

# Risk Management in Food Supply Chains by Japanese Food Companies in Malaysia

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## Abstract

The complexities of food supply chain impose enormous challenges in the food processing industry. The unique features of the food industry such as the perishable nature of food products differentiate it from other sectors of the economy. This has intensified the need for an efficient supply chain. Similar to the risks arising in other supply chains, food supply chains can be universally affected by a number of different factors all at once and result in vulnerabilities and potential risks. By employing qualitative approach, this study, identified the major risks that Japanese food companies experienced in Malaysia. Additionally, strategies to cope with these risks were also examined. The findings of this study provide background information which may help to design appropriate supply chain strategies that can be adopted for circumstances suitable for the current challenges prevailing in Malaysia.

**Keyword:** Japanese food companies, supply chain, risk, mitigation, strategies

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## 1. INTRODUCTION

There are many forms of supply chain risk – internal to the company and external – that can impact a business's ability to maintain its operations and serve its customers. While different industries have varied practices in terms of mitigating risks, risk in the food supply chain is posited by many researchers as more complex than other industries. The special characteristics of products, production processes in food and actors in the chain itself have added to the complexity and dynamism of food supply chains. The quality deterioration (perishability) and quality variation of food products, production and distribution management in food supply chains is intrinsically dynamic to the food supply chain. This is compounded by uncertainty of the occurrence of natural disasters, climate change, epidemics and terrorist threats, which put the food supply chain in a particularly vulnerable position.

Given the complexities in risks to the food supply chain, its efficient and good integration is mandatory for food processing companies in Malaysia because the food and beverages industry is one of the most important sectors in the country's manufacturing industry. To date, Malaysia has experienced a persistent food trade imbalance as the demand for food items has risen faster than their supply. The industry is dominated by small and medium-sized enterprises which has resulted in the local food processing sector not being able to cater for rising demand. In helping Malaysia become more self-sufficient in its food requirements, risk mitigation in the food supply chain is important. Given that Japan is a supply chain superpower and for years has been an important trading partner for Malaysia and contributes capital, technology and management expertise to it, its supply chain management practices need to be closely studied. The aim of this paper is to identify the major risks and mitigation practices that Japanese food companies experience in Malaysia.

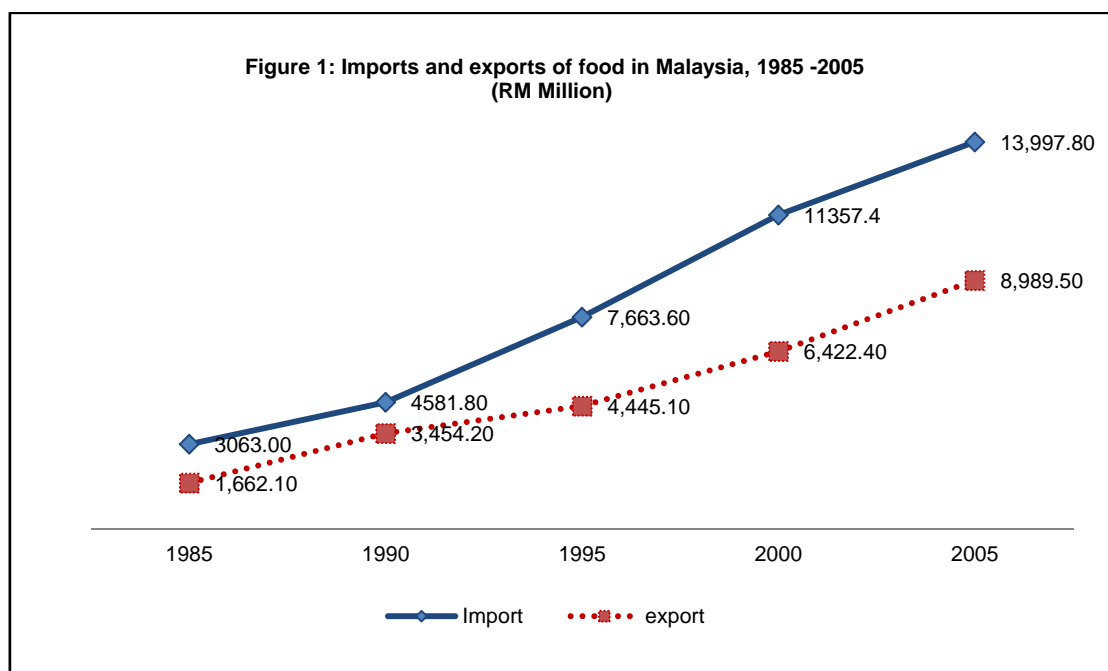
The paper is organized as follows. The next section provides briefly an overview of the food industry in Malaysia. The following section provides a brief review of the literature on food supply chain and risk mitigation. The research methodology employed is then described. Finally, the results of this study are presented and discussed with reference to risks and mitigation in food supply chain as practiced by Japanese food companies operating in Malaysia

## 2. AN OVERVIEW OF THE FOOD INDUSTRY IN MALAYSIA AND JAPANESE–MALAYSIA TRADE LINKAGES IN BRIEF

The food-processing sector is one of the backbones of the Malaysian economy, accounting for about 10% of Malaysia's manufacturing output (MIDA 2012). Total processed food contributed about RM14.2 billion in 2013, and food products were exported to more than 200 countries. Major export destinations were Singapore, Indonesia, the USA, Thailand and the Republic of China. Although exports have doubled over the few past decades, at this stage Malaysia continues to be a net importer of food products with annual imports of more than RM36 billion in 2012 (MIDA 2015). In fact, Malaysia has experienced this situation for at least three decades (as in Figure 1). Although local production of food rose to approximately 4.2% per annum, the

increment has not been able to match domestic demand and consequently resulted in rising imports especially during 1990–1995 (MITI 2006).

The food trade imbalance is associated with the presence of many small medium-sized enterprises (SMEs) facing numerous challenges that undermine their production capacity. Malaysian food processing is dominated by SMEs that make up more than 96% of the industry (MIDA 2012). Out of 37,861 SMEs in the manufacturing sector, around 6000 SMEs are involved in the processing and manufacturing of food and beverage products – making it the manufacturing subsector with the second largest concentration of SMEs (Wahab 2014). These SMEs are experiencing several problems such as obsolete technologies, insufficient and sub-standard quality of raw materials, low product innovation and no research activity at the factory level (see Senik 2010). The small-scale nature of operation has resulted in SMEs being inefficient in producing consistent volumes of output. Due to these problems the local food processing sector is not able to cater for rising demand and this has resulted in a negative trade balance for edible products and preparations (ETP 2010).



Sources: Ministry of International Trade And Industry Report, various years

**Figure 1: Imports and exports of food in Malaysia 1985-2005 (in RM million)**

Realizing the important contribution of the food industry to the Malaysian economy, the government wanted to see growth in the local food-processing sector, especially through the utilization of local raw materials. Responding to the inability of the Malaysian food processing sector to make products efficiently, Malaysia's government has continually encouraged supply chain integration in business operations. This was spelled out in the Third Industrial Master Plan (2006–2020) where the main objectives are: firstly, to improve the country's global competitiveness; and secondly, position Malaysia as a prime food producer and trader in Asia (MITI 2006). Therefore, food processing companies in Malaysia should find ways to gain better control over production, trade and distribution of their food products. Coordinating the business processes and working closely with the chain members would help to preserve the quality of food products. Apparently, good integration in the supply chain is mandatory for food processing companies in Malaysia.

## 2.1 Japanese – Malaysia Trade Linkages In Brief

As registered by gross domestic product (GDP) growth share Malaysia has transformed its economy from an agriculture-based to a manufacturing driven one. The agriculture sector's share in gross GDP declined from 22.89% in 1980 to 8.49% in 2004, while the contribution of the industrial sector grew from 38.5% in 1980 to 44.5% in 2002 (Department of Statistics Malaysia 2004). Following this transformation, Japan among other countries such as Singapore and the United States helped in the economic development of Malaysia. Instead of being Malaysia's major trading partner, Japan now represents an important source of foreign direct investment (MITI 2013).

During the early stages of Malaysia's economic development, the relationship between Japan and Malaysia went beyond the usual trade linkages. Considering the Japan–Malaysian affiliation, reference must be made to The Look East Policy and Malaysia's New Economic Policy (NEP) (1971-1990). While the Look East Policy sought to have Malaysians emulate the Japanese work ethic and business management techniques and

to acquire Japanese expertise and capital through aid, investment and trade cooperation (Som 2012), Japanese foreign direct investment was a key ingredient in the success of Malaysia's New Economic Policy (NEP) (1971-1990)(Smith 2003). Japanese investment provided the required capital, technology and management expertise for the rapid-oriented industrialization policy which was central to these reforms. As a result, Japanese investment in Malaysia, based on paid up capital, increased from US\$32.6 million in 1980 to US\$69.1 million in 1981 and then to US\$139.9 million in 1982 (which by then constituted 26.5% in total foreign direct investment in Malaysia) (Sing 1999). Continuing the trends that began in the 1980s, Japan continued to be the major investors in Malaysia throughout the 1990s. Since then, Japan remained a major source of foreign investment. In 2013 Japan, the United States, South Korea, Singapore and China jointly accounted for 75.1% of total foreign investments approved during the period (MITI 2013).

Concerning Japanese investment in the food industries in Malaysia, there are 18 Japanese companies Japanese food and beverage companies representing 2.5% of total Japanese manufacturing companies in the country (see Table 1). While the number of Japanese companies that have been active in the food and beverage production industry is still fairly small, the food sector showed encouraging developments as the number of Japanese companies operating in this field rose to 20 with the establishment of another Japanese company in Malaysia (Akhir et al. 2012).

Table 1: Japanese Related Companies (Manufacturing) in Malaysia(as at 4 August 2011)

<b>Manufacturers</b>	<b>Total</b>
Food & Beverage	18
Textile & Textile Products	16
Wood & Wooden Products	26
Petroleum & Chemical Products	89
Steel & Non Ferrous Mtl. Products	76
Machinery	25
Electronic & Electrical Products	273
Transport Mach. & Parts	61
Other Manufacturing	146
<b>Total Manufacturing companies</b>	<b>730</b>

Source: JETRO's website as at 28 June 2016

### 3. LITERATURE REVIEW

Supply chain management is defined as the integration of key business processes from end user through original suppliers providing products, services, and information that add value for customers and other stakeholders (Lambert et al. 1998, 1). The primary objective of a supply chain is to create value in terms of quality, cost, speed and flexibility to the end customers as well as companies in the chain (Chow et al. 2008; Walters and Lancaster 1999; Wisner et al. 2005). In addition, integrated supply chain management will enhance the ability to design products faster (Ajmera and Cook 2009), lead to reduced costs (Management Accounting Committee 1999), stock-outs and lead-time (Talib et al. 2011), improvements in service effectiveness and cost efficiency (Richey et al. 2010) and better forecasting accuracy and reduced cash-to-cash cycle time (Katunzi 2011).

While the supply chain provides many benefits to a business, accomplishing these advantages is not an easy task. Various risks may arise along the chain which can be classified in two broad categories (Kleindorfer and Saad 2005). Firstly, risks may emerge from the problems of coordinating supply and demand. A failure of any one element in a supply chain potentially causes disruptions for all partnering companies upstream and downstream (Yang and Yang 2010). Secondly, risks can arise from disruptions to normal activities which may be due to natural disasters, strikes and economic disruptions, or deliberate acts of sabotage, including terrorists.

Since different risks arise in any kind of supply chain, most of the literature finds that the supply chain management of food produce is more complex than other industries. The special characteristics of products, production processes in food and actors in the chain itself have added to the complexity and dynamism of food supply chains. The quality deterioration (perishability) and quality variation of food products, production and distribution management in food supply chains is intrinsically dynamic in the food supply chain (Grunow and Vorst 2010). Instead of quality of agriculture depending on climate conditions (Salin 1998), the very short shelf life of food produce (Negi and Anand 2015) and characteristics of (fresh) food products change over time has

important implications for the management of processes in the supply chain (Linnemann et al. 2006). Regardless whether the supply chain is for fresh agricultural products or processed food products, Vorst (2000) stressed that both types of chain realise that original good quality products can easily deteriorate because of an inconsiderate action of another actor. This means food safety and high-quality products are not the sole responsibility of individual organizations, but of the entire food supply chain. Different actors in the food chain as well as various consumers and consumer groups have different perspectives on food product attributes, posing extra challenges to the proper and logical alignment of processes in the chain (Linnemann et al. 2006).

The complexity of the food supply chain has attracted much worldwide interest in terms of its management. By focusing on the palm oil industry in Malaysia, Omain et al. (2010) identify the criteria of supply chain practices for that particular industry. From a survey covering 23 food processing firms in Tanzania, Ruteri and Xu (2009) concluded that food processors in the country should not operate independently if they do not have a strong relationship with their downstream partners. In managing the food supply chain in South India, Govindan and Panicker (2012) concluded that investment in good communication infrastructure and supplier selection and evaluation is important when handling food supply chain matters. CIPS (2008) found that the retail food and drink supply chains in England should recognize that many relevant industry sectors are diverse in their practices and knowing this should lead to a better risk management in purchasing and supply.

In managing upstream risks in China's food supply chain, Marterer (2015) has recommended five methods for corporations to adhere to. These are: (i) be thoroughly familiar with the entire production processes; (ii) invest in vertical integration and consolidate supplies; (iii) creative win-win supplier relationships; (iv) invest in design and effective monitoring and verification programand; and (v) strive for effective traceability and transparency. Referring to Indonesia, Aji (2010) suggested that supply chain management may improve the performance of rice supply chains by establishing the competitive advantage of firms within the chain (including farmers), through higher levels of co-ordination and value creation among chain members. By focusing on SMEs in Central America, Chavez and Seow (2012) have proposed the six Ts (traceability, transparency, testability, time, trust and training) as the risk management drivers to evaluate food quality risk in the global supply chain. In their recent study, Anand (2015) recommended that taxation, linkages with suppliers, and market information are among the critical factors to be considered in managing the food supply chain in India.

Regarding the risks in the food supply chain, the discussion in the literature above has revealed that different countries have varied practices in mitigating risks. In fact, there is evidence suggesting that different industries work in different ways because they employ varied operations and techniques are (Li et al. 2006; Mollenkopf and Dapiran 2005; see Jharkharia and Shankar 2006; see Chow et al. 2008). This is due to the fact that organization, management style (Halldórsson et al. 2008) and business environment (Jharkharia and Shankar 2006) differ from one place and industry to another. Since different risks affect supply chain processes in different forms, a focus on specific constructs that suit a particular country is required. For this reason the present study intends to contribute to deepening our understanding of managing risks in the food supply chain in Malaysia.

#### 4. METHODOLOGY

This research employs a constructivist ontology using qualitative methodology. Following Leung (1999) constructivism attempts to investigate the roots of social phenomena, each investigation being unique and its findings not able to generalize to another similar phenomenon. Brand (2009) emphasizes the value of qualitative methodology in obtaining a better understanding of the "how" and "why" of respondents' perceptions which cannot be elicited easily from large-scale questionnaires. This method allows researchers to explore an issue in-depth rather than with an emphasis on the breadth (Daniels and Cannice 2004). Furthermore, the research design chosen is in line with literature findings where various countries have different practices for overcoming the complex and innumerable risks characterizing the food supply chain. In addition to primary data, this study also considered secondary data obtained mainly from government sources such as JETRO, Ministry of International Trade and Industry (MITI) and literature from other sources.

Semi-structured interviews forms (guides) were designed after an extensive literature review on many aspects risks in the food supply chain around the globe. The guide essentially captures the risks involved in the food supply chain that food companies experience and the management practices they implement to mitigate such problems. Hereinafter, the semi-structured interview guide was directed to two expert persons based on their experience in supply chain integration in Malaysia for the purpose of content validity. They are an academic from a Malaysian public university and someone who works in the industry. The experts were requested to uncover any flaws in the survey form design and comment on the suitability and clarity of the questions. Feedback from the reviewing process was incorporated into a revised survey form. This validity procedure is considered sufficient to establish the survey's clarity and reliability. According to Stenbacka (2001) the concept of reliability is irrelevant when judging the quality of qualitative research. If a qualitative study is discussed with reliability as a criterion, the outcome is that a study is substandard. Lincoln and Guba (1985) stated that demonstrating validity in a qualitative approach is sufficient to establish the study's reliability.

A total of ten (10) Japanese food companies, representing 56% of those listed in Japan External Trade Organizations (JETRO) were involved in this analysis. There are currently 18 Japanese food and beverage manufacturers operating in Malaysia (JETRO 2011). Twenty (20) senior or middle managers with direct responsibility for supply chain management logistics in these businesses were preferred for interview following the advice of Chow et al. (2008). To document the issues concerning supply chain practices, perceptions originating from middle-line managers are important because they deal directly with supply chain processes and network structures, and the technical/behavioral components of management systems (Chow et al. 2008). The number of respondents is deemed appropriate because there are enough here who are considered to be experts in the field (Glesne, 1999). Williams and Webb (1994) and Zolingen and Klaassen (2003) state that there is no precise mechanism for identifying the ideal number of individuals or groups for inclusion in any individual study. It has been suggested that the size of the participating panel may vary according to the topic being covered, the nature of different viewpoints included, and the time and resources available.

All interviews were taped and transcribed for analysis. Following standard practice for qualitative data analysis, the data were systematically analyzed by inductively developing and iteratively refining a coding scheme.

## 5. FINDINGS

The literature concludes that supply chain management incorporates a wide range of inherent risks and opportunities. These risks and opportunities apply to activities within a company's structures and procedures, as well as externally, for example the suppliers and customers. In other words, these risks and opportunities can affect the entire chain. However, supply chain risks affect all industries in different ways. In case of Japanese food companies operating in Malaysia, there are five major risks that are most likely negatively affect these organizations' operations: production, price purchase, *halal*<sup>1</sup> requirement, demand and procurement. Combining the data derived from managers in Japanese food companies in Malaysia, has provided some interesting and useful insights into how Japanese food companies cope with these risks (see Table 2).

Table 2 Summary of various risks and mitigation strategies implemented by Japanese food companies in Malaysia

Types of risks	Mitigation practices
<b>Production risks</b> Machine breakdown Shortage of production operators Limited storage space Maintaining product quality of packaging	<b>Japanese management style</b> Regular maintenance schedule On-the-job training Multi-skilling Just in time (JiT) production Good management practices (5S, JiT, <i>gemba</i> )
<b>Purchase price risks</b> Price volatility Foreign exchange fluctuation	<b>Purchase price strategy</b> Price lock agreement Lock quantity ordered Official contract with suppliers Close relationship with suppliers
<b>Halal compliance risks</b> Meet halal standard (JAKIM)	<b>Uphold quality standard</b> Close relationship with JAKIM Meet quality standard (ISO 9000, ASQUA)
<b>Demand risks</b> Demand fluctuation	<b>Application of information technology (IT)</b> Accurate forecasting Frequent updates
<b>Procurement risks</b> Sustaining quality of raw materials	<b>Integration with suppliers</b> Procurement through loyal suppliers Share information with suppliers Timely payment to suppliers Yearly evaluation of suppliers' performance

### 5.1 Production risks

Generally, in any industry supply chain integration is often defined as a network consisting of a series of companies involved in the manufacturing and delivery of products or services to end customers. It includes managing supply and demand, sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, and delivery to the

<sup>1</sup>The concept of *halal* refers to producing goods and services in the manner approved by the Islamic religion's *Shariah* law.

customer (Lambert et al. 1998; see Cooper et al. 1997). While numerous risks exist in every stage of production carried out by each of the actors along the production chain, in general, most managers of Japanese food companies view that production risks are the most difficult uncertainties to deal with. Japanese food companies compete on their ability to provide a consistently high yield of blemish-free perishable goods along with superior on-time delivery performance at the lowest cost. For them, maintaining good quality of products is very essential and it is the top priority in their business operations to maintain longer in the industry.

Based on the interviews, this study identifies that several sources of production risks emanate from internal business operations. First, machine breakdown is the main risk to production since Japanese food companies are high-technology oriented. In capturing the inherent heterogeneity of the quality of product batches, Japanese food companies rely entirely on machines and trustworthy technology. Instead of resulting in an uneven quality or standard, machine breakdown has resulted in the problem of maintaining good quality packaging. Second, the scarcity of production operators has resulted in Japanese food companies in Malaysia depending largely on migrant workers for their burgeoning industrial expansion plans. The demand for foreign workers is not only associated with people's skills and capabilities but also with employees' education and training levels. The current workforce in the manufacturing firms mostly consists of people with minimum qualifications, and problems arise regarding language, communication and attitudes to learning new skills. Third, most managers working for Japanese food companies in Malaysia contend that inventory management is in a somewhat critical state because they have limited storage areas and facilities.

In managing production risks, the Japanese management styles were identified to be the critical success factor for overcoming risks. The employment of Just in Time (JIT) philosophy in the production process and planning helps to mitigate the limited storage space. Application of good manufacturing practices such as the 5S methodology (*seiri* (organization), *seiton* (neatness), *seiso* (cleaning), *seiketsu* (standardization) and *shitsuke* (discipline)) is now a daily routine for all workers. The 5S method helps to organize a work space in a clean, efficient and safe manner which could enhance productivity, visual management and ensure standardized operational practices. In addition, production operators are trained to master various skills so as they can apply them when needed. Japanese food companies also promote *gemba* or manufacturing floor activities as a way of encouraging worker participation and continuous improvement. The idea of having *gemba* is that the managers walk around the work area to gain first-hand insights into how food processes are conducted, or to understand the full impact of a problem that has occurred. In the meantime, managers in Japanese food companies emphasize that close relationships with suppliers are important in handling productions risks. This is because they provide much valuable guidance by referring to the availability of raw materials, and proper techniques to maintain raw materials' freshness and edibility.

## 5.2 Price purchase risks

The raw materials used by the Japanese food companies come from a mixture of local and overseas sources. While a small percentage of raw materials is obtained from overseas, these imported materials are considered core items for their production processes. The persistence in using overseas raw materials is due to issues of quality and scarcity. In certain cases, the quality of products obtained from the domestic market may not reflect or could be limited by geographical factors. Furthermore the insufficiency of local raw materials means that they have to be sourced from overseas. The importance of having raw materials to maintain the end product quality has resulted in Japanese food companies being exposed to purchase price risk. The interviews revealed two sources of purchase price risks. The first is the price volatility of raw materials. The nature of the food industry and industrial production depends on trade in raw materials such as minerals, agricultural and natural resources despite the fluctuations in supply that may occur. These sources' prices vary for many reasons such as yield variations, typically owing to weather, climate and policies in the countries that produce and export them. The second concerns the prices of imported or raw materials that are subject to foreign exchange rates. Because international purchasing always involves a series of purchases, companies, in certain cases usually buy the raw materials or goods in bulk, which requires larger monetary transactions. These transactions are exposed to greater risks in the form of currency fluctuations. Moreover, cross-border transactions result in complicated procedures and processes, which expose a company to many additional risks. Both sources of production risk may have serious implications for production costs which eventually put the companies in an uncompetitive profit margin position compared to their competitors.

The ill-effects of the purchase price risk is controlled through by using the price and quantity lock strategy. This strategy refers to the mutual understanding between the Japanese food and beverage companies and their suppliers regarding the quoted price when the orders for the raw materials are first made. Should there be drastic and/or adverse changes in the price of raw materials, suppliers may allow the Japanese companies a few months to adjust their production plans accordingly before implementing the new price. Alternatively, the suppliers may continue charging the first quoted price up to the maximum quantity that has been locked in or agreed to earlier. Although having an official contract specifying the quoted price is the best way to control this risk, most companies choose not to have it and believe that a long-term and close relationship with suppliers

enables them to benefit from the price and quantity lock strategy.

### 5.3 *Halal* compliance risks

As a Muslim country, Malaysia is very concerned about *halal* compliance in the making of food products. Through Malaysian Standard: *Halal* Food-Production, Preparation and Storage-General Guidelines, known as MS 1500:2004, the correct production, preparation, handling and storage methods of *halal* food were established (Janis 2004). Food producers operating in Malaysia are encouraged to apply for the *halal* certificate as it could improve their business and sense of integrity. *Halal* certification provides assurance to Muslim consumers that food products conform to *Shariah* (Islamic) law. As for non-Muslims, *halal* certification may reflect good quality because *halal* certified products must comply with good manufacturing practices (GMP) and good hygiene practices (GHP). In this regards, another main risk attached to the food supply chain is the need to meet the *halal* requirement.

Acknowledging the importance of this issue, upholding the standard set by JAKIM (Department of Islamic Development) as well as the other quality standard setters, for example ISO9000 and ASQUA, is vital for Japanese food and beverage companies. These companies must always ensure that the suppliers of raw materials will only supply *halal* goods or have *halal* confirmation certificates. Apart from following procedures documented in the Malaysian *Halal* Certification Manual, food companies frequently meet with JAKIM to for updates on current *halal* issues.

### 5.4 Demand risk

Demand risks are another major issue attached to the food supply chain that Japanese food companies have to deal with. The interviews found that two main drivers of this risk. The first stems from unpredictable changes in consumer demand that ultimately result in demand volatility. Managers in Japanese companies find that in the food industry, consumers regularly change their behaviour – new preferences and fads dominate many buying decisions. In this regard, retailers and consumers will not wait, opting instead to switch to products and manufacturers that do meet their needs. The second driver for demand risk is poor internal coordination and communication across functions. While delay in sharing information will result in an ineffective organization, overlap results in wastage and lost time, which has to be spent doubling efforts, materials and time to produce the same item twice.

As practiced by Japanese food companies, demand risks can be offset and managed through frequent updates and executing forecasting information processes accurately. To the extent that any forecast is inevitably inaccurate, inventory and sales databases for all relevant departments will be interconnected. Due to variability in the pattern of demand and supply, each raw material or product will be coded and indicate its batch number data, such as description of the item and its location in the store. Inflow and outflow activities of raw materials and finished goods are recorded in the computer system in order to facilitate tracking inventory levels, orders, sales and deliveries. With all the required data in hand, at the operational level the process team executes the forecasting and synchronization that was designed at the strategic level. Efficient monitoring of material flows (delivery and sales) and information flows (demand forecasts, production schedules and inventory level information) may prevent this risk from actually occurring.

At the same time the team liaises with the marketing functional division as well as the order filling and customer service management processes. These sources are close to the customers and provide critical information on sales projections and anticipated demand. This effective system will provide them with a guide for matching demand to supply. This can be translated into the required optimal level of raw materials that is consistent with their weekly, monthly and yearly manufacturing plan. All these updates and monitoring actions are carried out by utilizing an information technology (IT) support environment throughout the supply chain. Therefore, affected parties could react quickly to any disruptive incidents along the supply chain.

### 5.5 Procurement risks

One of the most important values that was identified as being practiced by Japanese food companies is to preserve food quality so that food products or processed food will always look and taste the same. Japanese food companies will try to retain as much as possible the ingredients used in processing food from the same suppliers. High quality food products can be produced only from high quality raw materials. Given that the food industry is heavily dependent on its suppliers, risk in procurement is one of the main dangers in the Japanese food supply chain. Supply delivery can be interrupted by many factors, including adverse weather, infrastructure issues, price increases or damage to a supplier location. Loss of even one dependable supplier can affect the quality of products, consistency and service of a food service provider and ultimately lead to a loss of income. Failure to deliver the required quality of raw materials by suppliers has resulted in Japanese food companies failing to comply with required processes to produce high quality end-products.

The dependence on suppliers in providing high quality of raw materials led the Japanese food companies in Malaysia to mitigate the procurement risks through trade relationships with suppliers in several ways. First, by

having procurement through loyal suppliers, Japanese food companies are able to receive the exact quantity and quality needs over the life of the contract. This is particularly true for long-term contracts where demand for the food products may be heavily tied to unforeseen market events. Second, working closely with raw materials suppliers is beneficial as it enables sharing of information on preserving the good quality storage of raw materials. In many cases, suppliers provide much valuable guidance with reference to proper techniques in maintaining raw materials' freshness and edibility. The information is valuable as the quality control of materials depends on many variables such as length of storage time, their disposition to spoilage, the possible presence of contaminants that could severely endanger health, their contribution to nutrition and the total sensory quality of the products, etc. Due to the perishable nature of raw materials, the microbiological quality of the raw materials needs to be strictly controlled. Thirdly, it is important to ensure payment to the suppliers in a timely manner. In fact, the management of payments to suppliers is relatively easy to undertake as there are only few loyal suppliers in the Japanese companies' food supply chain. Having a small number of suppliers helps the companies to concentrate on accountability, increase standardization, improve visibility and strengthen relationships. Fourthly and lastly, there is the issue of yearly evaluation of suppliers' performance. As viewed by managers in Japanese food companies, an evaluation is important for a continuous and smooth flow of supplies coupled with meeting the demanded quality of raw materials. As a result, the procurement department needs to be well integrated with the suppliers of raw materials because the quality of raw materials must be continuously evaluated and checked so that suppliers are doing what is expected of them.

## 6. CONCLUSION

While supply chain risk tends to paralyze most supply chains, the Japanese food and beverage companies in Malaysia have recognized the need to put strategies and capabilities in place to identify, prioritize, and manage risks and opportunities across their entire food supply chains. Since many risks exist in the chain, Japanese food companies in Malaysia prioritize several areas of risk that should be managed properly. The most important five risks that are most likely to compromise businesses are, in the following order, production risk, purchase price risk, *halal* compliance risk, demand risk and procurement risk.

Although Japan is now interacting and trading in a global context, the distinctiveness of its culture still persists, generating a unique social and business environment. Japanese management styles are present in the companies' activities and management practices in Malaysia, enabling them meet their ultimate objective of creating high quality products continuously. The Japanese food companies place a high priority on building long-term partnerships with their suppliers. Beyond the quality of the supplied goods and procurement needs, this relationship creates mutual information sharing which helps to preserve raw materials' safety, freshness and edibility. In the meantime, creating a win-win suppliers relationship and viewing suppliers as partners in helping to grow the business has benefited the Japanese food companies in reducing procurement risks. The verification of *halal* requirement that goes beyond 'the tick box' approach has resulted in the Japanese food companies benefiting from the advantages of good factory design. These include, for example, compliance with Malaysia's food hygiene standards, reduction in manufacturing costs and better profit margins. Furthermore, success in managing food supply chain risks is mainly based on the advantages of having information technology. Computerized systems make it possible to set up reorder systems for raw products that are interconnected with other business departments, making purchase and sales transaction decision-making timely, accurate, and complete.

Finally, the input is crucial as different supply chains operating in various countries do require different strategies for risk mitigation; hence a focus on specific constructs of strategies that suit a particular country is needed. While it is essential for local food companies to stay longer in the industry through the input they deliver or receive, foreign companies worldwide may benefit from the input when considering their investment in Malaysia's food industry.

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