

## **Towards an Integrated and Streamlined Halal Supply Chain in Malaysia-Challenges, Best Practices and Framework**

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**Abstract:** The rapidly growing global halal market has given a unique window of opportunity which may enable Malaysia to become the global hub for halal food. Malaysia has already taken a lead by developing a halal assurance system which is now considered as the benchmark for a global assurance system and establishing the halal industry development corporation which driving a wide range initiatives. In parallel to these developments, the research communities around the world have also launched various projects to investigate issues surrounding the halal industry. Among them, halal logistics have attracted the attention of many researchers. However, a preliminary literature survey revealed that research in this area is patchy and no efforts have been taken yet to assimilate best practices emerging from various studies to formulate a framework which enable all stakeholders to work together to create an efficient, cost-effective and integrated halal supply chain. A coherent and holistic approach is required to ensure that a seamless halal logistics become the backbone of a global supply chain. This conceptual study proposed a research work that aims to fill this gap by developing a streamlined and integrated framework for halal global logistics.

**Key words:** Logistics, halal supply chain, coherent, stakeholders, integrated

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### **INTRODUCTION**

The demand of halal products has seen a significant growth over the past few years. The trade of the halal goods is estimated to be worth more than USD 2.1 trillion. In 2010, the segment of the halal food market makes up about 16% of the world food trade. The halal market is becoming more broaden which is now included not only Muslim consumers, but also non-Muslims consumers. These consumers are very conscious about the halalness quality of the products that they purchase.

To ensure the credibility and integrity of the halal products, the Malaysian government has set up many agendas toward the development of Malaysia as a world halal-hub. These include, the establishment of the Halal Development Corporation (HDC) in 2006 to promotes the overall development of halal industry in Malaysia; the promulgation of halal certifications from the department of islamic development Malaysia which also known as JAKIM and the launch of e-Halal portal to cater halal applications, inquiries, recommendations and complaints through online. The Malaysian government is also taking

a significant part in the growth of small businesses (Omar *et al.*, 2015) and the development of standard halal certification process across the world.

Even though, more involvement from various stakeholders (e.g., the government, JAKIM, HDC, manufacturers, suppliers, retailers and etc) are established, the credibility and integrity of halal goods were yet undetermined. In view of the fact that halal markets are becoming a lucrative new industry, mismatch between halal know-how from the manufacturers and the principles of halal products are worrying. Consumers including both Muslim and non-Muslim communities are extremely selective with the range of products offered in the market. Halal products are one of the benchmarks for the selection as these products offer reliable assurance of safety and quality.

Currently, in the market for halal products is widely distributed over the entire world. This has led to an increase in demand for halal products not only by Muslim countries but also by non-Muslim countries. Therefore, halal is no longer exclusively for Muslims which results in a product that became highly in demand at the global level

which stressed the need for halal supply chain. Since then, halal supply chain has become essential in ensuring that the concept of halal is not only can be used for food itself but also to the entire supply from farm to customer (Omar and Jaafar, 2011).

Leading merchants such as Walmart in USA and Carrefour in France have been initiating an expansion of their products to introduce halal meat in their local stores. Previous efforts in a retail nature were commonly ineffective because of lack of sensitivities in the consumption behavior of halal product's consumers and also uncertainty issues of the labelling and specification of halal products (Bonne and Verbeke, 2008). Furthermore, the halal supply chain is not only included the physical products being traded but also involve related intra and inter-organizations, services such as upstream and downstream players, logistics and Islamic finance. Ultimately, the emerging trend of halal products and its supply chain trade opportunities, intensify the prominence of unified halal standard that may further develop the halal market opportunities.

**Problem statement:** Consumers of halal product usually purchase product with a halal logo stamped on the packaging without doubting its authenticity and trusting the suppliers whole-heartedly (Alqudsi, 2014). Therefore, it can be imagined the outrage by consumers when a product with halal logo become in doubt when such product is declare un-halal during routine check by the authority.

In 2014, Cadbury Malaysia has to recall its dairy milk hazelnut and dairy milk roasted almond bars from shelves after the Malaysian health ministry found traces of porcine DNA in the products which were labeled as "halal". This however was found untrue when Malaysian director-general of the health ministry, said there could be a "possibility of contamination" from another source as the initial samples didn't come direct from the Cadbury factory. The issues of contamination has raised concern among consumers and authority as well.

The increase in the demand for halal products has led to many studies that focus on its product manufacturing. However, the halal supply chain becomes increasingly more complex since the halal food trade has become more globalized. Therefore, consumers concern now is not only the manufacturing process but also all activities along the supply chain of halal food products. This is because compliance for the whole supply chain of halal is ranged from the source of raw material to the manufacturing, transportation, warehousing, handling freights.

One of the major concerns of the business sector today is how to assure and maintain the halal verification throughout the entire process along the supply chain. Many issues along the supply chain may cause halal validity unreliable. According to Tieman *et al.* (2012), maintaining the halal performance in supply chain, especially during the transportation process is a major challenge. Jaafar also stated that to achieve halal compliance in the supply chain is almost unavailable. This is because many stakeholders involve in the transactions of halal products and each of these transactions are crucially important to be always maintained and handle by using halal procedures. For example, in the livestock industry, many aspects have to be within the halal standard procedures. Currently, the certification process has seemed to be isolated based on the stages or processes. For examples if company A applies for a halal certification of their chicken meats, the certification therefore will be based on the slaughtering process in the company A. This kind of certification although valid to certified company A's halal process but it cannot certify the originating source of the chicken and also the transportation method.

Supply chain consists of all parties involved, directly or indirectly in fulfilling a customer request. In fulfilling the demands of halal chicken meats, the processes involved in the supply chain include pre-slaughtering, slaughtering and post-slaughtering process. Pre-slaughtering include the process of rearing the livestock (e.g., breeding, facility and food supply) and post-slaughtering include the process of packaging, labelling and transporting the livestock.

During pre-slaughtering phase, halal issues include, among others, the feeding and breeding procedures. The organizations have to ensure that the animals are fed only with the halal food. Non-halal foods including pork, blood, animal carcasses are prohibited and preparation of the animals food need to be done with care to ensure food cleanliness and no contamination of halal and non-halal during preparations. At the later stage of the supply chain, other issues have to be dealt with the organizations to ensure no contamination between halal products with non-halal products. Major concern is that logistic services are often offered by a third party logistic provider (3PL) and it is extremely difficult to assure no breakage of halal procedure during transportation of the products.

Therefore, any attempt to develop a new plan or tool for incorporating halal procedures in the supply chain needs to take into account many elements, including the implicit and explicit halal procedures, culture, relevant

stakeholders as well as the limitations and constraints of specific environment applied to them. Moreover, most of the halal transactions are based highly on the element of trust among supply partners. Therefore, a new framework of halal supply chain is needed as this framework may act as a blueprint for a company to assure the halal quality of their products.

**Research questions:** The primary research question addressed in this study is. How to incorporate the halal concept in the current supply chain framework to ensure halal quality and integrity throughout the whole supply chain processes. To answer this main research question, following sub-questions are also addressed:

- How organizations deal with the halal issues currently?
- Do they view the halal concepts in the supply chain as comprehensive practices which involve all stakeholders since the first process of obtaining the material until the products reach the customers?

**Objectives of the research:** This study embarks on the following objectives:

- To conduct an extensive literature review and assemble best practices emerged from the research
- To conduct a comprehensive survey all stakeholders in halal supply chains to identify current challenges and stakeholder aspirations
- Develop framework to assemble best practices from a wide range of industries to formulate a framework which can be used all stakeholders in a global halal supply chain
- Validate and refine the framework through the stakeholder feedback
- Disseminate the framework and other findings through conference/journal publications and workshops

#### **Literature review**

**Halal supply chain management:** A basic concept of a supply chain consists of all parties involved in fulfilling a customer request (Chopra, 2013).

To fulfil the customer request, organizations need to coordinate the production, inventory, locations and transportation among all parties in a supply chain (Hugo, 2006). Supply chain management is the integration of suppliers, manufacturers, distributors and customers in which raw materials source from suppliers to

manufacturers who then produce them into finished products and coordinate delivery to the customers (Jie, 2008).

The concept of Halal supply chain uses similar principles as conventional supply chain management with some special attention and endorsement of the products and services related to the products. Basic notion of halal supply chain is to ensure that the halal quality of the products is maintained throughout the entire supply chain which begins during the sourcing, manufacturing and distributing processes. During each stage, it is important to ensure that there is no contamination occurs between halal and non-halal products. Therefore, the halal supply chain concerns the process of planning, implementing and controlling the efficient flow and storage of Halal certified products from source to the demand point.

**Policies and objectives of halal supply chain:** As stated before, to ensure credibility and integrity of halal products, preventive actions should take place as early as possible which starts from the sourcing process. Figure 1 shows the flow of goods and information from suppliers to end consumers. In order to ensure that end consumers received halal quality products, it is crucial to define policies and objectives of halal supply chain (Tieman *et al.*, 2012). Three factors that determine the foundation of halal supply chain are (Tieman, 2011):

- Direct contact with non-halal products
- Risk of contaminations
- Consumers perception

To develop a new framework of halal supply chain that incorporates these three factors, existing supply chain models need to be reviewed to find suitable model that can be adapted to cater halal principles. There are several SCM models that appropriate to closely facilitate the halal policies such as SCM framework (Cooper *et al.*, 1997), partnership model (Spekman *et al.*, 1998) and the resource based view perspective (Rungtusanatham *et al.*, 2003). All of the SCM models that has been reviewed, seems do not contradict with Islamic laws. However, key aspects of halal principles are not embedded in these models. Some of the SCM model such as a model developed by Tieman *et al.* (2012) has embedded some halal principles. However, the model is focused on logistic feature which is considered as an outbound phase in a SCM. Other study conducted by Jaafar also focusing in logistics services. Only one study that seeks to integrate halal principles throughout the entire supply chain is

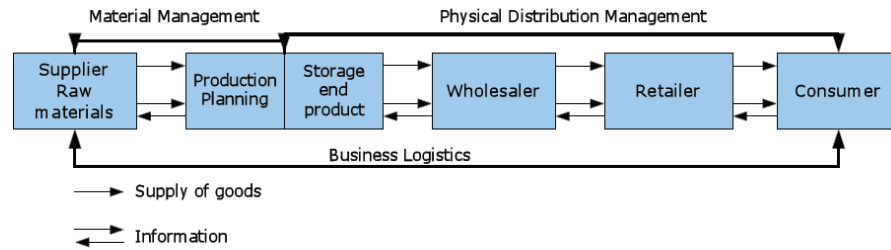


Fig. 1: Flow of goods and information from suppliers to end consumers

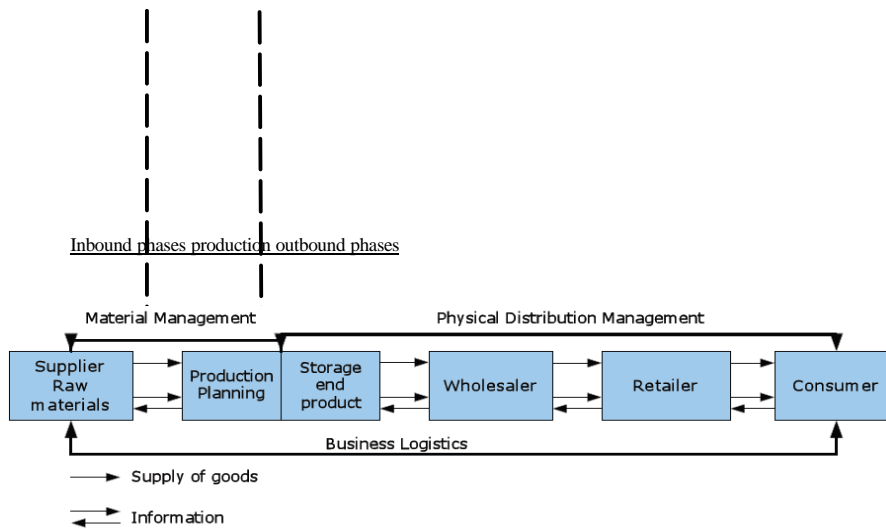


Fig. 2: Three phases stages of supply chain in halal-hub industry supply chain in halal-hub industry

found in the literature which is a conceptual study by Omar and Jaafar (2011). However, the model proposed is still patchy and need to be evaluated and developed further.

**Halal supply chain concepts:** In this study, the concept of halal supply chain encompasses three phases:

- Inbound phases
- Production phases
- Outbound phases

These three phases describe stages of supply chain in halal-hub industry in which halal check points are very important at each stages. These three phases include the entire process of obtaining halal products. The processes are illustrated in Fig. 2 which include pre-slaughtering and post-slaughtering processes.

**Inbound phases:** Inbound phases in the halal supply chain include the process of sourcing of raw materials. The critical issue here is pre-slaughtering issue that include a

process of rearing the livestock. There are several aspects that have to take into consideration which are the animals breeding and animals feed. Animals should be fed with halal sources only and the feed mill should not contain any non-halal materials such as animal enzymes or pork hormones. Any genetic modified organism from non-halal animals is also not permitted to be fed to the livestock.

**Production phases:** The second processes are the production phases. In this study, production phases discuss is the slaughtering process. This is the major issues that have been highlighted in the Malaysian food industry. The slaughtering process has to be made according to the Islamic ritual. There are several conditions that need to be met during the slaughtering process:

- The person that performs the slaughtering process should be a Muslim
- The knife used must be sharp
- The slaughtering process must be in the name of Allah
- The abattoirs must always maintain the cleanliness

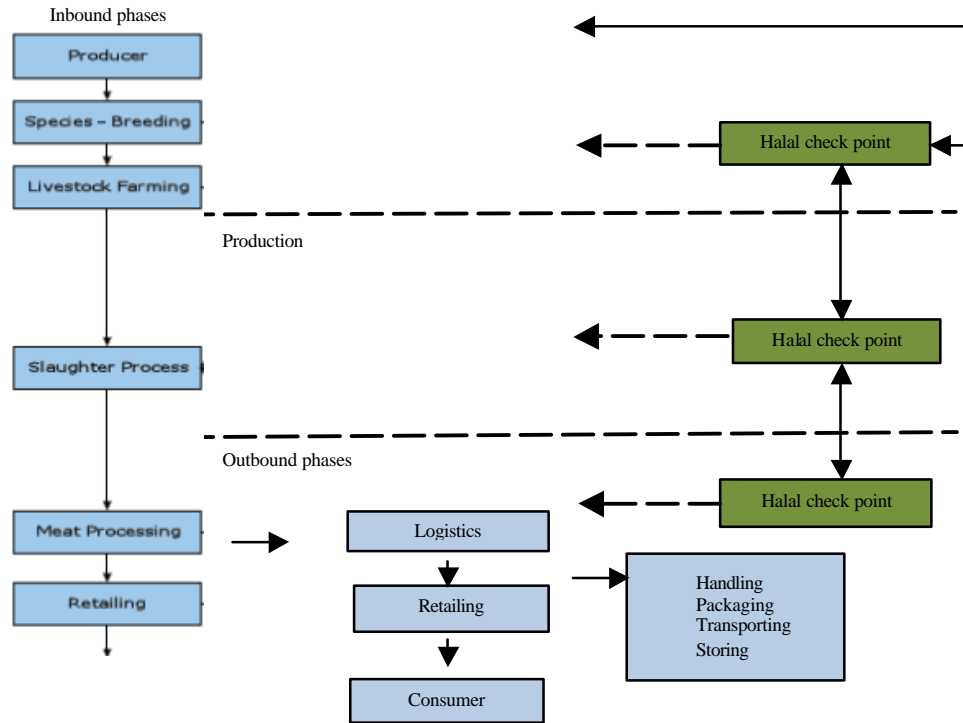


Fig. 3: The new conceptual framework of halal supply chain

In accordance to the controversial issues of slaughtering ritual, many countries obligate that the animals to be stunned before they are slaughtered. Although this process is not written in the Quran or the Sunnah, some Muslim scholars accept the stunning process provided that the livestock are still alive before they are slaughtered. According to Bonne *et al.* (2007), stunning process is principally introduced for safety, which is to prevent the workers being injured by any unpredictable spasm of dying animal. However, non-lethal method of stunning should be used to stunned the animal (Riaz and Chaudry, 2003).

**Outbound process:** Finally, the outbound process is also contributed critically to the success of halal supply chain. To ensure halal quality is ascertain during the process, proper segregation is needed to ensure no contamination of non-halal with the halal products. According to Omar and Jaafar (2011), proper segregation should be determined during handling, packaging, transporting and storing of the products. In term of packaging, clear guidelines of packaging is needed to ensure halal quality is maintained especially when handling wet material. However, if products are properly sealed and prevention of cross-contamination is warranted, segregation of halal and non-halal products is not compulsory. The container used for transporting the products is also clean and not

contaminated with non-halal residue. If contamination happens, the containers need to be clean thoroughly before it can be used to transporting halal products. The cleaning procedures should use the procedure stated in the Islamic laws. The new conceptual framework of halal supply chain Fig. 3 illustrates the new conceptual framework for this study. The framework starts with the inbound process until the outbound process. The halal checkpoints are needed at each stage of the supply chain. Feedbacks are channel from stakeholders to the producer consistently.

## MATERIALS AND METHODS

According to Thomas (2003) the quantitative and qualitative research perspectives have various methods categorize under them. There are three types of methods under quantitative perspective and three types of methods under qualitative perspective. For quantitative perspective, there are surveys, correlation analyses and experiments methods and for qualitative perspective there are case study, ethnographies and experience narratives. Cresswell and Clark highlighted that mixed method approaches provides a better understanding of research problems than either approach alone. They listed that mixed methods:

- Provides strengths that offset the weaknesses of both quantitative and qualitative research
- Provides more comprehensive evidence for studying a research problem than either quantitative or qualitative alone
- Helps answer questions that cannot be answered by quantitative and qualitative alone
- Encourages researchers to collaborate across the sometimes adversarial relationship between quantitative and qualitative researchers
- Encourages the use of multiple worldviews or paradigms rather than typical association of certain paradigms for quantitative researchers and others for qualitative researchers
- “Practical” in the sense that researcher is free to use all the methods possible to address the research problem

Viewing the above the appropriate method for this research is triangulation of methods meaning mixing of both quantitative and qualitative methods. Triangulation is looking at something from multiple points of view in order to improve accuracy (Neuman, 2006). Therefore, this research will utilize mixed methodology which will be conducted in three phases. The mixed methods will be employed due to the nature of the study which will focus on inbound and outbound phases in the halal supply chain, and also in-depth understanding of the features and characteristics of halal practices.

## RESULTS AND DISCUSSION

**Phase 1:** Survey methods enjoy tremendous popularity as a research tool in the social science because of their flexibility, practical utility and applicability in numerous situations (Schutz *et al.*, 2004). It involved gathering information about the current status of target variable within a particular collectivity, then reporting a summary of the finding which includes data in quantitative form (Thomas, 2003). For this phase, a quantitative approach is recommended where a survey to be conducted to gather feedback on how organizations deal with the current halal issues. Based on this finding, Structural Equation Modeling (SEM) will be used in quantitative data analysis to propose a model of halal supply chain

**Phase 2:** A qualitative approach to be deployed where workshop with stakeholders to be conducted with a purpose to obtain an understanding of current issues and industrial practices in the halal inbound and outbound system. This will be followed by a visit to stakeholder where observation and interview to be conducted to obtain further data on halal practice. Based on the

interview outcome researcher should be able to map out the existing practice of these halal practitioners. For the pre-slaughtering the respondent could be from the animal breeder and the animal feed supplier. While for the post slaughtering the slaughter house/plant, the wholesaler and retailer could be the respondent.

An interview with the authority on halal is also to be conducted in order to understand the current halal certification procedure. Jakim and other overseas halal certification body could be the respondent and qualitative analysis using the method recommended by Miles and Huberman to be used.

**Phase 3:** Based on the finding in Phase 1 and 2 an integrated halal supply chain framework to be developed.

## CONCLUSION

The unified of the halal standards is not only limited towards the ingredients of the products but also encompasses entire activities along the supply chain as early as farming procedures, harvesting, processing, transporting and all the way until the consumers received the products. Consumers are unaware of the halal food requirement involved the halal supply chain and logistics aspects (Alqudsi, 2014). Therefore, it is imperative that a comprehensive halal supply chain logistic standard need to be established. The question poses here is whether the credibility and integrity of halal products can be ascertained throughout the entire supply chain. How is the halal supply chain working to encompass present issues of halal market scenario? There is a dearth of halal supply chain literature, especially peer-reviewed publications. Only a few studies try to embark on part of the supply chain issues such as logistics, management and processes. This research is concerned to develop a new halal supply chain framework that assembles best practices from a wide range of industries which can be used by stakeholders in a global halal supply chain.

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