The Role of Cluster Governance in the Process of Firm Internationalization:
Based on the Example of Two Malaysian Halal Industrial Parks[1]

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The concept of industrial clustering—that is, the importance of synergies between complementary economic activities gathered together in one place—has long been associated with an easier, faster process of internationalization for participating firms. But the question of how exactly—by which mechanisms—such industrial clustering helps firms internationalize remains unclear. To fully understand this relationship, the present article focuses on the process of *cluster governance*, and distinguishes between three different aspects, namely, the cluster composition, the internal network density, and the degree of knowledge sharing. By focusing on two major halal industrial clusters in Malaysia—namely, the Penang International Halal Hub and the Melacca Halal Hub—we shall see how the different aspects of the Malaysian model of industrial clustering facilitates the process of firm internationalization in the Halal industry. In order to analyze the internal network of the two halal parks under study, we use the quantitative methods derived from Bossomaier and Green (1999), based on data related to networks of business interactions. The conclusions of the present article will allow us to formulate useful insights for other halal industrial clusters seeking to internationalize their activities.

Keywords: halal industry, industrial parks, firm internationalization, cluster governance, network density, knowledge management

INTRODUCTION

The concept of industrial cluster was originally introduced by Michael Porter (1990) in the early 1990s and the impact of his theoretical model, in both areas of academics and public policies, was impressive. Porter's concept itself was largely inspired by the classical work of Alfred Marshall (1890), and his ideas were almost immediately adopted and studied by academic circles on regional economic development, economic geography, and other related disciplines (Malmberg, Bathelt, & Maskell, 2004).

The concept of clustering is based on the importance of synergies between complementary economic activities gathered together in one place. Porter defined clusters as: "A group of industries and organizations that are linked together by buying and selling relationships, or who share the same infrastructure, customers or skills base and whose linkages enhance competitive advantage" (1990, p. 78). Absolutely central to the concept of clusters is their ability to build relationships and to aggregate the interests of individual firms and the overall needs of the cluster.

However, since the formulation of the original concept by Porter more than 20 years ago, the traditional notion of cluster as an autonomous center of production, incorporating a strong internal exchange of knowledge and little interaction with the outside world, is becoming less and less relevant. The growing internationalization of value chains greatly changed the internal functioning of clusters, forcing them to open their doors and increase their relationships with stakeholders outside of their region and country. Cluster managers more and more recognize opportunities related to the internationalization and openness of their activities; and attracting foreign knowledge, capital, technology, and international markets are increasingly becoming part of their objectives. As clusters benefit from this internationalization,

they also offer a platform which greatly facilitates the process of internationalization of their member firms, prompting them to make the transition to international markets (Javalgi, Griffith, & White, 2002).

Indeed, according to a large pool of literature, it is known and recognized that the internationalization process is fraught with risks and filled with uncertainty (Conconi, Sapir, & Zanardi, 2010). These barriers include, among others, a lack of funding mechanisms adapted to internationalization activities, a lack of information about the target markets, the inability to meet the administrative and bureaucratic requirements related to exports, and so forth. On this point, many empirical studies have produced a broad consensus to the effect that membership in a cluster tends to mitigate these barriers and facilitate the internationalization process. The cluster provides its member firms with an easier access to funding sources, partners, and information. By sharing the costs and risks through effective use of economies of scale, it is much easier to access target markets and to undertake export activities. This is the reason why the process of clustering is associated with a higher export intensity and greater flexibility and adaptability of firms seeking to reach foreign markets.

However, despite this beneficial relation, the question of how exactly—by which mechanisms—industrial clustering helps firms internationalize remains unclear. To fully understand this relationship, we must focus on the process of *cluster governance*, and distinguish between its different aspects. The concept of cluster governance is generally defined in the literature as the set of collective actions of institutional stakeholders (governments and affiliated bodies, large state-owned companies) aimed at supporting the creation, the development, and the efficient management of a given cluster in order to maintain its sustainable competitive advantage (Enright, 2000; Brown, Longworth,

Waldron, & Zhang, 2007). This is even more important for food processing industries, such as the halal food industry, where there is a particular dearth of research on the links between clustering and internationalization.

INDUSTRIAL CLUSTERING
IN THE HALAL FOOD INDUSTRY

The *halal* industry—translating from the Arabic as the industry of "what is allowed"—refers to the way we produce and deliver goods and services in a manner that is consistent with Islamic law, or sharia, thus avoiding the use of practices and products prohibited (*haram*) by the precepts of Islam. The concept of halal is most often associated with the food production and processing industry, and is known for the importance it gives to the verification and certification measures to ensure that products are not contaminated with non-halal materials or processes at all stages of production, which involves rigorous analytical techniques without which fraud would be more likely to occur.

The estimated total value of the growing global halal industry was around US $2.3 billion in 2012 and this amount is expected to increase consistently in the coming years, due to the increasing awareness of Muslim consumers concerning the importance of requiring halal-certified products (Husain, Ghani, Mohammad, & Mehad, 2012). This significant growth is nowhere more evident than in the Arab countries of the Persian Gulf: in order to meet their growing domestic demand, the six states of the Gulf Cooperation Council (GCC) have to import 90% of their annual grain needs and 60% of their meat products, representing a market of USD 35.3 billion in 2011.

Those who can capture a share of such market can thus benefit from a significant financial windfall. Currently, multinational agribusiness firms in Brazil, Australia, and New Zealand have secured the biggest share of world exports of meat and processed halal food products (Mohamed, 2015). But in recent years, several Asian regions and countries with a significant Muslim population have sought to enter this lucrative market by encouraging the development of their local halal production base. This is the case, among others, of Brunei Darussalam, Indonesia, Thailand, the Philippines, China and, more importantly so, Malaysia (Islam, 2011; Bohari, Hin, & Fuad., 2013).

In Malaysia, as in most other cases, the rise of the halal industry mostly takes the form of an industrial policy which is embodied in "halal industrial parks" of various sizes and importance. These halal industrial parks consist of one-stop platforms, serving all activities related to halal production, including inspection, certification, research, sampling and laboratory facilities, marketing, logistics, and so forth. Such parks are managed towards the realization of a common goal: to promote the internationalization of member firms, to increase exports, and attract petrodollars from the GCC countries. But while sharing a common objective, these new halal industrial clusters differ greatly in terms of their cluster governance, which in this article consists of their composition, the density of their internal network, and their degree of knowledge sharing. Respective results of these halal industrial parks in terms of their degree of internationalization also differ greatly, ranging from obvious failures to brilliant successes.

The main purpose of this article is to bring back the concept of *governance* into the heart of the analysis of these new halal industrial clusters, and to explicitly examine how different *modes of cluster governance* can affect their results, particularly with respect to their main objective, which is to promote the access of local companies to Arab and international markets. By focusing on two major halal industrial clusters in Malaysia—namely the Penang International Halal Hub and the Melacca Halal Hub—we shall see how the

different aspects of the Malaysian model of industrial clustering facilitates the process of firm internationalization. The conclusions of the present article will allow us to formulate useful insights for other halal industrial clusters seeking to internationalize their activities. In this context, this article aims to contribute to the academic debate on the relation between firm internationalization and industrial clustering, focusing on the specificities of the halal food industry.

INDUSTRIAL CLUSTER GOVERNANCE AND FIRM INTERNATIONALIZATION

Based on existing theoretical models, we have identified for the purpose of this article three aspects of cluster governance which affect in a crucial way the internationalization of cluster member firms. Firstly, cluster governance can have a huge influence on the internal structure of a given cluster, most notably its *composition*. According to the resource-based view of firm internationalization, the firm is a bundle of specific and heterogeneous resources. It is said that the company's ability to achieve and maintain profitable market positions depends on its ability to gain and defend advantageous positions based on its access to relevant internal and external resources (Conner, 1991). This model thus implies that firm internationalization is the result of mobilizing, accumulating, and developing critical resource stocks. In this context, the role of the industrial cluster is obvious, since firms that are part of that same cluster can benefit and share resources with other member firms: thus, by pooling important and rare resources, industrial clustering can ease firm internationalization.

Secondly, the network theory of firm internationalization emphasizes the impact of inter-organizational and interpersonal relationships, both informal and formal, upon the internationalization of firms (Coviello &

Munro, 1997). Such networks and relationships are important because they enable firms to link activities and tie resources together. Several studies have identified that a good and extended social network is considered an effective way to help companies gain access to a foreign market more quickly and cost-effectively (Zou & Liu, 2007). According to this approach, industrial clusters can thus accelerate internationalization by promoting this system of relationships between member firms—including customers, suppliers, producers, competitors, and private and public support agencies (Coviello & Munro, 1997).

The third and final theoretical model is related to the learning process and knowledge exchange of member firms. It is understood that in an atmosphere of trust (for example, in a high-density industrial cluster), continuous and repeated interactions between firms enhance information sharing and knowledge spillovers, thus supporting internationalization and innovation processes (Cooke, 2005). Many studies show that companies can learn from other firms' achievements and experiences and acquire their knowledge without having to go through the same process of "trial and error" (Lane & Lubatkin, 1998). By enhancing and increasing knowledge flows and sharing, industrial cluster can raise access to external and internal knowledge resources, thus promoting firm internationalization.

Of course, the successful internationalization of a firm depends not only on these three mechanisms of cluster governance. Many external factors also play a fundamental role, such as the international business environment, situation in the target market, the international and national trade policies, and so forth. However, all other things being equal, we argue that a good cluster governance is a major asset that can help firms overcome obstacles that are inherent in a transition to overseas markets. Thus, by analyzing the cluster governance in

two Malaysian industrial halal parks, in terms of composition, networks, and knowledge sharing, this article aims to better understand how exactly cluster governance can promote a smooth and faster access to international markets.

CURRENT SITUATION OF HALAL INDUSTRIAL PARKS IN MALAYSIAN

Without any doubt, Malaysia is widely seen and recognized as the world's most successful example of halal industry development, where a single halal standard is applied throughout the country and this model has been regarded as the basis for the development of halal food industries in many countries. The development of the halal industry in Malaysia started 30 years ago. Halal inspections were then carried out by a private company appointed by the federal government. A public institution—JAKIM— was later established and all halal certification and auditing activities came under the control of the Malaysian federal state, with local states being responsible for the definition of the Islamic law. From 1996, the development of halal industry was integrated into main industrial and agricultural government plans.[2] In May 2008, a *Halal Industry Development Master Plan* (Mohamed, 2015) was adopted, which aims to drive halal as a new source of economic growth. Whereas before government efforts in the halal industry were exclusively focused on halal certification and standards, this *Master Plan* introduced a major change towards high-value added services, including halal production, halal services, and halal trade.

As such, Halal industrial parks represent one of the pillars of this Malaysian halal industry development master plan. Such parks consist of communities of manufacturing and service companies, supported by public and private organizations offering research, logistics, training, and other various services. Essentially,

it is a center of industrial excellence, equipped with the best industrial facilities in order to provide the integrated approach needed to maintain and enforce the halal requirements and other food safety criteria.

The purpose of the Malaysian halal industrial parks is to improve the economic performance of member companies. This includes boosting the performance on both domestic and international markets, increasing awareness and enforcement of various certifications and standards, increasing product innovation, and so on. To this end, Malaysian halal industrial park management agencies provide a variety of services to member companies, including various incentives, such as full income tax exemption on capital expenditure for a period of five years and exemptions from import duties and sales tax on equipment used for the manufacturers of halal products. As a result of these efforts, such parks have benefited from over RM 6 billion in investment from 17 multinational companies and over 80 small and medium companies. We have selected for the purpose of this study two halal industrial parks, the Penang International Halal Hub and the Malacca Halal Hub. Such parks were chosen firstly based on the representative character: in terms of the range of their products, their founding date, their internal functioning and their firms' internalization—they mostly correspond to the larger tendencies we can observe in the national Malaysian halal food industry.

The Penang International Halal Hub (PIHH) is situated along the Straits of Malacca, in the historical city of Penang, which has been a traditional successful trading hub for northern peninsular Malaysia, leveraging on its geography, strong infrastructure, low transaction costs, and political openness. Coupled with its present agglomeration of manufacturing and services expertise, the PIHH promotes high value-added, knowledge intensive, and advanced technology industries over an area of 100 acres. This is motivated by the strong foothold of the region

Figure 1. *Malaysian halal industrial parks location map.*

in the manufacturing and halal food processing industries, Penang being a major exporter of processed (frozen and canned) seafood.

Halal Penang, a state-owned agency, was set up in 2008 to manage the Penang International Halal Hub and support Malaysia's vision to become the world halal hub. Halal Penang is focused on promoting, enhancing, and driving the growth of the halal cluster and help make up a holistic and integrated halal supply chain. Positive outcomes of these efforts are already visible, the local halal industry has grown from a handful of 55 companies in 2008 to the 565 today.

The Malacca Halal Hub (MHH) is located in the third smallest state in Malaysia, south of the Malay Peninsula, also bordering the Strait of Malacca. The Malacca Halal Hub was established in 2010, in Serkam village, about 17 kilometers south of the city of Malacca itself. The park covers a total area of about 135 acres, and an expansion of the area is currently under way (as of 2014). In contrast to the Penang International Halal Hub, the Malacca Halal Hub mostly targets and caters to the needs of small and medium-sized companies seeking to expand their activities in Malaysia and abroad.

Like other halal industrial parks in Malaysia, the Malacca Halal Hub is owned by the Malacca state government and managed by *Perbadanan Kemajuan Negeri Malacca* (Malacca State Development Corporation). MHH provides businessmen and firms with practical guidance and training to develop their activities, so that member firms of the halal park can be in strict compliance with local and international Islamic and halal norms and requirements.

When examining the products of both halal parks under study in this article, we can see that firms in both industrial parks are mainly specialized in producing various food products, of which four areas of expertise can be identified: various meat and processed seafood products (22% of the production of both parks), bread and pastries (22%), sauces and cooking oil (20%), and herbal products and spices (15%).

If both halal industrial parks are similar in terms of products, they differ widely in terms of their degree of internationalization. The Penang International Halal Hub has a 100% rate of internationalization, with all member firms participating one way or another in international activities. This is not surprising,

Table 1. *Degree of Internationalization of MHH and PIHH Industrial Parks*

Cluster	Number of respondent firms	Degree of internationalization
Penang International Halal Hub	15	100%
Malacca Halal Hub	21	44%

since international experience is a prerequisite condition for entering the Penang Halal Hub. On the other side, the Malacca Halal Hub has a relatively low degree of internationalization: only 44% of companies have participated in international activities.

Considering data related to target market, we can see an interesting trend: the vast majority of firms in both industrial parks target neighboring markets for exports. The main export markets are Southeast Asia—including Indonesia, Thailand, the Philippines, and Brunei—(44%) and Singapore (14%).[3] The next largest market is China (18%), Middle East (11%), and finally Europe (9%). In this sense, both industrial parks under study here are very representative of the trends in the overall Malaysian national halal industry, which is that the most important market is not the Middle East, but neighbouring South Asian countries and China (even though the increasing demand in the Middle East is widely seen as a critical factor for the development of the worldwide halal industry).

As we can see from this preliminary presentation, these clusters provide a very promising field of research to investigate different cluster governance models and compare their effects. Both clusters have emphasized halal food processing industry and face similar challenges in their development goals (mainly penetrating neighboring markets). Meanwhile, their results in terms of their degree of internationalization is widely different. Based on a thorough comparison of both clusters in terms of their composition, network density, and knowledge sharing, we will be able

to identify best practices and formulate policy recommendations.

CLUSTER GOVERNANCE AND CLUSTER COMPOSITION

Cluster composition is the first role of cluster governance. It refers to deciding which stakeholders can participate in an industrial cluster, as well as the extent to which they can participate. In Malaysia, state agencies responsible for cluster governance have the power to choose the cluster members and to promote or hinder the participation of businesses, academic institutions, public agencies, financial institutions, certification bodies, and other stakeholders. Since each cluster member brings with him its own unique set of resources, improving the level of participation of a specific member means increasing the share of its specific resources inside the cluster.

In order to measure and compare this first aspect of cluster governance, this article uses a cluster measurement tool developed by the European Union Task Force Group (ECA) (TACTICS Reflection Group, 2010). This tool allows us to evaluate resource diversity of a given cluster on the basis cluster member categories, which can be composed of small and medium enterprises, large enterprises, public sector agencies, financial institutions, and research institutions. In order to fully take into account the specificities of the halal industry, we also add another category of actors: certification bodies. Such certification bodies include all accreditation and certification agencies, such as food safety

certification organization, halal certification bodies, management quality certification bodies, and so on. Based on data collected among cluster firms, asking them to evaluate the presence/ absence of such cluster member categories, we can compare the composition of the two clusters selected.

First, in the Malacca Halal Hub, which, as we saw, is the industrial park with a relatively low degree of internationalization (44%), cluster member respondents have identified the strong and weak points of their cluster. Based on their data, we can roughly understand the relative strength of each cluster members: small and medium enterprises, public agencies, and research institutions are by far the strongest members of the Malacca Halal Hub. Then come the logistics infrastructure agencies, the financial institutions, with a moderate, but still important, presence. Finally, the main weakness is the absence of large and multinational companies.

Data from the Penang International Halal Hub, which has a perfect level of internationalization (100%), give a very different picture of the cluster composition. Based on evaluation of the cluster members, it is apparent that not only the relative strength of each cluster members is stronger,

but the overall composition is more diverse and complete: all categories of cluster members have a relatively strong presence in the cluster, with research institutions having a near perfect score. The weakest point (weakest not in absolute terms, but in comparison with others cluster members in the PIHH) appears to be financial institutions.

CLUSTER GOVERNANCE AND NETWORK DENSITY

The internal network is the second aspect of cluster governance, referring to the way the cluster can affect the density and structure of linkages and cooperative relationships between members of a same cluster. By changing the network structure, cluster governance can increase or decrease the density of networks and relationships between the different cluster members, and thus encourage exchanges and strengthen confidence inside the cluster.

In order to analyze the internal network of the two halal parks under study here, we use the quantitative methods derived from Bossomaier and Green (1999), based on data related to networks of business interactions. Such
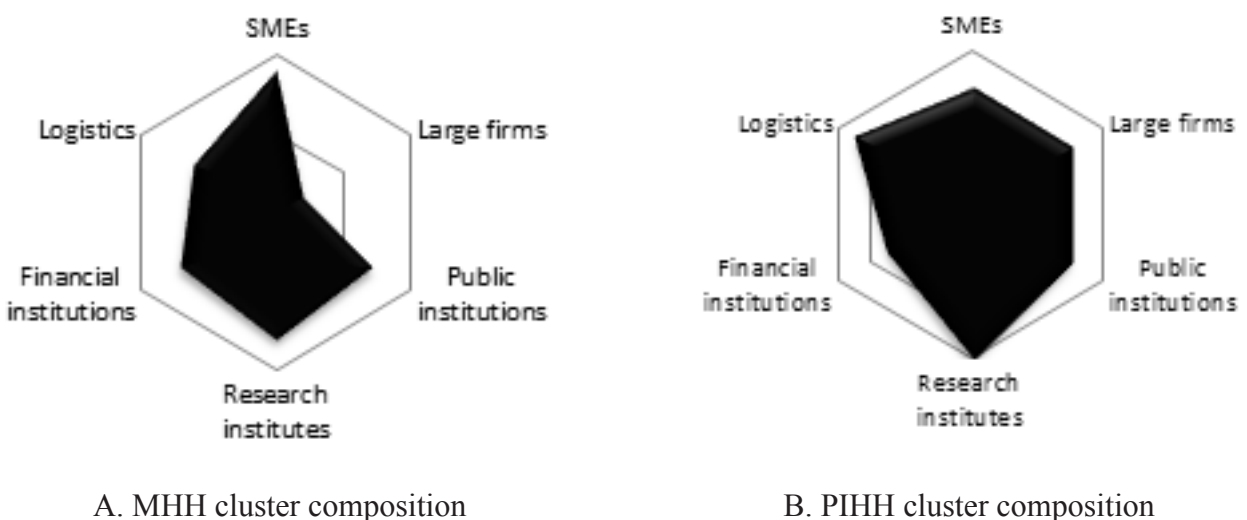

A. MHH cluster composition   B. PIHH cluster composition

Figure 2. *Cluster composition of MHH and PIHH industrial parks.*

methodology is useful for analyzing internal relations and interactions inside networks, and provide insights about the dynamics at play (which might not be visible otherwise). Such dynamics can then be related to the characteristics of the networks under study, such as degree of international activities, degree of innovation, and so forth. Here, "business interaction" refers to any linkage between enterprises formed due to related projects, trade links, coordination relationships, vendor links, machine or service sharing relationships, and so on. It is necessary to note that in order to compare networks and clusters of the different size, we rely on a standardized degree of centrality.

The first coefficient we use is the *network density coefficient*. Early theory identifies the degree of interrelatedness of a given cluster as a critical condition of self-organization. A higher network density coefficient (close to 1) is related to more "dense" internal linkages, whereas a low density can help us identify which industrial cluster are more "sparse." Cluster contact density ε (sometimes called *linkage density*) is the ratio of the maximum number of possible linkages and of the actual number of linkages in a given cluster, based on self-reported data of cluster members. Thus, for clusters containing N- cluster members, the largest possible number of linkages is N(N −1)/2 (we assume members cannot establish contact with themselves), so if the cluster contains E linkages, contact density ε is given by the following formula (i) :

$$\varepsilon = \frac{2E}{N(N-1)}.$$

i.

The second coefficient we use is the *graph clustering coefficient*. A network is divided into different modules, which are not necessarily equally linked to other modules. More precisely, a module is group of actors which are internally highly connected, but more or less connected to the rest of the cluster. In fact, many natural and

man-made networks possess a modular structure. Thus, a high graph clustering coefficient (close to 1) indicates a strong cluster linkage density and facilitate contact between cluster members, whereas a low graph clustering coefficient indicates that each member are much more dependent on each other. With the above definition, the modular coefficient cluster Q of a cluster is given by the following formula (ii):

$$Q = \sum_{i=1}^{p} (e_{ii} - a_i^2).$$

ii.

The third and final coefficient we use is the *group betweenness centrality coefficient,* an indicator of the the proportion of the centrality of cluster members in a given network. A cluster member with a high betweenness centrality coefficient indicates a large influence on the transfer of information/resources through the network, under the assumption that such transfer follows the shortest paths. According to this, a high *group betweenness centrality* (close to 1) implies that one or a few members of the cluster are present in almost all linkages between all the remaining cluster members (this is exactly the situation if all transfer of information/resources have to go through one cluster member). On the contrary, a low *group betweenness centrality* (close to 0) means that all the nodes have exactly the same betweenness index.

As we can see in Table 2, the results of the three coefficients are mostly in line with expectations. The halal industrial cluster with the highest degree of internationalization, the Penang International Halal Hub, is also the one with the highest Network density coefficient (0.304 vs 0.147), the highest Graph clustering coefficient (0.513 vs 0.14) and the lowest Group betweenness centrality coefficient (0.465 vs 0.936). The graphic representation of both cluster network structures illustrate such differences and confirm previous coefficient results (see Figure 3). Whereas the Malacca Halal Hub is structured

Table 2. *MHH and PIHH Coefficient Results*

Cluster	Network density coefficient	Graph clustering coefficient	Group betweenness centrality coefficient
Penang International Halal Hub	0.304	0.513	0.465
Malacca Halal Hub	0.147	0.14	0.936

A. MHH network structure   B. PIHH network structure
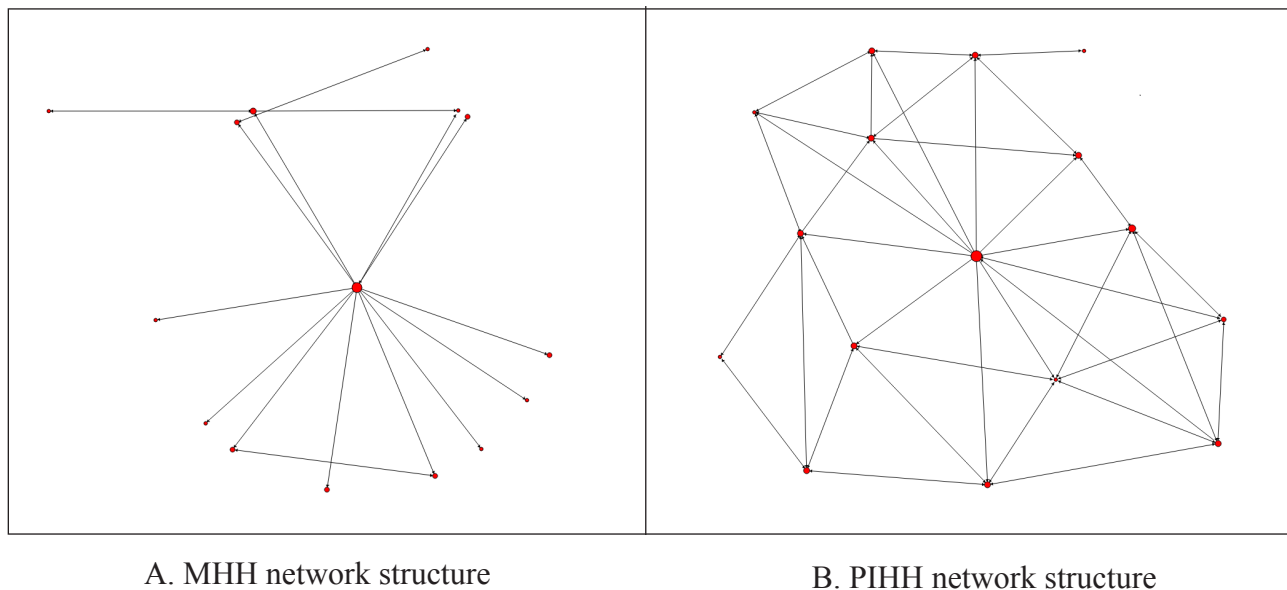
Figure 3. *Network structure of MHH and PIHH industrial parks.*

in a star-like shape, with a central cluster member (here, the cluster management agency) acting as a very central node connecting all other members, the Penang International Halal Hub appears to have a much higher density, a more "horizontal" structure with plenty of linkages and less dependency.

CLUSTER GOVERNANCE AND KNOWLEDGE MANAGEMENT

Finally, the third aspect of cluster governance is related to knowledge management, referring to the way cluster governance can promote effective knowledge sharing between firms and public institutions inside a cluster. Knowledge sharing is an inevitable part of firm internationalization. Knowledge resources include information related to foreign markets, foreign consumer demand, the best path to enter foreign markets, and so on. If lacking such "insider knowledge" about a foreign market, firms will find it difficult to seize opportunities abroad and might delay their entrance in the international arena. For a halal food industry cluster, this knowledge management is even more important because it also involves knowledge concerning requirements of foreign certification bodies in terms of halal, health, and food safety certifications.

Table 3. *Knowledge Management Maturity Index of MHH and PIHH Industrial Parks*

	1	2	3	4	5
Internal knowledge management culture	0.8			3.1	
Absorptive capacity of external knowledge			2.9		4.8
Knowledge management strategy of the cluster			3.5	4.1	

⬤ : Melaka Halal Hub   ▪ : Penang International Halal Hub

Due to the difficulty to quantify the nature of knowledge sharing, knowledge management tools are mostly qualitative. We use here a modified version of the most recognized measurement tool, Klimko's (2001) *knowledge management maturity index*. Knowledge sharing maturity is thus measured by the extent of the use of main knowledge sharing and management principles, from 1 (beginner) to 5 (mature), according to three principles categories: internal knowledge management culture of the cluster members, absorptive capacity of external knowledge of the cluster members, and knowledge management strategy of the cluster agency. Based on self-evaluation method, cluster members have evaluated their relative maturity, and the results are summarized in Table 3.

As we can see, members of the Penang International Halal Hub have rated (on all three categories) the maturity of their cluster systematically higher than the members of the Malacca Halal Hub. An example of how a successful knowledge sharing policy can be central for a smooth and sustained firm internationalization is the case of JEFI Aquatech Resources Sdn Bhd (JEFI). Being a large firm part of PIHH, JEFI has signed a memorandum of agreement with BiotechCorp (a research institution outside of the cluster) and the Malaysian

Agricultural Research and Development Institute, to develop common research and development projects in aquaculture. Such strong public-private knowledge sharing and inside-outside cluster cooperation are representative of the high maturity of the Penang halal cluster in terms of knowledge management policy. Based on interviews with cluster members in both public and private spheres, such efforts have been central for JEFI and other firms in order to increase their competitiveness and build a strong international presence in more than 30 countries.

In the Malacca Halal Hub, on the contrary, many problems are visible. First, regarding the level of knowledge sharing between cluster members, we can see that the culture of knowledge management is not high; none of the cluster members has been able to provide an example of a knowledge sharing success story related to their international business activities. Also, in terms of the knowledge management strategy of the cluster, the MHH management agency plays an undeniable role in promoting training and technology sharing, and has taken on itself the responsibility for orchestrating information exchange inside the cluster. But local SMEs and cluster members are mostly passive beneficiaries of such efforts, and still do not have any policy aimed at voluntarily sharing technology and

production processes. The MHH is aware of such problems and is seeking to expand its reach outside of the halal hub, by establishing cooperative relations with institutional and academic actors such as Universiti Teknologi MARA (UiTM).

CONCLUSIONS AND POLICY RECOMMENDATIONS

The results presented above mostly confirm our analytical frameworks. As we have seen, the data collected among the members of the Penang International Halal Hub—which has a very high degree of internationalization—constantly confirmed our theoretical expectations. First, its cluster composition and resulting diversity of internal resources are higher and more complete than in the comparative cluster. Secondly, its internal network is stronger, more dense, and much less dependent on a few central members. Finally, it is has shown a maturity in terms of knowledge sharing and management, which is much deeper. In comparison, the Malacca Halal Hub has shown relatively poor results on these three aspects, which is in line with its lower degree of internationalization and more difficult process of exporting its products. Such results point to the fact that the three aspects of cluster governance identified in the present article—that is cluster composition, network density, and knowledge management—play a significant role in easing and promoting firm internationalization, and gives us a strong insight about the mechanisms by which industrial clustering can help and support the internationalization process.

Moreover, it is necessary to note that the international success of the PIHH is the product of a much larger multilevel national strategy. Instead of trying to cater to the needs of different companies with one single program, Malaysian government institutions have opted for a multivectorial support infrastructure, diverse enough to respond to the various needs of companies. Halal parks themselves are only one part of a much larger support system. Since they are operated and managed at the local level, they can have a clearly defined priority based on the competitive advantage of each states: Malacca focuses on small scale and family business SMEs, whereas Penang focuses on already well-established multinational companies. This enables the park institutions to provide focused and specific services specially catering to the needs of local companies, by offering promotion and business matching services for SMEs, logistics support for MNCs, and so forth. The federal institutions, on the other side, help halal industrial parks with promotion activities, raising local and international awareness, easing export procedures, ensuring strict compliance with halal certification, and so forth. In order to develop a strong and successful halal industry, there is no one-size-fits-all solution: instead, institutions at all level have to create synergies and establish an environment were halal industry firms can prosper.

Also, in order to be effective and help firms grow, it is absolutely central for such industrial parks to offer flexibility and adaptability based on the priorities of the firms themselves. Such flexibility allows companies to adapt and respond to market signals, which are especially critical and fast-changing for the food processing industry. The Malaysian halal industrial parks mostly apply such principles. Companies can benefit from different programs which evolve accordingly to their growth strategies. Indeed, except for a few firms which were born global, most of the firms surveyed in this article have first sought to develop their presence in the national market, while focusing later on foreign markets. Both strategies are not mutually exclusive, but represent a continuum of growth. This is in line with the overall strategy of the Malaysian halal industry: first building a strong national market

demand (by raising halal awareness, encouraging halal certification, and halal consumption among the public), then focusing on international development (through aggressive promotion of the Malaysian standard, and market development in Muslim and non-Muslim countries).

Finally, the experience of the Penang International Halal Hub teaches us that it appears as essential for industrial halal parks to fully concentrate on the most promising companies and fix relatively high standards for firms wanting to enter the parks. Parks should not be institutions aimed at transforming companies, but should instead focus on providing the environment needed for a foreign market development strategy to already well-established firms. With a strong accent on logistical services, promotion services, representation, and foreign linkages, such parks can allow companies to further grow in a comfortable, export-friendly and export-inducing environment. While industrial parks can give out all the necessary tools for international expansion, at the end of the day, it is up to the companies to make good use of these tools, which depends not on the halal industrial parks, but much more on the risk-tolerance, the capacities, and the willingness of the businessmen themselves. For such industrial parks, having high standards by accepting only companies which have demonstrated a resolute willingness and resolution to exports and growth and by filtering weaker companies can thus be a recipe for success.

ENDNOTES

[2] The Second Industrial Master Plan (1996 - 2005), the National Agriculture Policy (1998 -2010), the Ninth Malaysia Plan (2006 - 2010), and most recently the Third Industrial Master Plan (2006 - 2020) all give attention to local halal industry development.

[3] Due to close and historic links between Malaysia and Singapore, and the relative facility with which the two countries exchange and trade with each other (compared with neighbouring countries), we made the decision to distinguish Singapore from the larger South-East Asia category.

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