



TECHNOLOGICAL CAPABILITIES AS A KEY ENABLER FOR INTERNATIONALIZATION AMONG MALAYSIAN SMES IN FOOD AND BEVERAGE MANUFACTURING SECTORS

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Abstract

The main objective of this paper is to study technological capabilities as a key enabler for internationalization among Malaysian SMEs in food and beverage (F&B) manufacturing sectors. The Malaysian food and beverage (F&B) industry is a fast-growing industry, dominated by small and medium scale companies (SMEs) and has a significant contribution to Malaysian economy with revenues amounting to US\$34 million in 2018 and annual growth rate of 7.6%. In order to penetrate and sustain in both domestic and international market, SMEs need to create a long-term strategy for competitive advantage through product innovation and technological capabilities. Technological capabilities play an important role in determining the success of new ventures or SMEs because it enable companies to gain market acceptance and achieve long-term competitive advantage through continuous innovation in improving existing products and/or creating new products in the market. In the current world, companies will have difficulties in penetrating the market without the application of technological capabilities. Various studies have been done on how the practice of technological capabilities is related to the business performance but not many researches focus on technological capabilities as a key enabler during the internationalization process and how it will help SMEs in penetrating the international market. Drawing on the existing literature review, we are going to conduct a qualitative research model by interviewing 6 – 12 F&B manufacturing companies in which technological capabilities not only influence firm performance but to identify its role as the key enabler in the internationalization process for SMEs to penetrate the international market. The finding of this research is going to contribute to the development of F&B industries in developing countries especially in Malaysia. It will provide important information that will be useful for Malaysian F&B industries in penetrating the international market and it will contribute to the body of internationalization knowledge and international entrepreneurship.

Keywords: *Food and Beverages, Malaysian SMEs, Technological Capabilities, Internationalization.*

1. INTRODUCTION

SMEs have been recognized as one of the main contributors to economic activity, employment, innovation, and wealth creation in many countries. According to Pasanen (2003), SMEs generate societal growth in terms of new jobs and revenues, they create innovations and they are active actors in global business networks (Iskanius & Lamminsalo, 2005). SMEs represents the vast majority of 98.5% of the business population with contribution of 38.3% to Malaysian overall GDP, 17.3% to total exports and 66.2% to overall employment in 2018 (NESDC, 2019). Comprising of various sectors including the services, manufacturing, mining and quarrying, construction, and agriculture, Malaysian small and medium-sized enterprises are indeed the catalyst for addressing economic inequalities across different classes, ethnicities, regions and supply chains (NESDC, 2019). According to the SME Annual Report 2018/2019, services sector contributed 56.7% to the overall GDP of 2018, followed by manufacturing (22.4%), agriculture (7.3%), construction (4.9%), mining and quarrying (7.6%). Services sector also reported a stronger growth of 8.1% in 2018 with 63.9% of that contribution came primarily from wholesale and retail trade, food & beverages and accommodation (NESDC, 2019). On the other hand, technological capabilities (TC) is commonly recognised at the national and company levels as a strategic source of development and prosperity (Jirayuth , Un Nabi, & Dornberger , 2013). Companies with more advanced technology will be able to gain competitive advantage by having the ability to innovate new products and achieve higher differentiation in respond to the changes in the market and demand from the customers (Jirayuth , Un Nabi, & Dornberger , 2013). In spite of internationalization benefits that promote SMEs growth, Malaysian SMEs involvement in cross border activity is relatively low compared to developed nation due to obstacles and challenges from both internal and external factors (Hasim, Ishak, & Shamsudin, 2018). Various studies have been done on how the practice of technological capabilities is related to the business performance but not many researches focus on technological capabilities as a key enabler during the internationalization process and how it will help SMEs in penetrating the international market.

This paper is prepared as follows:

1. The understanding of SMEs, internationalization, and technological capabilities
2. Challenges faced by SMEs during the internationalization process
3. Pilot-case study of Haliza Industries Sdn. Bhd.
4. Conclusion and some recommendation for future studies

2. LITERATURE REVIEW

2.1. Small Medium Enterprises

Previously, there is no common definition of small and medium enterprises (SMEs) in Malaysia as every agencies define SMEs based on their own criteria and needs. Most agencies identify small and medium-sized enterprises (SMEs) based on the basis of their own metrics, typically benchmarking against annual revenue turnover, amount of full-time staff or shareholder funds (Council, 2005). This was not a surprise because most studies only focus on larger organizations or also known as multinational companies eventhough small and medium-size enterprises are growing tremendously (Baharun & Mi, 2013) and play an important role in the country's economic development and had posed a significant contribution toward Malaysian economy in term of GDP and a source of employment (Hasim, Ishak, & Shamsudin, 2018).

By understanding the needs to establish a standard definitions of SMEs in order to facilitate better identification of SMEs across sectors, the National SME Development Council has approved the first common definitions of SMEs on June 9th, 2005 and the definition has been adopted across ministries and agencies including financial institutions involved in SME development (Council, 2005). However, a review of the definition was conducted in 2013 given the facts that there were many changes and developments in the economy since 2005 such as price inflation, structural changes and change in business trends (SME Corp Malaysia, 2020). Definitions of SMEs in Malaysia are based on two main criteria which is the number of employee or annual sales turnover (Council, 2005). Table 2 shows a summary for the definition of small and medium enterprises by SME Corporation Malaysia.

Table 2. - Definition of SMEs

Category	Small	Medium
Manufacturing	Sales turnover from RM300,000 to less than RM15 million OR full-time employees from 5 to less than 75.	Sales turnover from RM15 million to not exceeding RM50 million OR full-time employees from 75 to not exceeding 200
Services and Other Sectors	Sales turnover from RM300,000 to less than RM3 million OR full-time employees from 5 to less than 30.	Sales turnover from RM3 million to not exceeding RM20 million OR full-time employees from 30 to not exceeding 75

2.2. Internationalization

The term ‘internationalization’ varies even among researchers but from an economic point of view, it is defined as the process where business gets more involved in the international market (Azuayi, 2016). The term internationalization is also about the ongoing strategy process for most of the business firm who are transforming their business internationally (Zou, Liu, & Ghauri, 2010). Calof and Beamish (1995) further explained that internationalization is a procedure or process of adapting a firm’s operation (strategy, structure, resource, etc.) to international environments. Internationalization together with the development in information and communication technology provide the opportunity for small and medium enterprises (SMEs) to expand their business into foreign market (Nik Abdullah & Mohd Zain, 2011). In today’s modern world, internationalization is essential even for SMEs as they emerge as a dominant force impacting the growth of national economies (Mpofu & Sauti, 2014).

There are many factors that motivate SMEs in entering overseas markets which include market expansion, more profit exposure to new ideas (Nik Abdullah & Mohd Zain, 2011) and several studies also showed that a key driver for internationalization is growth opportunities (Mpofu & Sauti, 2014). According to a survey done by HSBC including more than 202 firms from Malaysia, “Four out of five businesses in Malaysia (85%) feel they have positive prospects for international trade over the next two years,” and businesses in Malaysia strongly believe in the next five years, international trade will drive innovation, provide new business opportunities and improve efficiency (Syed Jaafar, 2019). The same survey also concluded that the top five expansion markets over the next three to five years for Malaysian companies are Singapore, China, Japan, Indonesia and the United States while China (35%) and Singapore (28%) remain Malaysia’s two largest trading partners, while third-placed Indonesia has increased greatly in the last 12 months to 25% from 19% a year earlier (Syed Jaafar, 2019).

2.3. Technological Capabilities

Technology capability or technological capabilities derived from the word ‘technology’ and ‘capability.’ Technology is defined as the practical application of knowledge especially in particular area (Merriam-Webster) or the application of scientific knowledge for practical purposes, especially in industry, which include the machinery and equipment developed from the application of scientific knowledge (Lexico). Another definition for the word ‘technology’ is the branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society, and the environment, drawing upon such subjects as industrial arts, engineering, applied science, and pure science (Dictionary.com). On the other hand, the

word capability means the ability to do something (Cambridge Dictionary). That being said, technology capability is the ability to do something through the application of scientific knowledge for practical purpose.

The meaning of technology capability or technological capabilities might vary among researchers, however the definitions were not so much different from one another. Technological capabilities or TC is a term used to define a set of knowledge, skill, experience and ability to select technologies for the primarily use in operation with the main objective to increase values or to extend values to the processes and products that will benefits the company (Ahmad , Othman, & Mad Lazim, 2014). Another author defines TC as the company's ability to perform technical functions in developing new products or new processes and to operate companies' facilities effectively (Lestari & Ardianti , 2019) while Salisu & Abu Bakar (2019) defines technological capabilities as an organisation's ability to recognise, obtain, develop and also use modern and latest idea in producing the most superior product with the use of technologies during the whole processes that will best meets the current market requirements and improves the efficiency of the organisation.

Technological capabilities play an important role in determining the success of new ventures because it enable companies to gain market acceptance and achieve long-term competitive advantage through continuous innovation in improving existing products and/or creating new products in the market (Zou, Liu, & Ghauri , 2010)]. Besides, it also allows companies to address foreign limitations by helping them to be more flexible in their design of products (Lestari & Ardianti , 2019) thus enable them to compete in both domestic and international market (Zou, Liu, & Ghauri , 2010). In order to compete and sustain in the market, SMEs also need to be more resilient by strengthen their capability, which involve acquiring new skills, techniques and technologies, and how to utilise these factors to improve the business operation.

2.4. Challenges for International Growth among SMEs

In spite of internationalization benefits that promote SMEs growth, Malaysian SMEs involvement in cross border activity is relatively low compared to developed nations due to obstacles, challenges from internal and external factors (Hasim, Ishak, & Shamsudin, 2018). Additionally, small and medium enterprises or SMEs are still struggling to be competitive in the foreign market and in general, SMEs are said to be lacking in penetrating the international markets for seeking more profits and market opportunity (Hussain, Saad , Saud, & Md Isa, 2015). SMEs represents the vast majority of 98.5% of the business population with contribution

of 38.3% to Malaysian overall GDP, 17.3% to total exports and 66.2% to overall employment in 2018 (NESDC, 2019). However, Deputy Finance Minister Datuk Amiruddin said that, “38.3% is not good enough compared to other developed nations and economies, which the SMEs contributed at the rate around 60%, 70% and even 80%,” (Kamel, 2019). Besides, prior research had found that 50% of the Malaysian SMEs had ended up in bankruptcy within five years of establishment, and this is due to the inability to cope with global competitions and environmental change that needs firm to innovates in many ways to keep them in line with those changes (Hasim, Ishak, & Shamsudin, 2018).

Some of the reasons behind this failure of SMEs in penetrating the international market might be due to several internal and external barriers including the inability to access financial assistance, lack of internal resources and expertise in the development of global marketing techniques for branding, foreign demand adaptation and networking with other companies (Hasim, Ishak, & Shamsudin, 2018). Another studies show that some of the internal factors faced by SMEs include the limitation to the resources, management, marketing and knowledge while at the same time SMEs also needed to face the challenges of short-term financing, shortages of labour skills, as well as insufficient production capacity (Wąsowska, 2016). Most studies showed that there is higher numbers of SMEs that did not involve in international trade which means that there are still opportunities for the government to encourage internationalization and a more comprehensive approach is needed to help these SMEs in improving their competitive advantage to compete in the international market. (Nik Abdullah & Mohd Zain, 2011).

2.5. Pilot Case Study

A lot of research had been done on how technological capabilities affects business performance in manufacturing sector. However, not many research focus on the relationship between TC in the internationalization process among Malaysian SMEs especially in F&B manufacturing sector. Hence, in order to have a better understanding on how technological capabilities are applicable to businesses especially among SMEs in the manufacturing sector, this research did a study on Haliza Industries Sdn. Bhd. or also known as HISB as a pilot case. Haliza Industries was established in 2008 and after 4 years of R&D, they came up with their first product in 2012. With the believe that snacks must also be related to nutritious foods, HISB begins to produce and sell healthy snacks focused on corn, potatoes, wheat and other grains compared to other junk foods on the market without any addition of monosodium glutamate (MSG), artificial flavor and color.

In the early stage of establishment, there was very little demand of the product in the Malaysian market thus the founder decided to use the online platform to market the product. By using the technology as the platform, they were able to get the prospect from China that was very interested in bringing the product to the different market and HISB was successful in exporting the products to their first international market in the early stage of the establishment with the help of technological capabilities. In August 2017, HISB received a grant worth RM2.5 million from Palm Oil and Rubber National Key Economic Area (NKEA) and used the money to buy fully automated machinery. According to the founder, “We used the money to buy fully automated machinery not available in Malaysia and had to be imported from overseas. Aside from creating higher-quality products, the machines improved our production from 100kg of cereal per hour to 200kg of cereal per hour” (NSTP, 2018). Currently, HISB focused on exporting the products to other country such as Arab Saudi (Jeddah and Riyadh), China (Guangzhou, Shenzhen and Shanghai), Brunei, Singapore, Maldives, Seychelles, Cambodia, Oman and Bahrain. Starting 2017 and by purchasing the new machinery and acquired new technical skills, we managed to export up to more than 10 times (Haliza Industries Sdn. Bhd.).

Technological capabilities through machinery has helped SMEs in gaining competitive advantage compare to other competitors. HISB showed that technological capabilities together with technical knowledge will help companies in product innovation and ease the overall production process. HISB was able to gain competitive advantage in the market because they have the ability to adjust their flavor, spices and packaging based on the demand from the buyers through the application of technological capabilities. When dealing with international market, SMEs need to be able to adapt to rapid changes in the market environment so that they will be able to sustain. This study takes a step towards empirically demonstrating the significance of technological capability on the internationalization strategies of SMEs companies.

2.6. Summary of Selected Literature

Below is the summary of selected literature on SME studies related to this paper’s area of discussion.

Table 2.6. - Summary of selected literature.

Research Title	Authors	Objective	Methodology and Findings
Internationalization and Performance: Small and Medium	Shankar Chelliah, Mohamed	To investigate the relationship of internationalization and performance of SMEs, this study	Quantitative Study

Enterprises (SMEs) in Malaysia	Sulaiman, Yusliza Mohd Yusoff (2010)	focuses on SMEs in the Malaysian manufacturing sector.	
A Review of Technological Capability and Performance Relationship in Manufacturing Companies	Nurazwa Ahmad, Siti Norezam Othman and Halim Mad Lazim (2014)	The major intention of this paper is to have an overview on how TC actually relates towards performance measures in manufacturing companies.	Literature Review (Conceptual Paper)
Technological Capability and Business Success: The Mediating Role of Innovation	ER Lestari and FL Ardianti (2019)	To investigate the influence of the technological capability to firm performance of SMEs who operating in Batu, Indonesia	Quantitative Method
The Internationalization Theory and Malaysian Small Medium Enterprises (SMEs)	Nik Ab Halim Nik Abdullah and Shahrul Nizam Mohd Zain (2011)	The objective of this paper is to look at the internationalization process of Malaysian SMEs and how it fits the internationalization theories.	Quantitative Method
Exploring the Barriers to Internationalisation for Malaysian SMEs	Muhammad Asyraf Hasim, Mohd Fikri Ishak, Mohd Farid Shamsudin (2018)	This study aims to determine the barriers to internationalisation faced by Malaysian SMEs. Qualitative method of research was employed, using asynchronous web-based semi-structured interviews.	Qualitative Method

2.7. Model

As mentioned earlier, various studies have been done on how the practice of technological capabilities is related to the business performance but not many researches focus on technological capabilities as a key enabler during the internationalization process and how it will help SMEs in penetrating the international market. This research is trying to identify how SMEs especially in F&B sectors will be able to penetrate international market with the application of technological capabilities.

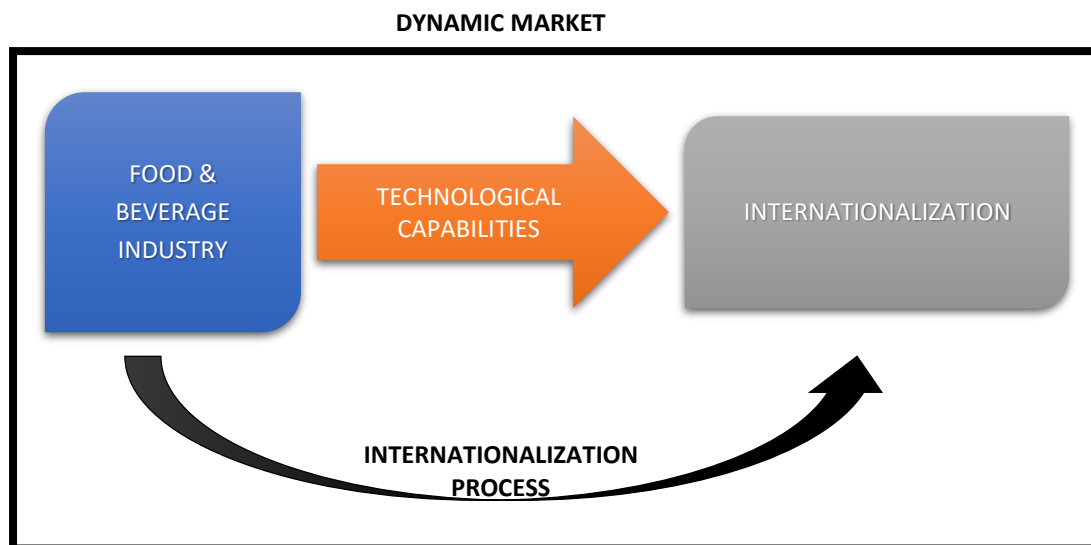


Figure 2.6. - Proposed Theoretical Framework

3. RESEARCH METHOD

The methodology used for this paper consists of library search and evaluating on the existing literature review on the subject of SMEs, Internationalization of SMEs, and Technological Capabilities. The library search encompasses from online and offline materials to article journals from several online database such as Science Direct, Google Scholar, Scopus, etc. The advance search is limited to only available resources thus the limitations from this paper could be due to limited resources from databases. In order to get a better understanding of the topic, we are going to conduct a qualitative research model by interviewing 6 – 12 F&B manufacturing companies in which technological capabilities not only influence firm performance but to identify its role as the key enabler in the internationalization process for SMEs to penetrate the international market. We are hoping that these interviews will give a better and deeper view on the topic. The finding of this research is going to contribute to the development of F&B industries in developing countries especially in Malaysia. It will provide important information that will be useful for Malaysian F&B industries in penetrating the international market and it will contribute to the body of internationalization knowledge and international entrepreneurship.

4. ANALYSIS

Most researches agreed that technological capabilities is essential in businesses because companies with more advanced technology will be able to gain competitive advantage by having the ability to innovate new products and achieve higher differentiation in respond to the

changes in the market and demand from the customers. Technological capabilities is a very broad field, but most researches agreed that in general, TC is essential for any businesses especially for the business performance of the companies. However, not many researches focus on technological capabilities as a key enabler during the internationalization process and how it will help SMEs in penetrating the international market.

5. DISCUSSION

Various studies have been done on how the practice of technological capabilities is related to the business performance but not many researches focus on technological capabilities as a key enabler during the internationalization process and how it will help SMEs in penetrating the international market. Theoretically, technological capabilities is essential for business performance but empirical data is needed in order to show the relationship of technological capabilities during the internationalization process. There is a need for further research being done to find the connection of SMEs and technological capabilities and to identify if TC act as a key enabler for internationalization process among SMEs. Nevertheless, it is important to understand that this is a conceptual paper based on literature review and a pilot-case study. The next step in getting a better understanding regarding this paper is through data collection by interviewing companies and agencies regarding the topic on how technological capabilities help companies during the internationalization process.

6. CONCLUSION

This paper has successfully developed a theoretical framework that is helpful for future research in this area. Nevertheless, as this is a conceptual paper, there is no data collected to enable generalization to other countries. On top of that, the framework in this study is self-constructed with reference to the previous literatures. Drawing on the existing literature review, we are going to conduct a qualitative research model by interviewing 6 – 12 F&B manufacturing companies in which technological capabilities not only influence firm performance but to identify its role as the key enabler in the internationalization process for SMEs to penetrate the international market. The finding of this research is going to contribute to the development of F&B industries in developing countries especially in Malaysia. It will provide important information that will be useful for Malaysian F&B industries in penetrating the international market and it will contribute to the body of internationalization knowledge and international entrepreneurship.

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