Classification	Total number of companies	Percentage
Business Scale	Small and Medium MNCs	3,828 957	80 20
Ownership	Non-Bumiputera Bumiputera	3,254 1,531	68 32

(Source: HDC, 2011)

The distribution of the 4,785 JAKIM *halal* certified companies is mostly within Peninsular Malaysia. Selangor area holds the highest number with 998 companies, followed by Johor, Perak, and Penang with 674, 624, and 513 certified companies respectively. The details distribution of JAKIM halal certified companies is given in Table 1.7 below.

Table 1.7: Distribution of *Halal* Certified Companies in Malaysia

State	No. of Companies	State	No. of Companies
Selangor	998	Pahang	223
Johor	674	Sabah	188
Perak	624	Kedah	171
Penang	513	Kelantan	153
Kuala Lumpur	328	Terengganu	74
Sarawak	293	Perlis	28
Melaka	259	Putrajaya	8
Negeri Sembilan	245	Labuan	6
Total : 4,785			

(Source: HDC, 2011; Rahman, 2012)

The high number of halal certified companies in 2011 could be due to increased involvement of industries in *halal* exports, indicated by the 5.1% contribution for export value the same year. As reported by HDC in 2011, Malaysia showed an increase in export value of *halal* products from RM23.1 billion (3.6%) in 2010 to RM35.4 billion (5.1%) in 2011 (Table 1.8).

Table 1.8: Malaysia's *Halal* Export and Contribution in 2010 and 2011

Year	Halal Export (Ringgit Malaysia billion)	Cumulative Export (RM billion)	Contribution of Halal (%)
2010	23.1	638.8	3.6 %
2011	35.4	694.5	5.1 %

(Source: HDC, 2011)

The increase in demand for *halal* products and services, fueled by increasing Muslim population has led to expansion of *halal* sectors and an increase in number of *halal* certified companies in Malaysia. This shows that Malaysia has the potential to be the world hub *halal* by 2020 with careful planning and development in this sector.

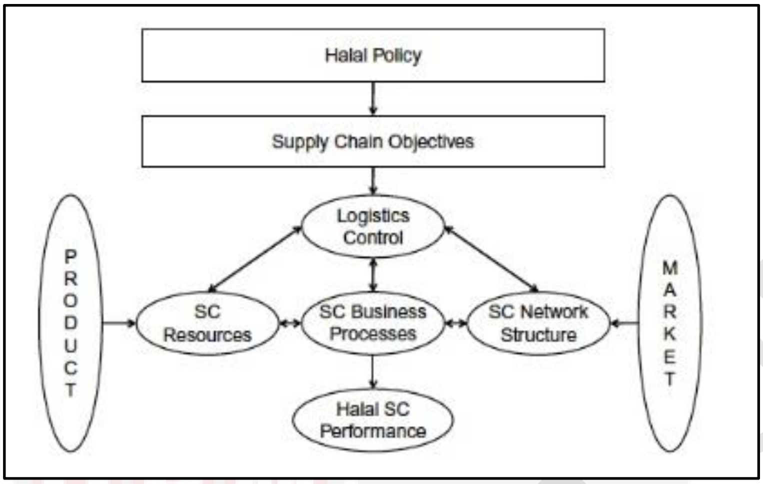
1.4 *Halal* Supply Chain

Supply Chain Management (SCM) is an integral part of business operations. Efficient SCM is crucial for smooth functioning of businesses. SCM basically involves management of the upstream and downstream processes of production, especially in the food and beverage industry, thereby coining the term “from farm to fork”. SCM could be described as the management of raw materials from the point of origin up to processing until it reaches the end-consumers.

The *halal* supply chain applies the same concept of SCM, but focusing more for *halal* products and services, and upholding *halal* standards. Furthermore, the principles of *halal* supply chain aim to uphold the *halal* integrity of products across the supply chain from farm to fork, to avoid cross contamination during handling of *halal* goods, and to ensure goods or products are safe for consumers.

Tieman, Ghazali, and Vorst (2012) argued that the *halal* sector should be completely integrated into the supply chain, since the *halal* requirements need to be met at every stage of the chain. The *halal* supply chain has to ensure *halal* integrity of *halal* products and services to fulfil the promise of *halal* to Muslim end-consumers for religious obligations. This is especially necessary for the F&B industries. In order to ensure that *halal* integrity is fully aligned with *halal* supply chain, *halal* policies and guidelines for industrial players are essential. The responsibility of providing *halal* policies and guidelines to industries in Malaysia fall under the SIRIM.

SIRIM introduced a few *halal* standards and guidelines for industrial players such as the standard for *halal* food industries handling (MS 1500:2008), standard for *halal* cosmetics and personal care (MS 2200:2008), standard for *halal* pharmaceuticals (MS 2424:2012) and standard for *halal* logistics industries (MS 2400:2010). These *halal* standards could be differentiated based on indexing method as showed in brackets. For instance, Malaysia Standard (MS) 2400:2010 is example of Malaysia *halal*standard, which are focusing on transportation, warehousing, and retailing activities and was introduced to industries in 2010. It provides policies and extensive guidelines needed for *halal* industries players and practitioners to ensure the fulfilment of *halal* requirements along the *halal* supply chain with regard to *halal* integrity. The model of *halal* supply chain management principles discussed by Tieman*et al.* (2012) is shown in Figure 1.3. This model was amended from framework for chain/network development developed by Van der Vorst and Beulens (2002) based on Cooper’s frameworks (Cooper et al, 1997) to be halal supply chain model.



(Source: Tieman *et al.*, 2012; Cooper *et al.*, 1997)
Figure 1.3: Principle of Halal Supply Chain

The first element in *halal* supply chain principle is *halal* policy. *Halal* policy facilitates top management to take responsibility in protecting *halal* integrity thus meeting the *halal* supply chain objective as a whole. Logistics control is the main component of the *halal*supply chain model. It is involved in decision-making process of organizations, management of planning and control of good or products flow, *halal* products development, purchasing, manufacturing, and distribution of *halal* products until it reaches the end-consumers. The involvement of other elements of *halal* supply chain, namely supply chain resources, supply chain business process, supply chain network structure and *halal* performance ensure holistic *halal* integrity, thereby ensuring end-consumers' satisfaction with product quality.

Supply chain resources deals with organizational information and management processes involved in *halal* integrity across the supply chain. For instance, a *halal* committee is required to fulfil *halal* certification requirements before performing key business processes of customers relationship management, customers service management, demand management, order fulfillment, manufacturing flow management, product development and commercialization, procurements, and returns (Lambert, Cooper, and Pagh, 1998). Out of the eight business elements, procurement is the critical process in *halal* supply chain due to its role in defining and managing upstream supply chain network (Tieman*et al.*, 2012).

Supply chain network structures is about networks that connect interdependent organizations that work together to manage, control and improve the flow of *halal* materials and information (Aitken, 1998). The performance of *halal* supply chain is the final component in *halal* supply chain principle, and its measurement involves evaluation of effectiveness perspective of the supply chain. The two key areas to be evaluated are process quality and waste generation wherein process quality addresses the trust of a brand and waste management measures the waste generated during production until it reaches the end-consumer. Furthermore, supply chain performance also involves efficient price evaluation of *halal* products through ordering system. The *halal* supply chain performance should however be robust by design in order to protect the *halal* products along the supply chain under varied circumstances.

1.5 *Halal* Logistics

Halal logistics is one of the key elements involved in *halal* products flow management in the *halal* supply chain principle. *Halal* logistics is defined as 'the movement of *halal* raw materials to processing plant up to warehousing and retailers until it reaches the end-consumers' (Tieman, 2011). It has three definite objectives namely (i) to avoid cross contamination across the wide diversity of products especially for perishable items and raw items, (ii) to avoid making mistakes in products information and (iii) to ensure that Muslim consumers get the *halalantoyibban* products. It is essential for logistics players in *halal* industries to follow the *halal* standards to meet the demands for *halalantoyibban* products and services. Based on the Malaysia *Halal* Logistics Standard (MS 2400:2010) by SIRIM, *halal* logistics standard is further classified into *halal* transportation (MS 2400:1), *halal* warehousing (MS 2400:2) and *halal* retailing (MS 2400:3) standards as shown in Table 1.9.

Table 1.9: Malaysia *Halal* Logistics Standards

Indexing of Standard	**Malaysia *Halal* Standard**
MS 2400: 2010 (1)	Malaysia Halal Logistics Standard (Transportation)
MS 2400: 2010 (2)	Malaysia Halal Logistics Standard (Warehousing)
MS 2400: 2010 (3)	Malaysia Halal Logistics Standard (Retailing)

(Source: SIRIM, 2012)

These standards provide guidelines, rules, and regulations to be followed by the respective *halal* logistics activity. General requirements proposed in this standard focus on the need for a logistics organization management team to ensure fulfillment of basic requirements for *halal* logistics such as dedicated facilities, Muslim workers (minimum two persons), establishment of *Halal* Committee, providing information system for *halal* products and services, and performing products segregation system during handling of *halal* products. All the guidelines and requirements should be fulfilled to ensure the *halal* logistics integrity along *halal* supply chain.

For instance, KontenaNasional (KN) Berhad pioneered*halal* logistics in Malaysia. KN was the first logistics company in Malaysia to be certified with JAKIM's *halal* certification in 2011. As they comply with the *halal* logistics standard MS 2400:2010 (1 & 2), it is easy for KN to fulfill JAKIM's *halal* certificate requirements. They also serve as an example to other logistics players on continuous commitment to *halal* standards forJAKIM *halal* certification. However, not many logistics players in

Malaysia are able to show continuous commitment towards fulfillment of MS 2400:2010 and JAKIM's *halal* logistics certification requirements. According to the Company Commission of Malaysia (SSM), about 1,300 logistics companies are currently registered and operating in Malaysia, out of which 390 (30%) logistics companies have reported involvement in handling food products (SSM, 2012). According to HDC (2013), the number of food-based logistics companies currently certified with JAKIM's *halal* certificate does not match with the number of food-based logistics companies registered under SSM. JAKIM attributes this default to the high level of commitment and requirements needed for logistics companies to ensure *halal* integrity. In addition, *halal* certification is yet compulsory for food-based associate-business. Thus, *halal* certification of food-based logistics players can be easily choose either to practice *halal* in their operation or not based on their willingness.

Until 2013, only five main logistics players in Malaysia were certified with JAKIM's *halal* certification namely Malaysia International Shipping Company (MISC) Integrated Logistics SendirianBerhad, Century Logistics Holdings Berhad, Freight Management Holdings Berhad, Penang Port SendirianBerhad**,** and
Kontena Nasional (KN)Berhad. All the above certified logistics companies are currently operating at *halal* parks across Malaysia. A summarization of their logistics business offerings is provided in Table 1.10.

Table 1.10: *Halal* Certified Logistics Companies and Their Business Operations

Company	Services/ Products
Malaysia International Shipping Company (MISC) Integrated Logistics SendirianBerhad	• Transportation • Bonded and non-bonded warehouse • Distribution center and cold room • *Halal* Logistics
KontenaNasional(KN) Berhad	• *Halal* storage and warehousing • *Halal* transportation (containerized and conventional) • *Halal* Distribution and *Halal* Shipping • *Halal* Freighting for sea and air cargo • Samak service for containers and customs facilities • *Hala*l value added services such as labeling and packaging • *Halal* Advisory Services on Certification
Freight Management Holdings Berhad	• Transportation • Warehouse • Container Haulage
Century Logistics Holdings Berhad	• *Halal* Logistics & Transportation • Warehouse and distribution center
Penang Port SendirianBerhad	• Cargo • Container • *Halal* Logistics (Container and warehouse)

(Source: HDC, 2013)

As showed as in Table 1.10 above, there are only few logistics companies were certified with MS 2400:2010 in 2013 however, the number of LSPs certified has been increasing slowly. In the latest directory of halal logistics companies in 2015 from HDC and JAKIM, there were eight companies certified with halal logistics certification. There are GC Logistics SdnBhd, HAVI Logistics (M) SdnBhd, MISC Integrated Logistics SdnBhd, Pokka (Malaysia) SdnBhd, SB Supplies Logistics SdnBhd, KonsortiumLogistikBerhad, Kontena Nasional Berhad and Nippon Express Malaysia Sdn Bhd. Among of these eight logistics companies, only the last three companies were appeared in JAKIM directory meanwhile the rest were only identified by HDC (HDC, 2015; JAKIM, 2015).

The Malaysian government's vision of world hub *halal* by 2020 drives the implementation of *halal* operations across industries in Malaysia. Currently only a few food-based logistics companies are certified with JAKIM's *halal* certification and the existing food-based logistics companies have to improvement a lot beforeimplementation of *halal* and providing *halal* logistics services. The idea of *halal* logistics implementation could be seen as an innovation among food-based logistics players in the global *halal* sector. The Theory of Diffusion of Innovation (DOI) explains the necessity of knowledge parameter to better implementation of an innovation. This point could well apply to *halal* implementation across industries. According to Sahin (2006), knowledge about *halal* is essential for better implementation of *halal* logistics. In addition, top management of organizations should study the important aspects that facilitate their readiness towards implementation of *halal* logistics. However, the newness of *halal* logistics in Malaysia means that problems are still reported in implementation of *halal* logistics, and this could slow down Malaysian government's efforts to be world hub *halal* by 2020.

1.6 Problem Statement

Malaysia is a highly viable and demanding *halal* market. It is one of the major contributors to *halal* food markets in Asia. High purchasing power and increasing Muslim population of Malaysia further adds value to *halal* industry of Malaysia. Malaysian industries of pharmaceuticals, cosmetic and personal care, chemicals, palm oil derivatives, ingredients, and food and beverage (F&B) are involved in *halal* sector export trade in Malaysia. In 2013, the ingredients or raw materials industry exported value worth RM10.62 billion (32.5%) followed by the F&B industry with RM13.02 billion (39.8%) and RM4.83 billion (14.8%) from the palm oil derivative industries (MITI, 2014). Understanding the potential of global *halal* sectors, the Malaysian government envisioned Malaysia to be the world*halal* hub by 2020.

The creation of *halal* hub needs confirmation of *halal* integrity across the *halal* supply chain. This is important in case of food products, especially of the F&B industry. In order to ensure *halalantoyibban* status for the whole chains, all relevant activities towards *halal* food products should be compliant with halal. If the *halal* food producers or manufacturers use logistics service providers (LSPs) fortransporting or as aforwardingagent of their *halal* food products,these LSPs also need to comply with *halal* requirements.Nevertheless, there are still problems with these LSPs as they handle distribution activities without the segregation of *hala*l and *non-halal* products. This problem is mainly seen in the case of imported fresh agricultural products especially fresh meat as well as *halal* processed food, wherein chances of lapse in *halal* logistics might occur due to involvement of multiple supply chain players across the supply chain. This problem might also occur due to less knowledge on *halal* handling among these logistics players. Therefore, *halal* sector should be completely integrated into the supply chain, since the *halal* requirements need to be met at every stage of the chain.

The *halal* supply chain has to ensure *halal* integrity of *halal* products and services to fulfil the promise of *halal* to Muslim end-consumers for religious obligations. At the same time, different *halal* guidelines and best practices of *halal* logistics across the world may result in difficulties among food-based logistics players to implement *halal* logistics. This necessitates the development of a standardized guidelines and regulations for *halal* integrity across the *halal* supply chain.

In order to avoid above stated problems, the Malaysian government took certain measures to develop the idea of *halal* integrity across industries in Malaysia. First, they came up with the idea of *halal* parks across Malaysia. The government also delegated the work of *halal* implementation across industries to three major government organizations namely HDC, JAKIM, and SIRIM. The HDC is concerned with management of the *halal* parks, and also plan training modules like *Halal* Best Food Practice, *Halal* Awareness Program, *Halal* Professional Program, *Halal* Executive Program and Go *Halal*!, to increase awareness about *halal* among industrial players. The Malaysian government collaborated with HDC to organize selected *halal* programs and *halal* showcases such as Malaysia International *Halal* Showcase (MIHAS), *Halal* Festival (HALFEST), *Halal* Conferences and *Halal* Seminars to support the *halal* industry while JAKIM acts as the enforcer, to conduct, inspection, and issue *halal* certification to companies. Lastly, SIRIM is concerned with publishing of *halal* standards. SIRIM has introduced a few *halal* standards and guidelines for industrial players such as the standard for *halal* food handling industries (MS 1500:2008), standard for *halal* cosmetics and personal care (MS 2200:2008), standard for *halal* pharmaceuticals (MS 2424:2012) and standard for *halal* logistics industries (MS 2400:2010).

Irrespective of the measures taken up by Malaysian government for *halal* implementation across industries, the changes have been incremental rather than radical. The statistics from SSM and JAKIM indicate a gap in *halal* certification by food-based logistics companies (HDC, 2013). This is due to JAKIM's attributes this default to the high level of commitment and requirements needed for logistics companies to ensure *halal* integrity. The requirement of dedicated cold rooms, shelves, containers and workers in handling *halal* products, increased financial investment, and employees training on *halal* prevents food logistics players from implementing the *halal* way of business. For instance, KN Bhd., the pioneer of *halal* logistics in Malaysia invested about RM3 million in 2011 to fulfill *halal* logistics requirements to get JAKIM's *halal* certificate. This investment may not pose a problem to international and MNC companies of Malaysia, but it will certainly be a major obstacle for the small and medium scale food-based logistics players. Thus, high cost and impending *halal* requirements and conditions prevent food-based logistics companies from complying with JAKIM's *halal* certification.

The lack of enforcement of *halal* logistics from authorized bodies is also another reason behind reduced number of *halal* certified companies in Malaysia. While the HDC and SIRIM have done their roles to assist *halal* sector by providing *halal* programs and *halal* guidelines for industries, enforcement by JAKIM for *halal* certification inspection was found lacking. This might be attributed to shortage in number of officers available for *halal* inspection of companies applying for the certificate. Such delayed responses by JAKIM might confuse the industrial players and also hinder them from complete involvement in *halal* integrity across the *halal* supply chain.

Halal food and beverage producers who manage to use LSPs as their distribution agents will encounter loops of *halal* integrity in *halal* supply chain if their forwarder agents failed to continuously practices *halal* in their operations. This will contradict with the principle of halal supply chain management. Thus, there is a need for top management of logistics companies to understand their organization's readiness towards *halal* implementation before application of *halal* standards and JAKIM's *halal* certification. The next section deals with research questions and objectives to solve this problem.

1.7 Research Questions

This study addresses two specific research questions. The questions focus on understanding *halal* logistics as perceived by food-based LSPs and factors that influence towards readiness of *halal* logistics.

1. What is the level of knowledge of *halal* logistics among food-based LSPs in Malaysia?
2. What are the factors that influence readiness towards *halal* logistics among food-based LSPs in Malaysia?

1.8 Objectives of the Study

The main objective of this study is to investigate the readiness factors towards implementation of *halal* logistics among the food-based LSPs in Malaysia. Therefore, the specific objectives of this study are:

1. To investigate the level of knowledge on *halal* logistics among food-based LSPs.
2. To determine readiness factors that influence implementation of *halal* logistics among food-based LSPs.

1.9 Significance of the Study

Multiple variables contribute towards readiness of an organization towards changing. In case of *halal* logistics approach, the same variables could be used to evaluate the readiness towards *halal* logistics implementation among food-based logistics players in Malaysia. Since *halal* approach is considered a relatively new and innovative logistics operation, understanding and knowledge regarding *halal* should be the first element to be studied on innovation implementation (Sahin, 2006), while right intention towards *halal* logistics (Tieman*et al*., 2012) may contribute towards readiness of organization in managing changing towards *halal* logistics. Others readiness variables such as company vision towards changing, employee's acceptance towards changing and management support on changes in organization as well as environment, taking into account internal and external factors (Salleh, Alshawi, Sabli, Zolkafli, and Judi, 2010; Susanto, 2008;Weiner, 2006) could also be further tested with this study as the base.
This study aims to disseminate information on influential factors to readiness towards *halal* logistics implementation among food-based logistics players in Malaysia. It is hoped that this study would provide the necessary background on variables for consideration while implementing and managing *halal* logistics among companies. It is also implied to give an insight to industries on sustainability of *halal* logistics operations in the business. The study on barriers to readiness covered in this study could be used as necessary guidelines to efficient planning of *halal* logistics operations within industries. It is also hoped that this study would provide necessary information for authority bodies to improve their services to industries and to improve *halal* policy and standards.

1.10 Organization of the Thesis

The thesis is divided into five chapters. Chapter one provides a background on the research topic, discuss the problems in the industry and need for research, the development of research questions and objectives for the study. Chapter two summarizes previous literatures and findings related to organization readiness towards changing and factors that influence organization readiness. Chapter three explains the conceptual framework, research methodology and analysis methods used in this study. Chapter four discuss on the analysis of data and results of the study. Finally, chapter five provides a conclusive summarization of the research, highlighting the results from the study, recommendations, as well as limitations of the study.

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