A Study on the Internationalization Barriers to Incubated Companies: Defining the Constructs to Develop an Effective Research Instrument

João Florêncio da Costa Junior  
Master's Degree in Production Engineering  
Graduate Program in Production Engineering at UFRN / Natal-RN, Brazil  
E-mail: jfcj1977@googlemail.com

Eric Lucas dos Santos Cabral  
Master's degree in Production Engineering  
Graduate Program in Production Engineering at UFRN / Natal-RN, Brazil  
Technology Center, Department of Production Engineering, Natal / RN, Brazil  
E-mail: ericlucascabral94@gmail.com

Wilkson Ricardo Silva Castro  
Master's Degree in Production Engineering  
Graduate Program in Production Engineering at UFRN / Natal-RN, Brazil  
Technology Center, Department of Production Engineering, Natal / RN, Brazil  
E-mail: wilkson.rsc@gmail.com

Davidson Rogério de Medeiros Florentino  
Master's degree in Production Engineering  
Graduate Program in Production Engineering at UFRN / Natal-RN, Brazil  
E-mail: davidsonflorentino@gmail.com

Renêr Ribeiro Taveira de Souza  
Universidade Federal do Rio Grande do Norte  
Technology Center Graduation in Production Engineering (UFRN)  
E-mail: rener1203@gmail.com

Francisco de Cássio de Oliveira Mendes  
Master's Degree in Technological Management and Innovation in Health from the Federal University of Rio Grande do Norte (UFRN)  
Researcher of the Laboratory of Technological Innovation in Health (LAIS / UFRN) in subjects of informatics in health with focus on medical images; Head of the Diagnostic Imaging Center (CDI) of the University Hospital Onofre Lopes (HUOL)  
E-mail: cassiohuol@gmail.com

Júlio Francisco Dantas de Rezende  
Ph.D to Business at Universidade Federal do Rio Grande do Norte (UFRN),  
Professor, Graduate Program in Production Engineering at UFRN / Natal-RN, Brazil  
Department of Production Engineering – DEP/UFRN  
Av. Sen. Salgado Filho, 3000 - Campus Universitário, 59072-970 - Natal/RN  
Tel/fax: +55-84-3086-0204  
CV: http://lattes.cnpq.br/7433758989886841  
E-mail: juliofdrezende@hotmail.com
Abstract

Due to the global economic, political and technological transformations of the last decades, there is a constant need for companies and entrepreneurs to seek the internationalization of their business models as a strategy of expansion and survival. Such internationalization imperative is not restricted to large businesses only, having also a direct impact on SMEs’ strategy and operations. Business incubators have a seminal role within this process, as they act both to protect and accelerate new businesses, offering alternatives to increase competitive advantage through international expansion. The present article endeavours to understand the different facets related to the internationalization of incubated companies, especially the internationalization barriers associated with the phenomenon, in order to identify the main constructs necessary to develop a research instrument that could be used to identify and study the internationalization barriers to incubated companies. The research was primarily documental and exploratory, following a content analysis approach as to allow for the codification of results and the definition of categories, examining the constructs in a replicable and systematic manner and identifying their relevant phenomena, objects and attributions. As a result of this, four key interrelated constructs were identified and categorized: Strategic Management of Internationalization, Business Incubators Management, Internal Barriers (Operational Barriers) and External Barriers; thus, offering a robust framework to build a research instrument that could be used to the development of a greater and more detailed understanding about the internationalization barriers to incubated companies.

Keywords: Internationalization, Internationalization Barriers, Business Incubators

1. Introduction

Due to the global reality of constant transformations and increased competitiveness, in which organizations become progressively more dynamic and innovative; there is a constant need for companies and entrepreneurs to find alternatives to internationalize their business models as a strategy not only of expansion, but also survival (Kotler and Armstrong 1993; Axinn and Matthyssens 2002; Gjellerup 2000).

This reality is imperative not exclusively to large corporations, but also to small and medium enterprises that can no longer rely on their local market to guarantee their existence neither have the competitive advantages of large scale organizations, thus being prone to encounter several physical and cultural barriers within and without the internationalization process (Kahiya 2013; Zimmerer and Scarborough 2008).

Business incubators have a seminal role in the internationalization process of incubated companies, offering to entrepreneurs the tools, know-how and facilities for international development and expansion as to accelerate growth in a sustainable way. In Brazil, incubation affects positively the internationalization process, as around 10% of incubated businesses do internationalize, which is considerably higher than the average 2% of non-incubated SMEs that follow that path (Engelman et al. 2015; Theodorakopoulos et al. 2014).

Therefore, the present article proposes to identify the main constructs necessary to develop a research instrument that could be used to analyse the internationalization barriers to incubated companies. The authors acknowledge the importance of understanding the different barriers that make internationalization a challenge in order to optimize the social and economic contributions of SMEs to society and to guide public policy to support internationalization and entrepreneurship (Kasabov 2015; Schwartz, 2008; Bell et al 2001; Madsen 1997).
2. Internalization – Concepts and Theories

Given the complexity and scope of the internationalization phenomenon, there is an abundance of theories that seek to explain the phenomenon of internationalization presenting the most different perspectives. However, it is possible to summarize them in two essential approaches: one focused on the economic criteria, that is, on the maximization of resources and profit and another on a more subjective cultural/behavioural approach, which explains internationalization as a process of risk mitigation (Knight and Liesch, 2016; Andersen and Buvik 2002).

Both approaches are valid and to some extent interrelated, converging towards the central point relative to the conceptualization of internationalization which is the rate of involvement of a given organization in the international market (Johanson and Kao 2010; Johanson and Vahlne, 1977).

The Uppsala Model – the most traditional approach – adopts a method focusing on different degrees of uncertainty and information, pointing the steps to the internationalization process as incremental stages, arguing that domestic experience precedes the expansion to foreign markets, which are primarily chosen by focusing on countries geographically and culturally close to the country to which the company belongs, moving only then to more distant cultures and geographies (Jones and Coviello, 2005; Johanson and Vahlne 1977). The process is characterized by the constant uncertainty that needs to be mitigated by the rationalization of corporate decisions based on the accumulation of experience. The process becomes organic after its inception, that is, it tends to grow and become more complex if strategic decisions based on long-term prospects and present performances are favourable (Knight and Liesch, 2016; Johanson and Vahlne 2009).

The Uppsala Model also defines the essential abilities for the managers to succeed in internationalizing their organization, despite the evolution of the concept, those basic abilities remain seminal for the success of the internationalization process: a) Knowledge management – strategic and operational competencies; b) Learning culture – the company needs to adopt a continuous and systematic teaching-learning approach, focusing on cooperation and knowledge sharing; c) Gradualism and incrementalism - time and process management; d) Commitment - the level of the organization's involvement with internationalization; e) Social skills - the skills needed to interact with different cultures and markets, mobilizing change and creating new partnerships (Knight and Liesch 2016; Johanson and Kao 2010; Pessoa et al 2008).

Gankeman et al. (2000) argue that within the gradualist approach there are five distinct stages of the internationalization process, these stages, given the ideal conditions, progress linearly: a) Focus on domestic markets; b) Pre-export stage (research phase and opportunity evaluation); c) Experimental export (only a small portion of production); d) Active involvement (the strategy of increasing sales through export becomes central to the company's growth strategy; and e) Committed involvement (the company relies heavily on the foreign market, the export/sales ratio is above of 40%).

From the Uppsala model, several concepts have been developed, taking different approaches and focusing on different specificities to analyse the internationalization phenomenon. Many authors argue that internationalization is a process focused on an innovation model – I-models; that is, they kept the initial understanding of internationalization as a gradual process but have expanded its understanding as a process of strategic and operational innovation, internationalization and innovation, therefore, are not entirely distinct in a conceptual level (Bilkey and Tesa 1977; Cavusgil 1980; Welch and Luostarinen 1988; Reid 1981; Czinkota 1982; Andersen 1993; Leonidou and Katsikeas 1996).

Some authors direct their studies to the growing involvement of the organization operations into the process of internationalization. From local to foreign markets but also from foreign to local, thus taking into account many more factors than product sales (Welch and Luostarinen 1988).

Other authors concentrate their studies on the growth of foreign direct and indirect investment in international transactions (Calof and Beamish 1995). Resource allocation on international activities...
mobilization, accumulation and development – also offers a different approach to study internationalization (Ahokangas 1998).

Networking is considered by many as the fundamental aspect in the study of internationalization; it is understood as a phenomenon of continuous and systematic establishment of business relationships on an international level, making use of extension, penetration and integration in order to meet organizational goals (Johanson and Mattsson, 1988; Johanson and Vahlne 1990; Korsakiené et al. 2015).

Despite the variety of theories and models to study internationalization, it is a phenomenon that does not fit well predetermined categories of ideas, as it may occur in a very different manner depending on the nature of the company or the market to which it belongs. The swift changes in the global business environment of recent years, the new realities of mergers and acquisitions, the global nature of competition and the influence of the information revolution on consumer behaviour have had a strong impact on the internationalization process of most companies around the world. The incremental model as well as the study of internationalization based on a restricted number of aspects is increasingly obsolete, even for SMEs. In other words, a growing number of companies are internationalizing their processes rapidly, some even emerging from an international business model, seeking a superior international performance and focusing on a strategy of global expansion in which knowledge is their main resource, those companies can be classified as born global (Knight and Liesch 2016; Gabrielsson et al 2008; Axinn and MatthysSENS 2002; Chang 2011; Wood et al. 2011; Mort et al. 2012; Knight: Cavusgil 2004).

It seems that the most prominent feature of new organizations is their immediate international character, contrary to what occurred with enterprises just some decades ago; such phenomenon demands the analysis of its driving forces, its impact on knowledge and innovation management as well as the understanding of how to measure the performance of organizations and their impact upon society from the born global perspective (Knight: Liesch 2016; Gabrielsson et al. 2008; Madsen et al. 1997; Mcdougall et al. 2003).

Around 20% of new businesses in the European Union were composed of born global organizations with projections that it could reach over 40% before 2020; however, in some locations such as Belgium, Denmark and Romania, those figures rose up to 50% (Eurofound, 2012; OECD, 2013).

Theory and research on born global organizations are still in their initial stages, they are rather incomplete, focused on exploratory and descriptive analyses, without robust theories (Knight and Liesch 2016; Santos, 2015; Clerk et al. 2012; Jones et al. 2011). Nonetheless, as a guide for the initial comprehension of the phenomenon, it is possible to argue that born global organizations have several distinctive qualities such as:

- They tend to be SMEs that go through rapid internationalization due to their unique expertise (Ries, 2011; Bell et al. 2001).
- One of their main competitive advantage is the possibility of using multiple sales channels (Agostinho et al., 2015; Oviatt and Mcdougal 1994).
- Companies in which the strategic vision of globalization and internationalization is part of their corporate mission (Blank, 2013; gabrielsson et al., 2008).
- Their marketing model has the essential trait of seeking to create new opportunities through innovative and personalized products (Blank, 2013; Mort et al., 2012).
- Their networking process is centred on foreign direct investments, which are their main access point to strategic assets (Agostinho et al., 2015; Chen and Chen, 1998).
- High level of failures – 50% to 75% – given that they are high-tech start-ups that need to achieve a feasible scalable model to remain relevant internationally (Stayton and Mangemati 2016; Burke and Morley 2016; Marmer et al 2011; Ries 2011; Giardino et
Their CEOs and founders are culturally prone to internationalization, having personal business or academic international experience which leads them to become less averse to the risks intrinsic to that process (Knight and Liesch 2015; Luostarinen and Gabrielsson 2006; Mcdougall et al., 2014; Mtegaughety et al., 2011).

• The entrepreneurs reasoning process is effectual, not causal, focusing on a perspective of strategy as a flexible response to the availability of resources (Sarasvathy, 2009; Harms and Schiele, 2012, Nummela et al., 2014).

Notwithstanding such idiosyncratic traits, the barriers the born global organizations face throughout the internationalization process are quite similar to the challenges faced by traditional organizations such as lack of resources (capital, experience and networks); problems with the innovation process (agravated by the lack of resources for R&D) and also lack of brand awareness in the market, they are not known even in their own country (Stayton and Mangemati 2016; Gabrielsson et al 2008; Knight and Cavusgil 2004; Rennie 1993; Moen and Servais 2002).

2.1. Barriers to the Internationalization Process

It is a fact that the barriers to the internationalization of companies, even SMEs, have been reduced considerably thanks to the globalization of the economy. Nonetheless, they remain multifaceted and to a certain extent, due to the capital limitations of SMEs, in certain circumstances virtually unsurmountable (Narayanan 2015; Andersson and Evers, 2015; Anderson et al 2013; Liesch et al. 2011; Hollenstein 2005).

The most basic classifications about internationalization barriers is related to their nature, they can either be internal – managerial and resource barriers – or external, related to institutional elements that are completely outside the entrepreneurs’ control on a political, geographical, legal, economic, environmental and cultural level (Cahen et al, 2016; Sekliuckien, 2013; Paunovic and Prebezac, 2010).

On comparing traditional companies with born global companies Kahiya (2013) has pointed that in the current literature there is 42 barriers, the 10 most prominent based on the number of studies are the following: (1) Competition in foreign markets, (2) language and cultural barriers; (3) foreign exchange risk, (4) location of distributors, (5) lack of government support, (6) working capital financing, (7) lack of flexible / skilled labour, (8) documentation requirements for exporting (9) identification of foreign markets, (10) Collecting and transfer of funds.

The importance of those factors tends to vary according to the intrinsic characteristics of a given company or market, nonetheless, it is possible to argue, based on the academic consensus that constant legislation changes and high taxation are the main external barriers whereas the main internal barriers are related to the lack of initial capital and working capital as well as human resources limitations (Hessels and Parker 2013).

For SMEs the situation is rather more complex, as the lack of time for strategic thinking, the weight of perceived barriers on the managerial top echelon, the little or no experience of employees and management with foreign markets, the high promotion costs and the sometimes poor availability of information about external markets constitute further barriers to the internationalization process (Shoham and Albaum 1995; Aaby and Slater 1989; Shaw and Darroch 2004; Xie and Suh, 2014;
Brambilla et al., 2012; Love and Roper, 2015; Toulouva et al. 2015). The main barriers and strands of thought are summarized on Table 1:

**Table 1: Barriers to Internationalization**

<table>
<thead>
<tr>
<th>Type of Barriers</th>
<th>Variations</th>
<th>Authors analysed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of non-financial resources</td>
<td>Lack of human resources, Lack of trained R&amp;D personnel, Lack of information about external markets, Inadequate sales channels, Lack of access to new technologies</td>
<td>Engelman et al. (2015); Charry et al. (2016); Coviello and McAuley (1999); Dana (2004); Matlay and Mitra (2004); Eriksson et al. (1997); Mayer and Skak (2002); Hollenstein (2005); Rialp and Rialp (2001); Toulouva et al. (2015); Hessels and Parker (2013); Zimmerer and Scarborough (2008); Singh et al. (2010); Ahokangas (1998); Kahiya (2013); Kahiya, (2017).</td>
</tr>
<tr>
<td>Financial restrictions</td>
<td>Inadequate funds, Difficulty in getting government credit, Long and complicated processes to get bank credit, Little access to FDI, Low working capital</td>
<td>Ray and Neck (2007); Harvie (2008); Harvie and Lee (2002); Eriksson et al. (1997); Mayer and Skak (2002); Hollenstein (2005); Rialp and Rialp (2001); Chen and Chen. (1998); Paunovic and Prebezac (2010); Zimmerer and Scarborough (2008) ; Singh et al (2010).</td>
</tr>
<tr>
<td>Low entrepreneurial orientation</td>
<td>Non-entrepreneurial attitude (risk aversion and reliance on government subsidies), Absence of risk mitigation strategies, Resources allocated exclusively in the exploitation of the internal market</td>
<td>Kahiya (2013); Kahiya (2017), Shepherd; Wiklund (2005); Zahra and George (2002); Jones et al. (2011); Rashid and Tan (2002); Alvarez and Busenitz (2001); Autio et al., (2000); Ghauri and Tesfom (2003); Paunovic and Prebezac (2010); Drucker (2011); Matanda and Freeman (2009).</td>
</tr>
<tr>
<td>Managerial restrictions</td>
<td>Difficulty in gaining the stakeholders’ trust, Lack of expertise in the area, High turnover rates, Time constraints on strategic planning, Lack of an international expansion strategy, Poor budget planning</td>
<td>Benzing et al., 2009; Hashim and Hassan (2008); Stayton and Mangemati (2016); Marsden and Forbes (2003); Beaver (2007); Love and Roper (2015); Toulouva et al. (2015); Paunović and Prebežac (2010); Hessels and Parker, (2013); Rashid and Tan (2002); Alvarez and Busenitz (2001); Autio et al., (2000); Ghauri; Tesfom (2003); Ojasalo, (2011). Drucker (2001), Majocchi et al (2010), Porter (2008); Matanda; Freeman (2009).</td>
</tr>
<tr>
<td>Cultural distances</td>
<td>Cultural barriers, Language restrictions, Religious differences, Problems with leadership and management styles</td>
<td>Rashid and Tan (2002); Calof and Beamish (1995); Dana (2004); Toulouva et al. (2015); Johanson and Vahlne (1990).</td>
</tr>
<tr>
<td>Physical distances</td>
<td>Precarious infrastructure, High travel costs, Logistical and transportation barriers</td>
<td>Toulouva et al. (2015); Johanson and Vahlne (1977); Calof and Beamish (1995).</td>
</tr>
<tr>
<td>Low level of international networking</td>
<td>Low international recognition, Restrictive Benchmarking, Failures in the development, identification and communication with customers,</td>
<td>Agostinho et al (2015); Kasabov (2015); Ghauri and Tesfom (2003); Hashim and Hassan (2008); Zain and Ng, (2006); Coviello and McAuley (1999); Coviello and Munro, (1997); Chetty et al. (2000); Johanson and Kao</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors.

There is a consensus in the academic community that points out to effective networking as an essential element to overcome many of those barriers and, on the other hand, lack of networking as a pervasive factor that increments the natural difficulties of the existing barriers for isolating the companies in their internal markets, leaving them vulnerable to predatory competition (D’angelo et al. 2013; Schweizer 2013; Agostinho et al., 2015; Wallin et al. 2015; Ghauri 2003; Hashim and Hassan, 2008; Ojala, 2009; Zain and Ng, 2006).

Despite the SMEs’ ability to respond more promptly to external changes due to their dynamic decision marking structure and natural facility to networking, those organizations struggle to overcome specific barriers usually related to human and financial resources. Thus, the size of the company may be considered barriers or a driving force for internationalization, depending exclusively on other factors such as entrepreneurial competence, access to external resources, effective networking and strategic planning (Korsakiene and Tvaronaviciene 2012; Toulova et al. 2015; Hutchinson et al. 2006).

3. Business Incubators
There are well over 7000 business incubators in the world, almost 2000 only in the United States and around 1000 in Europe. Such numbers could increase dramatically depending on the concept of business incubator utilized in the analysis. In Brazil, there are about 370 active business incubators, raising more than 2300 companies with over 200 graduated companies, generating over 50,000 jobs (Al-Mubarak and Busler, 2014; Engelman et al. 2015; Chandra and Fealey 2009)

Business incubators are essentially a structure of resource sharing – office facilities, knowledge sharing, access to networking, monitoring, technical support and training – that foment the creation and development of SMEs in general and born global start-ups in particular (Tzafestas 2018; Engelman et al 2015). Their raison d'être lies on the control and support that occur during the incubation periods in order to facilitate the consolidation process of the companies and reduce the mortality rate – from around 70% to slightly over 20% – providing the development of competitive advantage for SMES (Silva et al 2013; Aunović and Prebežac 2010; Etzkowitz 2008; Dias, 2007).

Business incubators contribute to the sustainability of companies by training, resource sharing and network optimization, all three elements that are vital for the development of the internationalization process which is a becoming an imperative for companies to survive, especially high tech companies (Paunović; and Prebežac2010; Zimmerer and Scarborough; 2008).

The evolution of business incubators is patent in the development of their core activities and the range of value added services, following the dynamics of the market in terms of competitiveness, internationalization and new business models (Bruneel et al. 2012; Mian et al, 2016). Table 2 resumes the different generations of business incubators, their nature, focus and services:

Table 2: Different Generations of Business Incubators – Nature, Focus and Services

<table>
<thead>
<tr>
<th>Nature</th>
<th>Focus</th>
<th>Services</th>
</tr>
</thead>
</table>
| 1st Generation | Facilities and infrastructure | • Spaces with subsidized costs.  
• Shared facilities - meeting room, auditorium, cafeteria, etc.  
• Telephone, internet, secretarial services, etc. |
Most of the services provided from the second generation onwards can and should be integrated into strategic actions directed to the process of internationalization. Services related to networking should have no boundaries and their main objective should lie in reducing the limitation of geographic barriers. Over 50% of the European incubators give direct support to the internationalization process through technical training and networking development, focusing on exporting and business partnerships. Business incubators are gradually becoming centres of knowledge dissemination and business internationalization (Engelman et al. 2015; Mian et al. 2016; Aerts et al. 2007).

Following that trend, it is possible to point out to the main constructs related to the services of incubators that contribute to the internationalization of incubated businesses, bringing out key performance indicators (Engelman 2015). Such constructs are summarized on Table 3:

**Table 3:** Constructs, Factors and Services Associated with the Actions of the Incubators that Contribute to the Internationalization and Competitiveness of Incubated Companies

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Factors</th>
<th>Related Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurs</td>
<td>• International Focus</td>
<td>• Digital tools for business creation and growth management</td>
</tr>
<tr>
<td></td>
<td>• Tolerance to risk taking</td>
<td>• Stimulation of technology transfers</td>
</tr>
<tr>
<td></td>
<td>• Ability to mitigate risks</td>
<td>• Support through HR technologies</td>
</tr>
<tr>
<td></td>
<td>• Proactivity</td>
<td>• Basic and advanced training in entrepreneurship</td>
</tr>
<tr>
<td></td>
<td>• Ability to coordinate activities globally</td>
<td>• Career Counseling</td>
</tr>
<tr>
<td></td>
<td>• Industry experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• International experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• International experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Resource allocation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Skilled labor</td>
<td></td>
</tr>
<tr>
<td>Organizational</td>
<td>• International Mission</td>
<td>• I.T. Structure</td>
</tr>
<tr>
<td>Characteristics</td>
<td>• Innovative products and services</td>
<td>• Shared physical structure (auditorium, meeting room, etc.)</td>
</tr>
<tr>
<td></td>
<td>• Differentials and unique features</td>
<td>• Organizational Development Consulting</td>
</tr>
<tr>
<td></td>
<td>• Multiple sales channels</td>
<td>• Facilities with subsidized costs</td>
</tr>
<tr>
<td></td>
<td>• Emphasis on innovation</td>
<td>• Training to build a digital culture</td>
</tr>
<tr>
<td></td>
<td>• Emphasis on marketing</td>
<td>• Shared resources strategy</td>
</tr>
<tr>
<td></td>
<td>• Emphasis on quality</td>
<td>• Virtualization of services</td>
</tr>
<tr>
<td></td>
<td>• International strategies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Resource allocation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Skilled labor</td>
<td></td>
</tr>
</tbody>
</table>

Source: Created by the author based on Mian et al. (2016); Engelman et al. (2015); Bruneel et al., (2012), Abduh et al. (2007); Bollingfort and Ulhoi (2005)
Network
• National networks
• International networks
• Technology transfers
• Access to angel investors and seed capital
• Facilitating access to credit and investors
• Marketing aimed at attracting new talents
• Association and network with external businesses and research bodies

External markets
• Characteristics of the global environment
• Specific market characteristics
• Megatrends
• Intensive Technology Vs. regional development
• Born globals Vs. Traditional SMEs
• Contacts with international incubators
• Research on external and internal market trends
• Follow-up of graduated companies
• Formation of international partnerships
• Training focused on matters of relevance (export, budget planning, languages, logistics, etc.)

Source: Adapted from Engelman et al. (2015), Charry et al (2016); Mian et al. (2016), Ahmad, 2014; Bruneel et al., (2012); Etzkowitz, (2002)

3. Research Method
Given the business related nature of the research, the authors followed the precepts highlighted by Saunders et al. (2016), seeking to identify primary, secondary and tertiary sources. Thus, Scopus/Embase, Web of Science, Periódicos Capes/MEC, Google Academics and SciFinder were analysed on March 2, 2018 for relevant literature both in English and Portuguese. The following search terms were utilized: “Internationalization”, “Internationalization Barriers” and “Business Incubators”.

Titles and abstracts were revised by the authors in order to identify the studies that brought relevant information to address the research objective. Following the initial screening, the relevant articles were analysed following a content analysis approach (Bardin, 2011), leading to the codification of results and the definition of categories, examining the constructs in a replicable and systematic manner. It was noted that the articles selected fit into four main themes: (1) Internationalization models – characteristics and limitations; (2) Barriers to internationalization; (3) Born global enterprises/Startups; (4) Internationalization of SMEs; (5) Innovation management; (6) Network management. It is important to notice that most articles fit into more than one of those categories as they are profoundly interlinked.

The resultant definition and validation of the constructs followed several methodological steps – presented as questions and answers on Table 5 – as to determine their conceptual and logical rigour.

Table 4: Construct Validation

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The process of identification of the construct occurred through the definition of phenomenon, object and attribute?</td>
<td>• Yes, the analysis and development of the construct followed that logical order. See tables 6, 7, 8, and 9.</td>
</tr>
<tr>
<td>• Is the universe to which the construct refers clearly defined?</td>
<td>• Yes, each construct refers to a specific universe identified in the research.</td>
</tr>
<tr>
<td>• Are the constructs based on some theory?</td>
<td>• Yes, all constructs were developed to address the relevant theories studied.</td>
</tr>
</tbody>
</table>

Source: Adapted from Chapa and Stringer (2013); Bryman and Bell (2011); Bardin, (2011).
5. Results

Based on the research undertaken, it is feasible to argue that in order to develop a research instrument able to aid in the identification and measurement of the barriers to the internationalization of incubated companies, it is necessary to focus on 4 interrelated constructs, each carrying particular phenomena, objects and attributes that are profoundly interconnected.

The first construct is related to the phenomenon of the Strategic Management of Internationalization, having as objects economic, cultural and managerial criteria as seen in the relevant literature. Their attributes are directly related to the strategic management response to internal and external barriers, to the driving forces that compel internationalization and to the effectiveness of the networking undertaken by their leaders. The key element of the construct is the inter-relation of the strategic management to these internal and external attributes and how that can affect the internationalization process. Table 5 specifies the phenomenon, objects and attributes related to the construct as well as the main authors studied:

Table 5: Construct 1 – Strategic Management of Internationalization

<table>
<thead>
<tr>
<th>Object</th>
<th>Attribute</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Criteria</td>
<td>Global Demand</td>
<td>Agostinho et al., (2015); Drucker (2011); Andersen and Buvik (2002); Axinn and MatthysSENS (2001); Chang (2011); Kotler and Armstrong (1993); Gjellerup (2000); Ernst and Young (2015); Andersson and Evers (2015); Anderson et al. (2013); Liesch et al., (2011).</td>
</tr>
<tr>
<td>Economic Criteria</td>
<td>International Competition</td>
<td>Agostinho et al (2015); Zimmerer and Scarborough (2008); Wattanasupachoke (2002); Ball et al (2004); Oslo (2012); Axinn and MatthysSENS: (2001); Chang: (2011); Ernst and Young, (2015); Andersson and Evers (2015); Anderson et al (2013); Liesch et al (2011).</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>Networking Planning</td>
<td>Johanson and Mattsson (1988); Johanson and Vahlne, (1990); Coviello (2006); Vapol (2011); Soderqvist (2013); Agostinho et al (2015); Kasabov (2015); Ghauri and Tesfom (2003); Hashim; Hassan (2008); Zain and Ng (2006); Coviello and McAuley (1999); Coviello; Munro, (1997); Chetty et al (2000); Johanson and Kao (2010); Wallin et al (2015); Hashim; Hassan (2008); Ojala and Ojala (2009); Zain and Ng (2006) Camison; Villar-Lopez (2010).</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>Multiple Sales Channels</td>
<td>Oviatt and Mcdougall (1994); Wallin et al., (2015); Lutz et al., (2010); Bartkus, (2010); Coviello and McAuley (1999); Dana, (2004); Matlayand Mitra (2004); Rashid and Tan, (2002).</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>Adequacy of the Organizational Structure for the External Market</td>
<td>Engelman and Fracasso (2012); Engelman et al (2015); Hofsted, (2010); Oviatt and Mcdougall (1994); Toulouva et al (2015); Rashid and Tan, (2002);</td>
</tr>
<tr>
<td>Cultural Criteria</td>
<td>Consumers’ behaviour</td>
<td>Andersen and Buvik (2002); MatthysSENS (2001); Kotler and Armstrong (1993), Drucker (1977); Cuervo-Cazurra, (2007); Gassmann and Keupp; (2007); Barney; (1991)</td>
</tr>
<tr>
<td>Cultural Criteria</td>
<td>Cultural Proximities</td>
<td>Waswoska, 2016; Chinta et al., 2015; Gabrielsson (2004); Johanson and Vahlne (1977; 2009); Andersen and Buvik, (2002); Bilkey; Tesar, (1977); Cavusgil, (1980); Czinkota, (1982); Reid, (1981).</td>
</tr>
</tbody>
</table>
The second construct is related to the phenomenon of the business incubators management, having as objects their strategic positioning in relation to the internationalization imperative and networking management, focusing on attributes related to their services, nature and structure. Given that the vast majority of business incubators in Brazil belong to public institutions of high education, it was chosen to leave out the construct objects related to financial performance – costs and profitability. Details can be seen on Table 6:

<table>
<thead>
<tr>
<th>Object</th>
<th>Attribute</th>
<th>Authors</th>
</tr>
</thead>
</table>
The third construct is related to phenomenon of internal and operational/managerial barriers. Their objects are intimately related to the first construct of strategic management internationalization; however, they are conceptually distinct, focusing on resource restrictions, specifically, inappropriate workforce and operational barriers within the organizations. They look at similar problems from a different angle, emphasizing the need for process and resources optimization. The detailed construct can be seen on Table 7:

**Table 7: Construct 3 – Internal (Managerial and Operational) Barriers**

<table>
<thead>
<tr>
<th>Object</th>
<th>Attribute</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incubators Management</td>
<td>Consulting Services, Counseling, Research and Training</td>
<td>Charry et al. (2016); Engelman and Fracasso (2012); Anprotec (2016); Engelman et al. (2015); Mian et al. (2016); Schwartz (2008); Bruneel et al. (2012); Gans and Stern (2003); Warren et al. (2009); Phan et al. (2003); Rice (2002); NBIA (2014); Ahmad (2014); Bergek and Norman (2008).</td>
</tr>
<tr>
<td>Incubators Management</td>
<td>Focus on International Quality Standards</td>
<td>Charry et al. (2016); Barahona (2016); Engelman and Fracasso (2012); Engelman et al. (2015); Mian et al. (2016); Schwartz (2008); Mian (2011); Barbero et al. (2012) Hoffman et al. (2010); Bergek and Norman, 2008</td>
</tr>
<tr>
<td>Entrepreneurial Orientation</td>
<td>Recruitment focusing on Entrepreneurial Skills</td>
<td>Charry et al. (2016); Barahona (2016); Dias (2007); Etzkowitz (2008); Engelman and Fracasso (2012); Engelman et al. (2015); Mian et al. (2016); Schwartz (2008); Shah and Pahrike (2014); Coviello and Munro (1997); Coviello (2006); Musteen et al. (2010); Yuan-Chien et al., (2011); Mian (2011); Barbero et al. (2012) Hoffman et al. (2010); Etzkowitz (2002); Baraldi and Havenvid (2016)</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors.
<table>
<thead>
<tr>
<th>Object</th>
<th>Attribute</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource Restrictions</td>
<td>Inappropriate Sales Channels</td>
<td>Wallin et al., (2015); Lutz et al., (2010); Bartkus, (2010); Coviello and Mcauley (1999); Dana, (2004); Matlay; Mitra (2004); Rashid and Tan, (2002)</td>
</tr>
<tr>
<td>Resource Restrictions</td>
<td>Lack of Access to New Technologies</td>
<td>Wallin et al., (2015); Lutz et al., (2010); Bartkus, (2010); Coviello and Mcauley (1999); Dana, (2004); Matlay; Mitra (2004); Rashid and Tan, (2002)</td>
</tr>
<tr>
<td>Low Entrepreneurial Orientation</td>
<td>Negative Attitude (Risk Aversion and Dependence on Government Grants)</td>
<td>Paunović; and Prebežac(2010); Toulova et al (2015); Rashid and Tan, (2002); Alvarez; Busenitz, (2001); Autio et al (2000); Ghauri, (2003); Ojasalo; Jasalo, (2011).</td>
</tr>
<tr>
<td>Low Entrepreneurial Orientation</td>
<td>Attention Aimed Only at the Exploitation of the Internal Market</td>
<td>Paunović; and Prebežac(2010); Toulova et al (2015); Rashid and Tan, (2002); Alvarez and Busenitz(2001); Autio et al (2000); Ghauri, (2003); Ojasalo; Jasalo, (2011).</td>
</tr>
<tr>
<td>Low Entrepreneurial Orientation</td>
<td>Lack of international Experience from the human resources</td>
<td>Paunović; and Prebežac(2010); Toulova et al (2015); Rashid and Tan, (2002); Alvarez and Busenitz(2001); Autio et al (2000); Ghauri, (2003); Ojasalo; Jasalo, (2011).</td>
</tr>
<tr>
<td>Low Entrepreneurial Orientation</td>
<td>Poor Perception of Cost/Benefit and Profitability</td>
<td>Paunović; and Prebežac(2010); Toulova et al (2015); Rashid and Tan, (2002); Alvarez and Busenitz(2001); Autio et al (2000); Ghauri, (2003); Ojasalo; Jasalo, (2011).</td>
</tr>
<tr>
<td>Lack of Competitiveness</td>
<td>Poor Knowledge and Innovation Management</td>
<td>Stayton and Mangematin (2016); Balan; and Lindsay (2007); Freeman and Engel (2007); Jalonen (2013); Knight; Cavusgil (2004); Matlay; Mitra (2004); Ries, (2011); Rogers (2003); Vossen (1998)</td>
</tr>
<tr>
<td>Lack of Competitiveness</td>
<td>Lack of Product Quality (International Accreditations and Reputation)</td>
<td>Bell, (2003); Rashid and Tan, (2002); Ahlstrom et al., (2006); Benzing et al., (2009); Leavit 1963</td>
</tr>
<tr>
<td>Lack of Competitiveness</td>
<td>Logistic Limitations</td>
<td>Toulowa et al.(2015); Johanson and Vahlne (1977); Calof and Beamish (1995); Bell, (2003); Rashid and Tan, (2002); Ahlstrom et al., (2006); Benzing et al., (2009)</td>
</tr>
<tr>
<td>Management Restrictions</td>
<td>Difficulty in gaining the trust of stakeholders</td>
<td>Agostinho et al., (2015); Giardino et al., (2015); Benzing et al., (2009); Hashim and Hassan (2008)</td>
</tr>
<tr>
<td>Management Restrictions</td>
<td>High Turnover Levels</td>
<td>Agostinho et al., (2015); Giardino et al., (2015); Benzing et al., (2009); Hashim and Hassan (2008)</td>
</tr>
</tbody>
</table>
The fourth construct is related to the phenomenon of the external barriers to the internationalization process. Its essential characteristic is to focus on objects that are literally out of the entrepreneurs’ control; however, their potential risks could be mitigated through a strategic planning driven towards internationalization and growth. Their main objects are microeconomic (market) barriers as well as macroeconomic elements – political, legal, technical, social and cultural. Details can be seen on Table 8:

**Table 8: Construct 4 – External Barriers**

<table>
<thead>
<tr>
<th>Object</th>
<th>Attribute</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Restrictions</td>
<td>Different Product / Service Applications</td>
<td>Kasabov, (2015); Paunović; and Prebežac (2010); Sekliuckien, (2013); Ojasalo and Ojasalo, (2011); Fombrun, (1996); Crick, (2002); Kotler and Armstrong (1993)</td>
</tr>
<tr>
<td></td>
<td>Competitive Local Markets</td>
<td>Kasabov, (2015); Paunović; and Prebežac (2010); Sekliuckien, (2013); Ojasalo and Ojasalo, (2011); Fombrun, (1996); Crick, (2002); Johanson and Vahne (1977)</td>
</tr>
<tr>
<td></td>
<td>Different Quality Standards</td>
<td>Kasabov, (2015); Paunović; and Prebežac (2010); Sekliuckien, (2013); Ojasalo and Ojasalo, (2011); Fombrun, (1996); Crick, (2002)</td>
</tr>
<tr>
<td></td>
<td>Monopolistic Markets</td>
<td>Kasabov, (2015); Paunović; and Prebežac (2010); Sekliuckien, (2013); Ojasalo and Ojasalo, (2011); Fombrun, (1996); Crick, (2002)</td>
</tr>
<tr>
<td></td>
<td>Low Quality Local Labour</td>
<td>Kasabov, (2015); Paunović; and Prebežac (2010); Sekliuckien, (2013); Ojasalo and Ojasalo, (2011); Fombrun, (1996); Crick, (2002)</td>
</tr>
<tr>
<td></td>
<td>Difficulty in Adapting the Marketing Mix</td>
<td>Kasabov, (2015); Paunović; and Prebežac (2010); Sekliuckien, (2013); Ojasalo and Ojasalo, (2011); Fombrun, (1996); Crick, (2002); Kotler and Armstrong (1993)</td>
</tr>
<tr>
<td>Political / Governmental Barriers</td>
<td>Trade and Customs Barriers</td>
<td>Adhikari et al., (2006); Paunović; and Prebežac (2010); Sekliuckien, (2013); Kahiya (2013); Kahiya (2017); Narayanan (2015); Ojasalo and Ojasalo (2011); Sekliuckien (2013); Shaw and Darroch (2004); Shoham and Albaum (1995)</td>
</tr>
<tr>
<td></td>
<td>Variation in Country Regulations</td>
<td>Adhikari et al., (2006); Paunović; and Prebežac (2010); Sekliuckien, (2013); Kahiya (2013); Kahiya (2017); Narayanan (2015); Ojasalo and Ojasalo (2011); Sekliuckien (2013); Shaw and Darroch (2004); Shoham and Albaum (1995)</td>
</tr>
<tr>
<td>Political / Governmental Barriers</td>
<td>Complex Legal Restrictions</td>
<td>Adhikari et al., (2006); Paunović; and Prebežac (2010); Sekliuckien, (2013); Kahiya (2013); Kahiya (2017); Narayanan (2015); Ojasalo and Ojasalo (2011); Sekliuckien (2013); Shaw and Darroch (2004); Shoham and Albaum (1995)</td>
</tr>
<tr>
<td></td>
<td>Difficulties in the Transfer of Funds</td>
<td>Adhikari et al., (2006); Paunović; and Prebežac (2010); Sekliuckien, (2013); Kahiya (2013); Narayanan (2015); Ojasalo and Ojasalo (2011); Sekliuckien (2013); Shaw and Darroch (2004); Shoham and Albaum (1995)</td>
</tr>
<tr>
<td>Political / Governmental Barriers</td>
<td>Unstable Governments</td>
<td>Adhikari et al., (2006); Paunović; and Prebežac (2010); Sekliuckien, (2013); Kahiya (2013); Narayanan (2015); Ojasalo and Ojasalo (2011); Sekliuckien (2013); Shaw and Darroch (2004); Shoham and Albaum (1995)</td>
</tr>
<tr>
<td>Political / Governmental Barriers</td>
<td>High Bureaucracy Levels</td>
<td>Adhikari et al., (2006); Paunović; and Prebežac (2010); Sekliuckien, (2013); Kahiya (2013); Kahiya (2017); Narayanan (2015); Ojasalo and Ojasalo (2011); Sekliuckien (2013); Shaw and Darroch (2004); Shoham and Albaum (1995)</td>
</tr>
<tr>
<td>Object</td>
<td>Attribute</td>
<td>Authors</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>---------</td>
</tr>
<tr>
<td>Political / Governmental Barriers</td>
<td>High Taxation</td>
<td>Adhikari et al., (2006); Paunović and Prebežac (2010); Sekliuckien, (2013); Kahiya (2013); Narayanan (2015); Ojasalo and Ojasalo (2011); Sekliuckien (2013); Shaw and Darroch (2004); Shoham and Albaum (1995)</td>
</tr>
<tr>
<td>Physical Distances</td>
<td>Precarious Infrastructure</td>
<td>Toulova et al (2015); Waswoska, 2016; Chinta et al., 2015; Cuervo-Cazurra, 2007</td>
</tr>
<tr>
<td>Physical Distances</td>
<td>High Transportation Costs</td>
<td>Toulova et al (2015); Kahiya (2017)</td>
</tr>
<tr>
<td>Physical Distances</td>
<td>Logistics Barriers</td>
<td>Toulova et al (2015); Kahiya (2013); Johanson and Vahlne (1977); Calof and Beamish (1995)</td>
</tr>
<tr>
<td>Cultural Distances</td>
<td>Lack of Knowledge about Local Culture</td>
<td>Toulova et al, (2015); Rashid and Tan, (2002); Calof and Beamish, (1995); Dana, (2004); Johanson and Vahlne (1977); Johanson and Vahlne (1999); Mejri and Umemoto (2010); Hofstede et al (2005); Zimmerer and Scarborough, (2008); Wattanasupachoke (2002); Ball et al., (2004); Andersen and Buvik, (2002); Axelsson and Johanson (1992); Forsgren et al., (2005)</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors.

6. Conclusion
It is important to point out that the four constructs discussed are not isolated forces within and without the internationalization process, but rather, essentially interrelated phenomena; thus, whilst a preliminary analysis can benefit from studying those constructs separately; a robust and inclusive research instrument must encompass a global analysis of all constructs interrelations.

The present study was carried out to identify the constructs to create a research instrument suitable to analyse the internationalization barriers that incubated companies have to face, thus such research instrument should be not only apt to identify the internationalization barriers from the entrepreneurs’ perspective; but also, to probe into the very competitiveness of the business incubators, recognizing internationalization as a key performance indicator. Moreover, the instrument should be useful as checklist to guide incubators and entrepreneurs alike.

In order to obtain reliable results in future research, it is also necessary to establish some criteria to determine amongst the incubated companies and incubators, which ones are relevant for the study, given that some companies do not offer products/services that can be taken beyond the local market, which would ultimately distort any results reached by the research.

Finally, the criteria for the development of the research instrument should be decided obeying a strict methodological approach, ensuring that que research instrument translates the constructs into the right questions, in logical sequence and in an interrelated manner conducive of obtaining measurable results.
References


[45] ()..


Miller G. (1956). The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information. The Psychological Review, 63, 81-97.


A Study on the Internationalization Barriers to Incubated Companies: Defining the Constructs to Develop an Effective Research Instrument


A Study on the Internationalization Barriers to Incubated Companies: Defining the Constructs to Develop an Effective Research Instrument


A Study on the Internationalization Barriers to Incubated Companies: Defining the Constructs to Develop an Effective Research Instrument


