



THE INFLUENCE OF TECHNOLOGY IN SMALL AND MEDIUM COMPANIES IN THE INTERNATIONALIZATION PROCESS

Matheus de Queiroz Aires¹

Lucas Machado Nogueira²

abstract

Currently, the economies of countries, mainly developed, revolve around small and medium-sized companies that represent a large part of GDP (Gross Domestic Product), but face great barriers that hinder international expansion. A driving factor for the expansion of these companies is the technology that propagates globalization and increases competition between companies. The internationalization process has three ways to be achieved: the company was born global, became global after a period of activity in the original market or gradually expanded to the international market. Technology, especially information technology, has a major impact on this internationalization process, as it connects the world, making the market unified and helps administrators in their company organization process.

Key words: Technology, Small and Medium Enterprises, Internationalization, Innovation, Information Technology.

1. Introduction

In contemporary times, with a globalized world, the economies of countries revolve around companies, whether they are entities that carry out the capitation of commodities or those that produce industrialized goods that are exported or consumed internally. Among developed countries, these mostly have small and medium-sized enterprises (SMEs) in their territories. An example of this is China and the United States of America, which have 98% and 99.7% of companies registered in this size, respectively (SEBRAE, 2013, p. 4, 2016, p. 2)

¹ matheusqa7@gmail.com - University of Brasília - UnB

² lucasnogueiradf@gmail.com - University of Brasília - UnB

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Therefore, it is necessary to consider the importance of this type of business in countries already considered developed, as they represent a good part of the GDP and, in addition, there are several benefits, such as: job creation, income generation and even the decrease poverty. Not enough, it is necessary to emphasize that SMEs played a vital role in the reconstruction of countries after the recession(NAUDÉ et al., 2014, p. 2).

According to previously conducted research, the barriers faced by small and medium-sized companies are numerous, among them: limited access to finance, few experiences, reduced specific skills, competition, inability to use advanced technology, inadequate record keeping and lack of knowledge to Rahman, Uddin and Lodorfos(2015, p. 3)

In order to achieve such expansion, it is necessary to acquire knowledge about the behavior of small and medium-sized companies in developed countries and their respective internationalization process to determine comparative advantages and competition strategies with companies of the same size, in addition to studying the barriers faced by SMEs in the international market, more specifically the technology barrier and how it impacts this process. Finally, what is the degree of influence of SME technology in developed countries in the internationalization process?

Technology has become a major factor for SMEs over time due to the constant pressures exerted by “Marshallian” industrial districts in the 80s and 90s, motivated by the entry of new competitors in the international market(KUAH, 2014, p. 9). Thus, we define technology as a primary step in the internationalization process, allowing companies to compete due to a new quality standard that can be achieved(HUMPHREY, 2004, p. 25).

2. Theoretical Reference

I. Internationalization Process

The internationalization process is the movement that a certain company makes outside its country of origin in search of new markets, whether through franchising or just a sudden change to the international market. In the context of SMEs, there are three ways to enter the foreign market: the first is the Uppsala model in which the company starts its business in its own country and gradually expands to the international market(OLEJNIK et al., 2012, p. 12), the second model to enter the international market is to make the SME become international from the beginning, that is, “born global”(NAUDÉ et al., 2014)and the third model are companies that operate in the national market for a long period of time and

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suddenly enter the international market. (BELL et al. 2001).

Some of the factors that facilitate the formation of an international startup are: advances in international communication, transportation, information technology, technological process and the integration of the world's financial markets (JOHNSON, 2004, p. 13).

II. Innovation and Technology

Currently, one of the greatest objectives of the imposed economic system is the continuous economic expansion and one of the means to carry out this action is to stimulate the improvement of firms. However, despite the fact that the firms have a certain production limit given their fixed and variable costs, technology can achieve this expansion, as it can achieve greater production given the same period of time or even reduce some variable costs, such as: labor, inputs and etc. Therefore, a key factor for the internationalization process is technology, as it is admitted that technology and globalization help each other due to the increase in technology facilitating globalization and globalization increasing the profitability of technology Aggarwal (1999)(JOHNSON, 2004, p. 17). The explosive growth of low-cost technologies is connecting people and places, as communication technology has created a greater awareness of the opportunities that happen in the world (JOHNSON, 2004, p. 18).

On a globally competitive economic environment, companies are challenged to be continuously innovative. Oke et al. (2009) mentioned that the necessary technological or research and development (R&D) capabilities and complementary resources, such as marketing and distribution resources, are the main facilitators of innovation (PHOJOLA, [sd], p. 10). This innovation process causes a rapid change in technology and this increases the speed of technological diffusion in the world. (BETTIS AND HITT 1995). Another factor that contributed to globalization was the volume generated in domestic markets due to the competitive level of R&D (Research & Development) that was no longer supported and, therefore, generated the need to search for an international market. (PANGARKAR, 2008, p. 3).

In developed countries it is admitted that the degree of technology and investments in research are higher, so they have a greater capacity to compete internationally. Therefore, it is

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admitted that innovation in a developing country is positively related to the level of capital imports from developed countries.(SCHNEIDER, 2017, p. 7).

The vast majority of firms analyzed in their level of innovation, implies the introduction of products or technologies that already exist in the market, they are in most cases “follower” firms and only a few firms have an effective capacity to produce products that are new in the market. national and international market for (PARRILLI; ELOLA, 2012, p. 8). Therefore, this would definitely be a differentiator for companies that are migrating globally.

III. Information Technology

Productivity is decisive for the success of a business, especially when thinking about small and medium-sized companies. Thus, combining the appropriate use of information technology in small and medium-sized companies can be responsible for generating several benefits, such as increased continuity, improved controls and even conditions to provide greater understanding of the productive functions.(OSPINA, 2004, p. 9). Therefore, there is no doubt that it is essential that systems provide accurate information to administrators, who, in turn, can draw up plans to meet their objectives.(OSPINA, 2004, p. 11).

However, the Information Technology management practices are often weak ((CRAGG 2002, HICKS, CULLEY and MCMAHON, 2006, p. 34). In a way, such information is not so surprising, after all, most SMEs they are poor in financial resources, in addition to having limited technological knowledge, still making them reluctant or unable to seek the professional inputs needed to expand knowledge in this area ((THONG 2001). Thus, most SMEs do not have their own IT department. information technology, which hinders the internationalization process of these companies(CRAGG; MILLS; SURAWEERA, 2013, p. 14).

In addition to the cost already mentioned above, small and medium-sized companies also face other problems, such as the cost of development, the expected revenue from changes and especially the time due to the dynamism that SMEs suffer, the implementation and development of a new system can't take too long (OSPINA, 2004, p. 16; SEBRAE, 2016).

Having overcome the problems of time and money, another barrier encountered by small and medium-sized companies is the quality of the system implemented, after all, the information system must be adequate to the needs of the company. (OSPINA, 2004, p. 17).

3. Research method

I. Search Classification:

The research is a literary review, since data from other works in the same area were observed for the construction of this article. In addition, this review has qualitative and applied aspects, as it is a work with historical data that can be read and applied by small and medium entrepreneurs in the internationalization process of their respective companies.

II. Research Procedures:

The research was developed by undergraduate students in the Applied Scientific Methodology course at the University of Brasília over a semester and data were collected on technology and small and medium-sized companies for the construction of the article.

5. Conclusion

As was observed throughout the work, the importance of the performance of companies outside their countries of origin has generated interest on the barriers that are imposed to carry out this process and one of its main barriers would be the degree of technology that firms have in general, therefore, the study was directed to this area in order to observe how the degree of technology of the countries of origin of the companies impacted on breaking these barriers and helped in the process of making their firms international.

Therefore, after collecting and studying data presented throughout the work in order to answer the research question presented, the conclusion of the article is that developed countries, which consequently have a higher degree of technology than developing countries, carry out the the internationalization process of its small and medium-sized companies with greater ease, since it is admitted that technology increases the production of a certain firm and reduces its costs, making the accounting profit and economic profit generally positive. In

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addition, another determining factor for the internationalization process is the amount of investment in information technology, as this area of technology is directly linked to the firm's organizational planning process, which, in turn,

Finally, it is observed that one way to increase the internationalization flow of small and medium-sized companies in developing countries is to import technology from developed countries, as this generates greater innovation and, consequently, an increase in the degree of technology, starting the cycle to act beyond the domestic market, resulting in a transfer of economic resources from the new markets to the national market.

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