

HALAL CERTIFICATION SYSTEM AS A RESOURCE FOR FIRM INTERNATIONALISATION: COMPARISON OF CHINA AND MALAYSIA

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ABSTRACT

There is a broad consensus to the effect that public agencies can mitigate the obstacles and uncertainties associated with the process of firm internationalisation. One critical aspect of such interventionist policy is the establishment of a national/regional halal certification system, which has been widely recognised as a core factor in the international expansion of halal food firms. Based on thorough field research conducted in the halal food industries of the Ningxia Autonomous Hui Region of China and Malaysia, the present article examines how different models of halal certification can promote and ease access of local firms to international markets. Using both qualitative and quantitative methodologies, the present article allows the authors to formulate general conclusions on the relationship between firm internationalisation and halal certification, as well as specific insights for halal food industries elsewhere seeking to promote their international activities.

Keywords: Halal industry, firm internationalisation, halal certification, China halal industry, halal industry in Malaysia

INTRODUCTION

The present article aims to examine the process of firm internationalisation by focusing on the specificities of the halal food industry. According to a large body of literature, the firm internationalisation process is fraught with risks and filled with uncertainties (Conconi et al. 2010). Barriers to internationalisation include, among others, a lack of funding mechanisms adapted to export activities, a lack of information and knowledge regarding target markets, and the inability to meet administrative and bureaucratic requirements related to exports. There is a broad consensus to the effect that public institutions can mitigate these barriers somewhat and facilitate the internationalisation process (De Carvalho 2012; Da Rocha et al. 2007). Public agencies can provide firms with easier access to funds and make available information about potential foreign opportunities. By sharing the costs and risks through effective use of cooperative projects and economies of scale, they can also make it much easier for even small firms to access foreign markets and undertake export activities (Legendijk and Charles 2003).

As shall be seen, in Malaysia and China, both local and national governments have played a central and leading role in encouraging the development of the halal food industry in recent years, especially through various export promotion policies aimed at promoting firm internationalisation. While in both cases, public agencies have adopted a proactive and interventionist role, these new halal food development hubs differ greatly in terms of the nature, efficiency and scale of their internationalisation promotion policies. The respective results of these policies, with regards to the performance of halal food firms in the international arena, also differ greatly, ranging from obvious failures to brilliant successes.

A specific aspect of these export promotion policies—one that is especially important for the halal food industry—deserves more attention: the halal certification system. Indeed, halal certification has been widely recognised as a core factor in the international expansion of halal food firms by many authors, although none has tried to quantify or compare its influence (Bohari et al. 2013; Borzooei and Asgari 2013; Hadju 2011; Hussain 2009). Considering that different regions and countries have put in place different halal certification systems, each with its own set of characteristics, limits and advantages, it appears essential to assess and measure their efficiency and influence on firm internationalisation.

The main purpose of this article is thus to examine and measure how different models of halal certification system can affect the performance of

halal food firms, particularly with respect to their objective of accessing foreign markets. By focusing on two halal food industrial parks—in Malaysia and in China—it shall be seen how different models of halal certification can facilitate or hinder the process of firm internationalisation. Using both qualitative and quantitative methodologies, the present article will allow the authors to formulate general conclusions regarding the relationship between firm internationalisation and halal certification, as well as specific insights for halal food industries elsewhere seeking to promote their international activities.

THE RISE OF THE HALAL FOOD INDUSTRY IN ASIA

The concept of halal refers to a way goods and services are produced and delivered that is consistent with Islamic law, or Sharia, avoiding practices and products prohibited (*haram*) by the precepts of Islam. While halal is most often associated with the food production and processing industry, it also applies to areas as diverse as pharmaceuticals, healthcare products, tourism, cosmetics and hygiene products, logistics, packaging and many other areas (Rizal and Seong 2006). The halal industry is known for the importance it gives to the verification and certification measures at all stages of production to ensure that products are not contaminated with non-halal materials or processes, which involves rigorous analytical techniques (Nakyinsige et al. 2012).

With a worldwide Muslim population of approximately 1.6 billion, the estimated total value of the growing global halal industry was around USD \$2.3 billion in 2012, and this amount is expected to increase consistently in the coming years. This remarkable growth is due to a significant increase in consumption of halal products in Muslim countries and to a growing awareness of Muslim consumers concerning the importance of halal certification (Bohari et al. 2013; Husain et al. 2012). The growth of the halal industry is nowhere more evident than in the Arab Muslim countries of the Persian Gulf, heightened by the magnitude of their rising food imports. To meet the needs of their growing domestic demand, the six states of the Gulf Cooperation Council (GCC) have to import 90 percent of their annual grain needs and 60 percent of their meat products. For Saudi Arabia alone, that means 5 million heads of cattle annually (Xia 2008).

This exponential demand coming from the GCC represents a significant financial windfall for those who can capture a share of this market and has obviously led to heightened interest from foreign

entrepreneurs (Rizal and Seong 2006). Currently, multinational agro-business firms from Brazil, Australia and New Zealand have the largest share of world exports of meat and processed halal products to countries in the Middle East. In recent years, however, several Asian regions and countries with a significant Muslim population have sought to capture a share of this market by encouraging the development and internationalisation of their local halal production base. This is the case, among others, for Brunei Darussalam, Indonesia, Thailand, the Philippines and, of course, Malaysia and China.

In the majority of these countries, the development of the domestic halal industry is strongly supported by both central and local public authorities, with measures including various internationalisation and export promotion policies in particular. The latter have been at the very core of these countries' industrial policies and are generally defined in the literature as the set of collective actions of institutional stakeholders (governments and affiliated para-public agencies) to support firms in establishing, undertaking and developing international activities (mostly, but not restricted to, export). This interventionist approach favouring export promotion corresponds to an active model of economic interventionism, mostly in vogue in the rising Asian economies (Kuchiki 2005; Mitsui and Fatimah 2003).

According to this model, the role of public agencies is to address market failures by providing a wide range of services and resources, such as networking and business matching activities, target market analysis, and marketing services (Hatem 2005). Public policies can also assist firms in obtaining bank loans in order to finance their international activities (Lagendijk and Charles 2010). The empirical literature suggests that such export promotion policies are at the root of the internationalisation of many national and regional agro-food industries, including in Kenya (Yutaka and Zombori 2011), Latin America (Galvez-Nogales 2010), Indonesia (Burger et al. 2001) and Mongolia (Webber and Labaste 2010).

Aside from the obvious and visible aspects of such industrial development support policies, however, the halal food industry also benefits from another aspect of public intervention, which, although less evident, is potentially much more influential: the halal certification system. Indeed, the halal certification system is fundamentally inseparable from the overall halal food industry, and this paper argues that it constitutes a significant factor in determining the export performance of halal food firms. By looking at the halal certification models currently in place in Malaysia and China and by analysing how the core characteristics of these models differ, the authors

assess how exactly they affect the degree of firm internationalisation inside the halal food industry.

HALAL CERTIFICATION SYSTEM AS A RESOURCE

Given the potential importance of halal certification for the internationalisation of halal food firms, it is essential to examine in greater detail the theoretical underpinnings of firm internationalisation. Internationalisation is, as defined by Welch and Luostarinen (1993), "The process of increasing involvement in international operations." Based on this definition, theories of firm internationalisation have sought to explain the reasons why a given firm engages in international activities, the different paths to internationalisation, and, in the case of public policy research, how institutions can hinder or facilitate this process. Many convergent and competing theories have been developed to answer these questions, of which one approach is particularly relevant in the context of the halal food industry: the resource-based view of firm internationalisation.

Rooted in the works of Chandler (1962) and Penrose (1959), the resource-based view of internationalisation considers the firm as a collection of specific and heterogeneous resources. According to this approach, whether a firm achieves and maintains a profitable position in the international market depends on its ability to obtain vital and exclusive resources and on maintaining this advantage. Independently of the content of the international activity itself, the resource-based view, according to Conner (1991), implies that internationalisation consists in the mobilisation, accumulation and development of resources, which are then used to initiate international activities.

If the distinctive resources of a given firm meet the four characteristics of *exclusivity* (i.e., they are valuable, scarce, difficult to imitate, and limited), they can provide a significant competitive advantage to the firm in the international arena. Many empirical studies confirm the insights of the resource-based view of firm internationalisation. Indeed, it appears that many aspects of international development are utterly dependent on the critical resources available to the firm. For example, resources determine the path, speed and sequence of internationalisation (Kamakura et al. 2012), and different resources create different competitive advantages (Wang and Ahmed 2007).

In this article, the authors regard halal certification systems as a resource made available for firm internationalisation by public agencies. Thus, public agencies can exert a beneficial influence and ease the firm

internationalisation process by influencing the four characteristics of exclusivity of its domestic halal certification system, namely, its value, scarcity, inimitability and limited aspect. By doing so, public agencies are in fact modifying the resource available for firm internationalisation. Guided by the theoretical framework presented above, the authors evaluate and compare the inherent characteristics of the halal certification systems currently in place in Ningxia and Malaysia. This allows the authors to evaluate which one of these certification systems is the most effective with regards to promoting firm internationalisation and to assess the validity of the authors' theoretical assumption.

THE HALAL FOOD INDUSTRY IN NINGXIA AND MALAYSIA

Without doubt, Malaysia is widely seen and recognised as the world's most successful example of halal food industry development, and its 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. At the time, halal inspections were carried out by a private company appointed by the federal government. A public institution, the Malaysian Islamic Development Department (*Jabatan Agama Islam Malaysia* or 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 applicable Islamic law. As of 1996, the development of the halal industry has been integrated into overall industrial and agricultural government plans, including the Halal Industry Development Master Plan, adopted in May 2008.

As part of these efforts, halal industrial parks were established as one of the pillars of the Malaysian halal industry development master plan. Such parks consist of communities of manufacturing and service companies, supported by public and private organisations offering research, logistics, training and other services. The purpose of the Malaysian halal industrial parks is to improve the economic performance of member firms. This includes boosting their performance in both domestic and international markets, increasing awareness and enforcement of various certifications and standards, and increasing product innovation. In order to do so, public agencies provide a variety of services to member firms, including various financial incentives, such as full income tax exemption on capital expenditure for a period of five years. As a result of these efforts, Malaysian

halal industrial parks have benefited from over RM6 billion in investments from 17 multinational companies and over 80 small and medium companies. For the purpose of this study, the authors have selected the Penang International Halal Hub (PIHH) as the main research location in Malaysia. The PIHH is situated along the Straits of Malacca, in the historical city of Penang, which has traditionally been a successful trading hub for northern peninsular Malaysia. *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 local halal cluster and on helping to establish a comprehensive and integrated halal supply chain. Positive outcomes of these efforts are already visible. The local halal industry has grown from 55 companies in 2008 to 565 today. In terms of its degree of internationalisation, the Penang International Halal Hub is a success-story: 100 percent of the member firms have already undertaken international activities, mostly exports to neighbouring markets.

Much like Malaysia, China is also interested in accessing the growing Arab markets and benefitting from their lucrative export and investment opportunities. Currently, China has nearly 6,000 firms involved in halal food production, concentrated mainly in the five provinces of the Chinese Northwest. The Ningxia Hui Autonomous Region is unquestionably the heart of China's efforts in terms of halal food industry development. Indeed, according to available data, the Ningxia halal industry in 2012 included upward of 655 firms (including 102 large-scale enterprises) and employed some 20,000 people, with a total industrial value of CNY17.43 billion (Tian 2013).

Members of the Hui Muslim ethnic minority in Ningxia, constituting approximately 34 percent of the total population of 6,390,000, form a large pool of consumers and an invaluable source of expertise in the halal industry. Indeed, religious and cultural affinities shared by the Hui Muslim minority and their co-religionists in the Middle East, according to local experts, represent a unique comparative advantage for Ningxia, forming the central pillar of the region's export promotion policy. Based on the principle of "promote trade through culture," the religious and cultural background of local Chinese Hui Muslims is conceived as "bridging" the differences with the Muslim world, with the Hui people playing the role of mediators between the halal food firms of Ningxia and the Arab-Muslim markets.

At the local and municipal levels, authorities are fully committed to achieving these development goals. This proactive trend in favour of Ningxia's halal industry is especially evident in the city of Wuzhong, where a fund for the development of the halal food industry was established in

2010, with annual investments of CNY5 million, seeking to promote the development of a halal food production chain and to facilitate recognition of local products by foreign halal certification bodies (Tian 2013). These efforts eventually resulted in the formation of the largest halal industrial park in China: the Wuzhong Halal Food Industrial Park. As of 2012, 176 companies were active in this industrial park, including 139 firms in halal food production (80 percent of the industrial base).

As of today, however, several years after the establishment of this export promotion strategy, results are not up to initial expectations, and the current situation is far from ideal. Indeed, despite the impressive efforts of public officials and state agencies, local firms have encountered many obstacles and constraints hindering their international expansion (Xia 2008; Wu 2013). The data gathered in the course of the field survey show that the overall degree of internationalisation of the Wuzhong halal food industry appears to be very low. Of all the firms in the Wuzhong Halal Food industrial park, only approximately 20 percent have any export or international experience; these firms are mainly active in Malaysia, the United Arab Emirates and Saudi Arabia.

METHODOLOGY AND EFFECTS OF HALAL CERTIFICATION MODELS ON FIRM INTERNATIONALISATION

As mentioned in the introduction, addressing the issue of halal certification as a resource provides the authors with a very promising object of study to investigate and compare the effects of halal certification systems on firm internationalisation in China and Malaysia. The results presented below are based on qualitative and quantitative empirical data, collected during a wide-scale field study conducted in the Wuzhong Halal Food Industrial Park and the Penang International Halal Hub, between November 2014 and March 2015.

Halal food firms in these two countries were asked to evaluate their level of internationalisation on a scale of 1 to 5, 5 being the highest, based on a set of common standards, such as, percentage of revenue coming from exports, number of international cooperation projects, and size of presence in foreign markets. Firms were then asked to assess, according to their experience, whether their internationalisation activities benefited or not from their domestic halal certification system, on a scale of 1 to 5, 5 being the most beneficial effect. Finally, further qualitative data were collected to explain in detail the statistical effects of each halal certification system.

In total, 78 halal food firms in the two countries were interviewed on site or by phone. In more than half of the cases, the researchers had the opportunity to visit facilities, review products and certificates, and assess first-hand the degree of internationalisation of these companies. In addition, the researchers had the opportunity to visit 18 government institutions and agencies (in the cities of Yinchuan, Wuzhong, Penang and Kuala Lumpur). These valuable testimonies will be used to better contextualise the data and estimate the effects of each halal certification system. As can be seen from Figure 1, both industries differ widely in terms of their level of firm internationalisation. The mean score of firm internationalisation among Ningxia halal food firms was 1.37/5, compared to 3.46/5 for the Malaysian halal food industry. The standard deviations of the scores for each group (1.08 and 1.46) indicate that the spread of the scores is slightly higher in the Malaysian halal food industry than among Ningxia halal food firms.

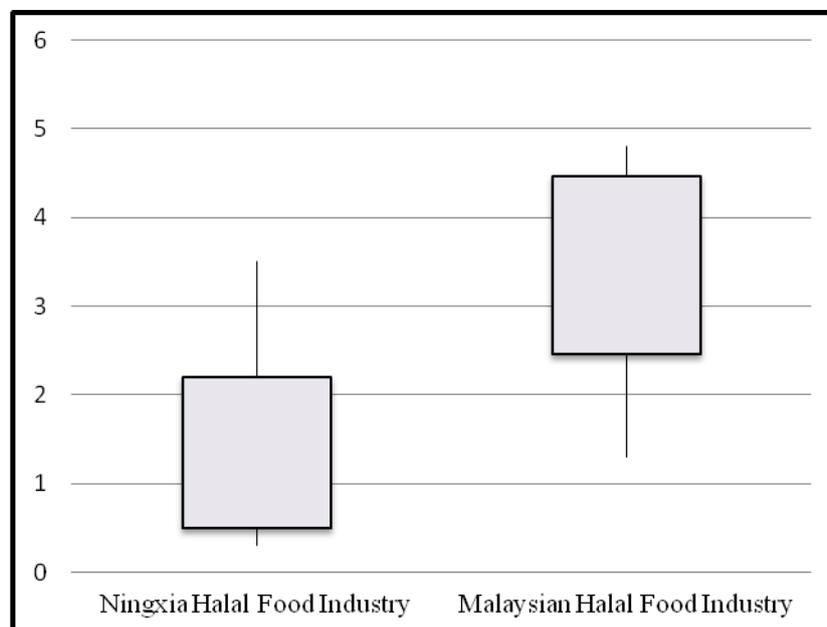


Figure 1: Level of firm internationalisation.

In order to determine if this difference is statistically significant, the authors compare the difference between the mean score of firm internationalisation under both halal certification systems. The results of the independent samples t-test indicate that the difference between the means (2.09) of the two certification systems is statistically significant. Indeed, the results show that the degree of firm internationalisation under the Malaysian halal certification system is significantly higher ($M = 3.46$; $SD = 1.08$) than under the Ningxia halal certification system ($M = 1.37$; $SD = 1.46$; $t = 8.22$, $p = .000$). The difference would lie between 1.5 and 2.5, which shows that

the effect is quite large, considering that the maximum value for the degree of firm internationalisation is 5.

Because the difference between the samples the authors have collected is larger than expected based on the standard error, the difference is genuine, and the authors can assume that the Malaysian halal certification system is thus significantly more effective in promoting firm internationalisation than the Ningxia halal certification system. This is illustrated in Figure 2, where it can be clearly seen that the responses from the Ningxia halal food industry form a negative slope, implying that the beneficial effect of the local halal certification system is not associated with an increase in the objective degree of firm internationalisation. Respondents from the Malaysian halal food industry, on the other side, report a strong and positive relationship between the efficiency of their domestic halal certification system and their degree of firm internationalisation.

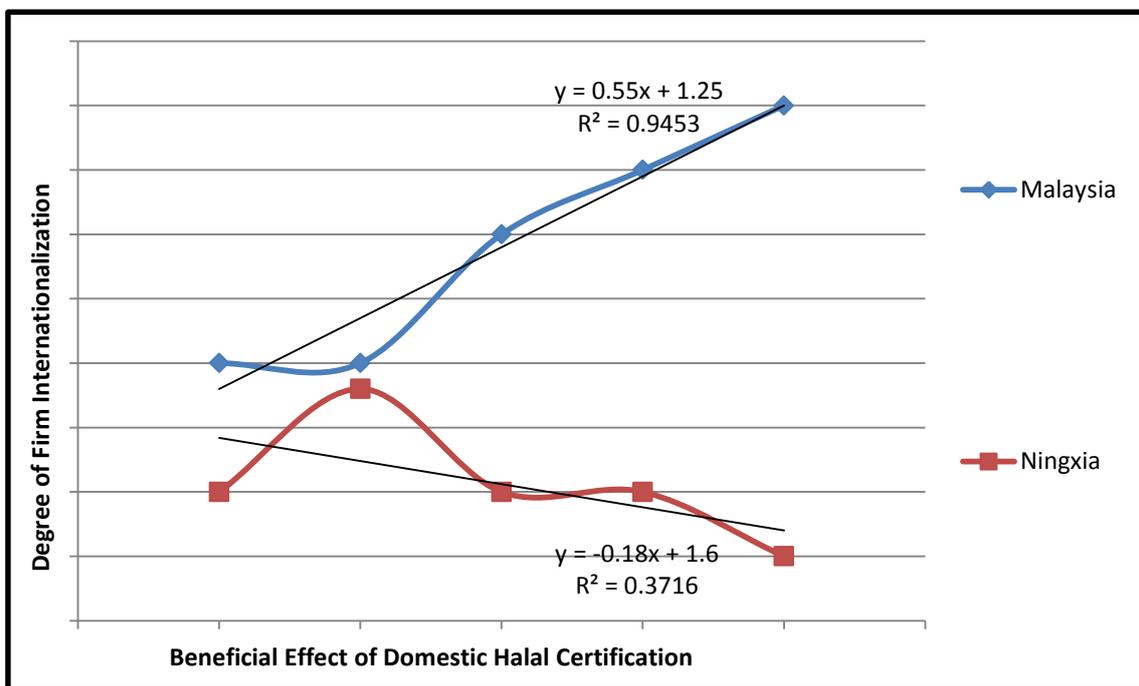


Figure 2: Firm internationalisation/certification beneficial effect.

The testimonies of respondents and qualitative data collected on site confirm the author's statistical results. As the authors have noted, Malaysia has fully centralised its halal certification system under the authority of the central government, and its halal certification system is fully supported by relevant government institutions. Established in 1997, JAKIM acts as Malaysia's sole agency responsible for issuing and controlling halal certificates. The Malaysian halal standard, named the "General guidelines

for Halal food production, preparation, processing and storage" (MIS500: 2004), complies with good manufacturing practice standards (GMP) and good hygienic practices (GHP) and is ISO-compatible. Because of this high degree of coherence, it is widely recognised by other certification bodies as the most reliable halal standard in the world, and as the authors saw, it represents a significant competitive advantage for Malaysian firms.

On the other hand, China's current national halal certification system is still vastly decentralised and lacks coherence. It is based on a customer-centred and voluntary approach, with no central organisation or agency seeking to unify the certification process at the national level. Halal certificates are freely available from different regional/private agencies. Respondents in Ningxia can obtain their certificate from the Ningxia Halal Certification Center, a regional government body established in 2008 that is in charge of certifying local firms. However, respondents in Ningxia were unanimous in saying that the regional halal certificate is "completely useless" with regards to international and export activities because it is not recognised outside of China.

Because of this, firms in Ningxia have to apply to foreign halal certification bodies in their target market. This is the only way Ningxia firms can have their products certified and accepted in the international arena. For firms that have no international experience, this represents an overwhelming challenge: most entrepreneurs have described this process as long, expensive and complex, and understanding the international certification requirements, filling the relevant formalities, organising inspection visits of foreign certification officials, etc., are among the greatest challenges they face.

When asked about this lack of foreign recognition, officials from the regional Trade Office and the Ningxia Halal Certification Center indicated that the current priority of the Ningxia government is to develop relations inside China and expand the influence of the Ningxia halal certification among other Chinese provinces. Indeed, as of 2015, the Ningxia halal certificate has been fully recognised by Shaanxi, Gansu, Qinghai, Yunnan, Tianjin and Sichuan provinces. In terms of international recognition, however, local halal food firms cannot count on local institutions.

Moreover, many Muslim countries (among others the UAE and Saudi Arabia), have recently started to require not only that the food products be certified halal but also that the entire logistics process, from production to consumption, be "halal," to fully ensure the integrity of the products. The main principle of halal logistics is that halal products be separated from non-halal products throughout the entire logistics chain, in order to avoid any possibility of cross-contamination. Currently, the Ningxia halal

certification does not meet these requirements, which further limits its ability to export halal food. The Malaysian certification system, however, includes a halal standard specifically designed to ensure the halal integrity of logistics and supply chains.

Another aspect of the halal certification system concerns the support infrastructure, meaning the way public institutions and agencies provide the required support and assistance in order to efficiently implement their halal certification system. In this regard, Malaysia again proves its superiority. Indeed, respondents in Malaysia said that the process of securing their halal certificate was fast and smooth, thanks mostly to the halal certification pre-assessment and coaching services provided by the Halal Industry Development Corporation (HDC). Established in 2006, HDC acts as a focal point of the halal industry in providing comprehensive support to domestic firms, including information and certification resources. Among its main services, HDC offers training and educational programs for Malaysian and international companies (more than 50,000 people have benefited from such training in Malaysia).

Before submitting their halal certification application, Malaysian firms can benefit from a pre-assessment inspection by the experts of HDC in order to ensure that their products meet halal, safety and quality requirements. This pre-assessment program is comprehensive and focuses on all eventual issues: halal logistics, halal management, Islamic finance, halal slaughter practices, halal production, etc. It also includes the assessment of chemical and molecular components. Firms that fail the pre-assessment inspection are then "coached" by HDC experts to help them rectify the problems and successfully secure a certificate. The current approval rate for halal certification in Malaysia is approximately 90 percent, which reflects the effectiveness of the coaching program.

Moreover, in order to be effective and help firms grow abroad, it is absolutely central for the certification support infrastructure to be flexible and to always target its intervention according to the needs and priorities of the halal food firms themselves. For the most part, the Malaysian model of certification support applies these principles, and its international success is the product of a much larger multilevel national strategy. Instead of trying to cater to the needs of different firms with one single program, Malaysian public agencies have opted for a multivectoral support infrastructure (which includes halal parks, SME Corps, HDC, JAKIM and many more specialised agencies), diverse enough to respond to the varied needs of firms. This shows that in order to develop a strong and successful export-oriented halal industry, there is no one-size-fits-all solution: instead, public agencies at all

levels have to create an environment where halal food firms can prosper and internationalise themselves.

In Ningxia, this type of support infrastructure appears to be seriously lacking, and local entrepreneurs are left alone in the certification process. This is despite the fact that the goals of the Ningxia Center for Halal Certification include the "promotion of local firms in the international arena" and "providing assistance to local firms in securing international halal certification." In fact, such support is rarely offered or given. The Center does provide training in order to help local firms obtain and secure local certification, but such training is optional and does not apply to foreign certification requirements. Ultimately, local entrepreneurs have no guidelines and no idea as to where to start in order to secure foreign certification, which explains why so many firms in Ningxia rely on intermediary firms and middlemen to initiate their first export activities. This lack of support infrastructure also explains why the current approval rate is much lower than in Malaysia, at approximately 50 percent, and why the overall certification process is longer, at approximately 45 to 60 working days.

CONCLUSION

The results presented above mostly confirm the author's initial hypothesis and point to the fact that the aspect of export promotion policies under study, namely, the halal certification system, can significantly affect the degree of firm internationalisation. Indeed, the authors saw that public agencies can play a positive role in terms of firm internationalisation by promoting a halal certification system that meets the four characteristics of exclusive resources. This is the case of the halal certification system currently in place in Malaysia: its centralised nature, reliability and strong support infrastructure make the Malaysian halal certificate a valuable, scarce and inimitable resource. This, in turn, provides a significant competitive advantage to Malaysian firms in the international arena.

These significant results give the authors a strong insight into the mechanisms by which public agencies can help and support the internationalisation process of halal food firms. Of course, a successful process of firm internationalisation does not depend solely on certification: many external factors also play a fundamental role, such as the international business environment, the target market, international and national trade policies. However, all other things being equal, this paper makes the point that a highly influential and reliable halal certification system is a major

asset that can help firms overcome obstacles that are inherent in a transition towards international markets.

In the case of Ningxia, where the unreliability and the lack of recognition of the certification system are hindering the export performance of local firms, improving the regional halal certification system should be an absolute priority for the authorities. As long as the Ningxia industry is struggling with a decentralised, unreliable and multi-polar certification system, it will be very difficult for local firms to gain a sustainable foothold in foreign markets. The first step towards a coherent internationalisation strategy should be the monopolisation and centralisation of all halal certification activities in Ningxia under a public certification agency. Only by centralising such activities can the local halal food industry hope to secure the recognition of foreign halal certification bodies.

In Ningxia, it is also evident that the problem is not solely limited to the certificate. It appears that many of the obstacles to the internationalisation of the Ningxia halal food industry are due to an inadequate support infrastructure. Services and resources provided by public agencies do not correspond to the firms' specific needs. Thus, the authors agree with the conclusions of Yang (2007) and Liu (2013), according to which the difficulty of going abroad for Ningxia halal food firms emanates in part from the fact that there is an evident "lack of coordination" between public agencies and private firms.

From a theoretical point of view, the data presented in this paper appear to show that the theoretical approach introduced previously, namely, the resource-based view of firm internationalisation, is applicable to the author's case and appears to be particularly adapted to the halal food industry. A study of the halal food industry that would ignore the certification aspect is likely misguided. This is in line with Coviello and McAuley (1999), who encourage future research "to use a more holistic approach to the conceptual thinking" of internationalisation and to avoid silo mentality, which has undermined this research area for too long.

Thus, the lesson for the development of future halal industries and for future research in this area is that the real issue at play is not whether interventionist policies are a suitable choice for promoting the international development of halal food firms (this is widely agreed upon and has been proven many times) but to evaluate what type of halal certification system is best able to overcome the specific obstacles and barriers faced by local firms in their internationalisation process. In order to do this, it is necessary to first study in detail and identify the specificities of local barriers in order to question the relevance of the certification system currently in place. To do this, future researchers should concentrate their efforts on conducting

extensive empirical research to collect both qualitative and quantitative data from firms, always with the goal of identifying a more efficient, more targeted model of certification and internationalisation.

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NOTES

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