

The effect of innovation on the internationalization process of nascent business

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Abstract: The internationalization process in nascent business have increasingly received attention from academic research given its more dynamic and less adherent to traditional theories of international business. The literature about international business is contradictory in answer the question: Does internationalization determining innovation, or rather than innovative companies tend to reveal higher levels of propensity for internationalization? The discussion about this question allows to find some gaps in international business literature, that suggest the requirement of new empirical studies, mainly applied to nascent business, where studies are more scarce.

This research tries to answer the question: Will be possible to find a relationship between internationalization and innovation in nascent business? The empirical research is supported in preliminary resource-based model (Rialp, Rialp and Knight, 2005) and tries to investigate the factors affecting the relationship between internationalization and innovation in nascent business. For this purpose, this study uses the data on entrepreneurial activity undertaken by the Global Entrepreneurship Monitor (GEM) to 50 countries, and applied the resource-based model considering seven features (internationalization, innovation, gender, skills, opportunity, country and sector). This comparison between countries in different stages of development was important to better understand and qualify the relation between innovation and internationalization in startups, once crosscountry analysis is relevant for entrepreneurship researches (Anokhin, Wincent, 2012).

The results are curious and contribute to improve theoretical discussion. The empirical study indicates the adherence of the internationalization framework tested since all variables were retained in the final model interactions, and six of nine interactions hold internationalization variable. We observe that although the variables innovation and internationalization are generally positively related, this relation is not uniform and linear. The interactions with the other variables lead to different effects on the internationalization suggesting a greater complexity of the phenomenon. This results discussed in research could contribute to a better explanation of this interrelation, particularly the case of nascent business.

Key Words: Entrepreneurship, innovation, internationalization, international business, gender, nascent business, startups.

1. Internationalization of nascent companies

International trade is a foundation of the global economy (Halabisky, et al., 2005). The internationalization of companies to new markets in several cases produced opportunities for value creation and growth (Lu and Beamish, 2001). Consequently internationalization is considered a process to improve performance and is rapidly conducted in a few cases, such as when they start on a global scale (Oviatt and McDougall, 1994; Knight and Cavusgil, 1996; Rialp et al., 2005). Nevertheless, the benefits of internationalization are not automatic and equal for all companies. Earlier research also highlights that entry mode choice depends on firms' offering (Erramilli, 1990).

Several studies have tried to better define the concept of international new ventures (Gabrielsson et al., 2008; Baum et al., 2011) part of the research on this topic has centered on the drivers of early firm internationalization (Rialp et al., 2005). Numerous factors have been identified as persuading the early internationalization of start-ups (Oviatt and McDougall, 1994; Johnson, 2004; Weerawardena et al., 2007) such as internal firm factors, (i.e., characteristics of the entrepreneurs and firm resources), external factors (i.e., features of the industry and the competitive environment), and facilitating factors. Additionally, Zucchella et al. (2007) argues that location-specific factors, such as presence within a cluster or a district, might positively influence early firm internationalization. Furthermore, Fan and Phan (2007) suggest that economic factors and socio-cultural forces also play an important role in a firm's decision to internationalize.

Early research in the field of international entrepreneurship emphasizes the role of innovation and technology as essential drivers of early internationalization (Oviatt and McDougall, 1994; Knight and Cavusgil, 1996). Additionally numerous studies on incumbent firms – and on small and medium-sized enterprises (SMEs) in particular – indicate that there is a positive relationship between innovation and internationalization at the firm level (Cassiman and Golovko, 2011; Ganotakis and Love, 2011). The research on international entrepreneurship highlights that young firms that internationalize early are typically knowledge intensive with a strong orientation toward innovation and technology. Knight and Cavusgil (1996, p. 11) define born globals as “small technology oriented companies that operate in international markets from the earliest days of establishment”. They are typically mostly associated with “high technology, knowledge based and service intensive firms” (Coviello and Munro, 1997, p. 362). Firms with these features are less constrained by distance and national boundaries and can more flexibly exploit international opportunities (Autio et al., 2000).

The home country of a nascent company is an important variable that has been of significant interest for the crosscountry understanding of entrepreneurship. Anokhin and Wincent (2012) draw upon recent advances in the entrepreneurship literature to suggest that the relationship between start-up rates and innovation is not uniformly positively related, as expected by the early scholars of entrepreneurship. According to these authors, it depends on the country's stage of development. While the relationship is positive in the developed countries, it is negative in less developed countries.

1.1. Internationalization model

This study uses the conceptual model developed by Rialp et al. (2005). This model suggested that several conceptual approaches and models could be found in literature about the companies that intends to internationalize early. Despite this, they refer there was a lack of uniformity or greater consistency due to the fact of the different objectives each study addresses. Thus, 38 studies were reviewed trying to identify and examine the external and internal forces, as well the tendencies behind observable development, continuous growth and greater development of small nascent businesses.

Rialp et al. (2005) identifies among the most common triggers, at least four considered as particularly important:

- New market conditions in various sectors of economic activity (including the growing importance of market niches for small and mid-sized companies throughout the world);
- Technological developments in production, transportation and communication sectors;
- Increase in importance of global networks and alliances;
- More elaborate capacities of personnel, including those of the founder/entrepreneur who begins the early internationalization of firms.

They also revealed that comprehensive theoretical explanations and causal models for the nascent internationalization phenomenon are still lacking and will be important the development of theoretical frameworks of reference in this area. Therefore, the authors present an exploratory model

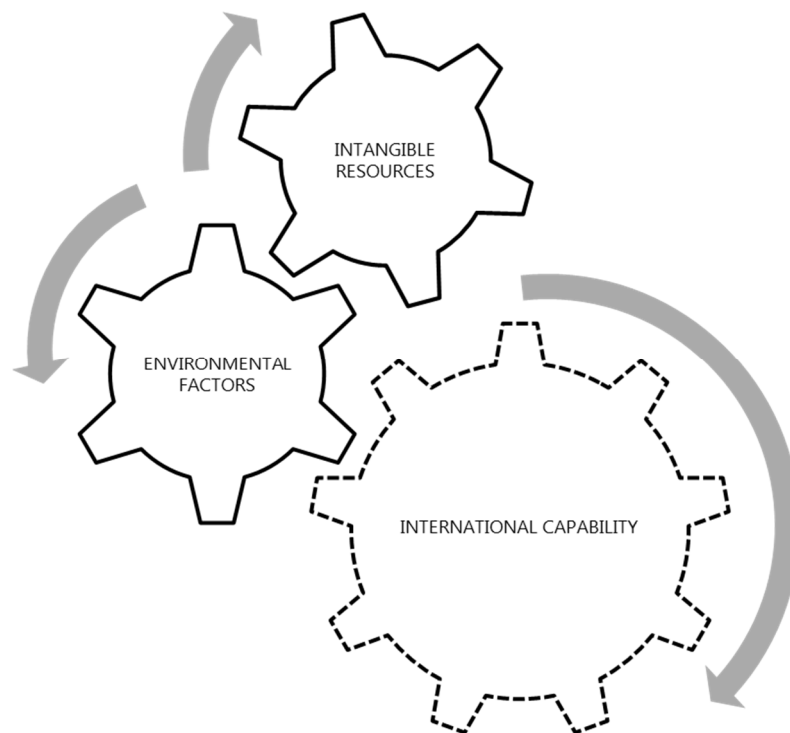
that encompasses existing hypothetical connections between the essential elements of resources and/or knowledge based on firm perspectives, applied to the international scenario of competition, plus the analysis of contemporary literature conducted by authors for developing a more encompassing explanation of the internationalization standard followed.

This model underscores that the company's specific international capacity can be viewed as a strategic asset that is non-observable or "invisible". Basically, it is the result of a mix of mainly immaterial resources that creates complex interactions, and the intensive international routines through which all companies resources are coordinated (Rialp et al. 2005). Thus, two bundles of more recognizable resources sustain this rather intangible capacity, identified in this study by export revenues, as outlined in figure 1:

(1) the basis for a company's intangible resources encompassed of the capital structure (technological, organizational and relational capital) and the human capital given by the entrepreneur's and their team's characteristics, connections and roles. This resource base is of utmost value in generating a critical level of internationalization capacity.

(2) the external environmental resources, such as type of sector, geographic location and interconnections of international networks. Those that in common play a role of moderation in how intangible resources will create the capacity for development, of strategic behavior in nascent companies (accelerated pace, non-gradual extension of internationalization and greater reach of the company's international strategy), attending sustainable competitive advantage abroad.

Figure 1: The Rialp et al. (2005) internationalization model



Source: elaborated by the authors (2014)

2. Research methodology

2.1. Sample

The analysis was based on secondary data, more specifically on the "2009 APS Global - Individual Level Data" of the Global Entrepreneurship Monitor (GEM), which in its previous versions supported the works by Wong et al. (2005) and Aidis et al. (2008), for example.

The GEM currently performs the biggest and most recognized research for studying entrepreneurship activity, with each edition covering more than 50 different countries (Reynolds et al. 2005). Its core activity, on which this study bases itself, is the compilation of individual interviews with

random samples of at least 2000 individuals per country, taken from the entire population at an active age in each participating country. Therefore, it captures the entrepreneurs as well as the non-entrepreneurs (Bosma and Levie 2010).

In the cutout for this study, nascent entrepreneurs were chosen as characterized by the 2009 GEM, based on three questions:

1. Over the past 12 months, have you done anything to help initiate a new business, such as look for equipment or a site; organizing a startup team; working on a business plan; beginning to save money, or any other activity that could help start a business? (Yes, no, don't know/refuse).

2. Will you be the owner of everything, part or no part of this business? (All, part, no part, don't know/refuse).

3. Did the new business pay any salaries, wages or cash payments, including your own, for more than three months? (Yes, no, don't know/refuse).

An individual is coded as a nascent entrepreneur if he or she answers "yes" to question 1, "all" or "part" to question 2 and "no" to question 3. Thus, a nascent entrepreneur for GEM is defined as someone who has, over the 12 months prior to the interview, done anything tangible to begin a new company, who expects to own at least part of that new company and who has not paid salaries for more than three months.

2.2. Variables

As with Langowitz and Minniti (2007), some variables were selected from among those available in the GEM study for constructing a model. Based on what was proposed by Rialp et al. (2005), strategic internationalization capacity (export) was tested according to intangible resources (innov, gender, skills, opport) and environmental factors (sector, country) using the interaction of the following variables:

Table 1: Model variables

Variables analyzed in the model		
Variable	Description	Values
EXPORT	Internationalization: existence revenues derived from exports	0 - no; 1 - yes
INNOV	Innovation: Presence of new technology, new product or new market based on entrepreneur response	0 - no; 1 - yes
GENDER	Entrepreneur's gender	0 - female; 1 - male
SKILLS	Skills: has the knowledge and skills needed to start a business	0 - no; 1 - yes
OPPORT	Opportunity: Entrepreneur activity aimed at identifying an opportunity	0 - no; 1 - yes
SECTOR	Sector: sector's technological level	1 - medium / high technology (M/H tech); 0 - no/low technology (N/L tech)
COUNTRY	Country: headquarters located in a developed country (HDI greater than 0.800) or in a developing/underdeveloped country (HDI less than or equal to 0.800).	0 - developing; 1 - developed

Source: elaborated by the authors (2014).

2.3. Analysis Procedure

In face of the dichotomous nature of the sample's variables, which assumed the format of a contingency table in which each classification is a response variable, the log-linear model was adopted. The log-linear analysis more closely resembles correlation than regression, with a primary focus on the association between variables rather than the modeling of the response for one in terms of the others (Agresti and Finlay 2008). This was especially interesting for this study, since as initially pointed out; it is difficult to observe how the factors combine to generate the capacity to compete abroad.

Log-linear models, or Poisson regression models, are employed to analyze multi-dimensional contingency models, even when the probabilistic model is not a product of Poisson distributions, thus exercising an admirable function in the analysis of categorized data analogous to normal regression

models in the analysis of continuous data (Paulino and Singer 2006). Thus, the log-linear analysis made it possible to identify the mutual influence between tested variables and which are more significant.

First, descriptive statistics was used to characterize the sample. Then, after satisfying the hypothesis with the chi-squared test that there are no expected frequencies under 1, and no more than 20% of the cells had a frequency greater than 5. The effect of the interaction of variables was analyzed using log-linear analysis. The option for the backwards-hierarchical method was made, since in the log-linear model, the combined effects have priority over low-order effects. Finally, the reasons for success of the saturated model were calculated in classification contingency tables, cross-referenced for estimating the probabilistic effects (Agresti and Finlay 2008).

3. Analysis and discussion of results

The sample cutout, entrepreneurs classified as nascent and who answered the 7 selected questions, resulted in 12,663 respondents. In the characterization of nascent entrepreneurs, 53% are from 23 developed countries (Germany, Argentina, Belgium, Chile, South Korea, Croatia, Denmark, United Arab Emirates, Slovenia, Spain, United States, Finland, Hong Kong, Hungary, Iceland, Israel, Italy, Japan, Latvia, Norway, Netherlands, United Kingdom and Switzerland) and 47% from 27 underdeveloped or developing countries (South Africa, Saudi Arabia, Algeria, Bosnia Herzegovina, Brazil, China, West Bank and the Gaza Strip, Colombia, Ecuador, Guatemala, Yemen, Iran, Jamaica, Jordan, Lebanon, Malaysia, Morocco, Palestine, Panama, Peru, Dominican Republic, Romania, Russia, Serbia, Syria, Uganda and Venezuela).

Of this sample, nascent entrepreneurs from developed countries aged between 17 and 83, with a median age of 37, and mainly working in the consumer sector (63.4%), followed by the transformation industry (17.9%), the extraction industry (10.9%) and services (7.8%). Median initial investment needed to start the business was US\$ 37,659,352 and the median own capital invested was US\$ 7,274,463. The ones from developing countries aged 16 to 88, with a median age of 36, mainly working in the consumer sector (50.5%), followed by the transformation industry (24.8%), services (19.5%) and extraction industry (5.3%). The median initial investment needed to begin the business was US\$ 24,877,254 and the median own capital invested was US\$ 12,283,191.

A 7-factor log-linear analysis (internationalization, innovation, gender, skills, opportunity, sector and country) produced a model that retains all effects. The verosimilarity ratio for this model was χ^2 (72) = 67.596, $p = 0.625$: this statistic was nothing more than an alternative measure to Pearson chi-square and was based on the comparison of frequencies observed with those projected by the model. Since the backwards-hierarchical method was chosen, 72 steps were needed to remove interactions with high-order effects that did not influence the model. Thus, the verosimilarity ratio was not significant. This indicated that the expected values generated by the model did not differ from the observed, that is, the model had good adherence.

Table 2 presents the highest order interactions retained in the model, the effects of which were then analyzed. All retained interactions have variables that refer to intangible resources and environmental variables as proposed in the Rialp et al. (2005) model. The variable related to innovation (innov) proved relevant in the analysis and it was present in 5 of the 9 retained interactions. Because of the objective in this paper, we analyze all the interactions with the variables innovation and/or internationalization: interactions 2, 4, 5, 6, 7, 8 e 9.

Table 2: Interactions

Interaction	χ^2	p-value
(1) gender * sector	48.779	0.000
(2) country * gender * export * innov	14.077	0.000
(3) country * gender * oport	11.092	0.001
(4) oport* skills * export * sector	7.577	0.006
(5) country * gender * export * skills	6.738	0.009
(6) country * innov * skills	6.423	0.011
(7) country * oport * export * innov	4.302	0.038
(8) skills * sector * export * innov	4.213	0.040
(9) country * sector * export * oport	3.997	0.046

Source: elaborated by the authors (2014).

[Write] Analyzed data show that most of nascent entrepreneurs are local focused, they do not internationalize both in developing and developed countries. However the nascent entrepreneurs that innovate are more likely to internationalize in any quadrant (table 3), but the effect appears to be higher for women in developing countries: they are more than twice likely to export when they innovate.

Table 3: Interaction 2

Interaction		country * gender * export * innov							
		Country							
		Developed			developing				
		Exports			Exports				
Gender	female	Innov	no	Yes	Total	Innov	no	yes	Total
		yes	0.545	0.455	1	yes	0.604	0.396	1
		no	0.608	0.392	1	no	0.777	0.223	1
		Total	0.570	0.430	1	Total	0.681	0.319	1
		Ratio	1.30 ($\chi^2 (1) = 8.960$ p<0.05)			Ratio	2.28 ($\chi^2 (1) = 93.314$ p<0.05)		
	male	Innov	no	Yes	Total	Innov	no	yes	Total
		yes	0.451	0.549	1	yes	0.577	0.423	1
		no	0.583	0.417	1	no	0.694	0.306	1
		Total	0.507	0.493	1	Total	0.629	0.371	1
		Ratio	1.70 ($\chi^2 (1) = 62.286$ p<0.05)			Ratio	1.66 ($\chi^2 (1) = 57.385$ p<0.05)		

Source: elaborated by the authors (2014).

[Write] In Table 4, we find that entrepreneurs with business skills and driven by an opportunity have almost the same chance to internationalize in no/low technology sectors and medium/high technology sectors (0.97). In the absence of both (skills and opportunity), the chances of entrepreneurs in no/low tech sectors are about one-third larger, since the lack of only skill or opportunity, they are 1.52 and 1.91 more likely to internationalize, respectively. This seems to indicate that the higher the technological level of the industry, the higher are the requirements to internationalize.

Table 4: Interaction 4

Interaction		opport* skills * export * sector							
		Opportunity							
		No			yes				
		Exports			Exports				
Skills	yes	Sector	no	yes	Total	Sector	No	yes	Total
		N/L tech	0.667	0.333	1	N/L tech	0.557	0.443	1
		M/H tech	0.512	0.488	1	M/H tech	0.566	0.434	1
		Total	0.665	0.335	1	Total	0.558	0.442	1
		Ratio	1.91 ($\chi^2 (1) = 4.361$ p<0.05)			Ratio	0.97 ($\chi^2 (1) = 0.059$ p>0.05)		
	no	Sector	no	yes	Total	Sector	No	yes	Total
		N/L tech	0.732	0.268	1	N/L tech	0.603	0.397	1
		M/H tech	0.789	0.211	1	M/H tech	0.500	0.500	1
		Total	0.733	0.267	1	Total	0.601	0.399	1
		Ratio	1.37 ($\chi^2 (1) = 2.189$ p<0.05)			Ratio	1.52 ($\chi^2 (1) = 0.868$ p>0.05)		

Source: elaborated by the authors (2014).

[Write] Despite the nascent business from developed countries have a greater proportion that export, the effect of the variable business skills constitute a factor with a positive impact on the internationalization of nascent business with similar values in general.

Table 5: Interaction 5

Interaction		country * gender * export * skills							
		Country							
		Developed			Developing				
Gender	Female	Exports			Exports				
		Skills	no	yes	Total	Skills	no	yes	Total
		yes	0.567	0.433	1	yes	0.670	0.330	1
		no	0.589	0.411	1	no	0.735	0.265	1
		Total	0.570	0.430	1	Total	0.681	0.319	1
	Ratio	1.09 ($\chi^2(1) = 0.578$ p>0.05)			Ratio	1.37 ($\chi^2(1) = 7.672$ p<0.05)			
	Male	Exports			Exports				
		Skills	no	yes	Total	Skills	no	yes	Total
		yes	0.496	0.504	1	yes	0.626	0.374	1
		no	0.607	0.393	1	no	0.649	0.351	1
Total		0.507	0.493	1	Total	0.629	0.371	1	
Ratio	1.57 ($\chi^2(1) = 15.837$ p<0.05)			Ratio	1.10 ($\chi^2(1) = 1.142$ p>0.05)				

Source: elaborated by the authors (2014).

[Write] The interaction country, innovation and skills (Table 6) shows that entrepreneurs with business skills in developed countries are 1.18 more likely to innovate than those who do not have skills. On the other hand, in developing countries, people with skills have 0.95 more chances, in other words, do not constitute advantage..

Table 6: Interaction 6

Interaction		country * innov * skills						
		Country						
		Developed			developing			
		Skills			Skills			
Innov		no	Yes	Total	Innov	no	yes	Total
no		0.130	0.870	1	no	0.157	0.843	1
yes		0.113	0.887	1	yes	0.164	0.836	1
Total		0.120	0.880	1	Total	0.161	0.839	1
Ratio		1.18 ($\chi^2(1) = 4.135$ p<0.05)			Ratio	0.95 ($\chi^2(1) = 0.628$ p>0.05)		

Source: elaborated by the authors (2014).

[Write] In Table 7, except quadrant developed country versus undirected entrepreneur for an opportunity in which the positive effect of innovation is lower (1.13 more likely to export) innovation is a factor promoting export capacity increasing the likelihood of internationalization of 1.65 to 1.83.

Table 7: Interação 7

Interaction		country * oport * export * innov							
		Country							
		Developed			Developing				
Opportunity	Yes	Exports			Exports				
		Innov	no	Yes	Total	Innov	no	yes	Total
		no	0.597	0.403	1	no	0.685	0.315	1
		yes	0.473	0.527	1	yes	0.547	0.453	1
		Total	0.523	0.477	1	Total	0.605	0.395	1
	Ratio	1.65 ($\chi^2(1) = 69.997$ p<0.05)			Ratio	1.80 ($\chi^2(1) = 86.064$ p<0.05)			
	No	Exports			Exports				

	Innov	no	Yes	Total	Innov	no	yes	Total
	no	0.577	0.423	1	no	0.797	0.203	1
	yes	0.548	0.452	1	yes	0.681	0.319	1
	Total	0.561	0.439	1	Total	0.739	0.261	1
	Ratio	1.13 ($\chi^2 (1) = 0.994$ p>0.05)			Ratio	1.83 ($\chi^2 (1) = 39.363$ p<0.05)		

Source: elaborated by the authors (2014).

[Write] As shown in Table 7, Table 8 reiterates the character of fostering the internationalization brought by innovation: the entrepreneur's chances with skills in no or low technology sector of exporting are almost double when it innovates. However, when you do not have the business skills and the industry is low technology, chances are about 1/3 smaller when it innovates, possibly in these sectors innovation alone is not able to leverage the business abroad.

It is also worth to affirm that, considering the three interactions with variable skill (interactions 4, 5, and 6), entrepreneurship skill is more important do internationalization (export) than to innovation (innov) in nascent business.

Table 8: Interação 8

Interaction		sector * skills * export * innov							
		Sector							
		M/H technology			N/L technology				
Skills	Yes	Exports			Exports				
		Innov	no	yes	Total	Innov	no	yes	Total
		no	0.657	0.343	1	no	0.653	0.347	1
		yes	0.532	0.468	1	yes	0.493	0.507	1
		Total	0.586	0.414	1	Total	0.557	0.443	1
	Ratio	1.68 ($\chi^2 (1) = 166.48$ p<0.05)			Ratio	1.93 ($\chi^2 (1) = 6.103$ p<0.05)			
	No	Exports			Exports				
		Innov	no	yes	Total	Innov	no	yes	Total
		no	0.731	0.269	1	no	0.429	0.571	1
		yes	0.588	0.412	1	yes	0.684	0.316	1
Total		0.652	0.348	1	Total	0.615	0.385	1	
Ratio	1.91 ($\chi^2 (1) = 39.280$ p<0.05)			Ratio	0.35 ($\chi^2 (1) = 1.412$ p>0.05)				

Source: elaborated by the authors (2014).

[Write] The entrepreneurship driven by opportunity leads to companies most probable to export in high-tech sectors in developed countries (most likely 1.58) and low-tech industries in developing countries (most likely 1.87). Already in the high technology sector in developing countries, the opposite occurs, the chances are smaller (0.71).

Table 9: Interação 9

Interaction		country * sector * export * opport							
		Country							
		developed			developing				
Sector	M/H tech	Exports			Exports				
		Opport.	no	yes	Total	Opport.	no	yes	Total
		no	0.667	0.333	1	no	0.478	0,522	1
		yes	0.558	0.442	1	yes	0.565	0,435	1
	Total	0.572	0.428	1	Total	0.541	0,459	1	
	Ratio	1.58 ($\chi^2 (1) = 1.004$. p>0.05)			Ratio	0.71 ($\chi^2 (1) = 0.503$. p>0.05)			
	L/N tech	Exports			Exports				
Opport.	no	yes	Total	Opport.	no	yes	Total		

	no	0.559	0.441	1	no	0.742	0,258	1
	yes	0.522	0.478	1	yes	0.606	0,394	1
	Total	0.529	0.471	1	Total	0.652	0,348	1
	Ratio	1.16 ($\chi^2 (1) = 5.091$ p<0.05)			Ratio	1.87 ($\chi^2 (1) = 121.63$. p<0.05)		

Source: elaborated by the authors (2014).

4. Final remarks

This study intended to answer the question whether internationalization determining innovation in nascent enterprises, or rather than innovative companies tend to reveal higher levels of propensity for internationalization, which was done based on the application of the Rialp et al. (2005) internationalization model, which was tested satisfactorily. The results suggested that the innovation issue at nascent companies is a relevant variable to internationalization.

The work made it possible to identify a set of interesting results, part of which confirmed results already achieved in other studies, but another part provided new contributions to literature on these subjects.

In general terms, this study corroborates in great part other previously conducted studies that suggest the role of innovation and technology as essential drivers of early internationalization and the existence of a positive relationship between innovation and internationalization.

The actions to improve international competitiveness, it is important to note that, assuming internationalization as an indicator of the success of an enterprise, high-tech start-ups for the underdeveloped and developing countries does not translate into superior performance: innovation accompanied by targeting for an opportunity at no or low technology sectors seem that leverages international performance in these countries.

In this sense, the medium and high technology does not promote integration into global trade flows. But in the other hand, the results suggest that innovation promote the internationalization. However is important to understand innovation as a broader concept that relates the capabilities of the organization and answer to a market need, than a strict definition only relate to the creation of technology.

Limitations and Future Studies

By using the GEM database, it was necessary to accept the definitions used by GEM, for the internationalized company as well as the nascent company, and this can be seen as a study limitation. For example, for an internationalized company, only exporters were considered and it is possible for some internationalized companies not to carry out export activities (such as services) and therefore they are not added to the sample. For the definition of a nascent company, the acceptance that the new business paid any salaries, wages or payments in cash for more than three months could be limited to the sample.

The methodology used, although adequate for this type of study, since it permitted the adaptation and testing of the chosen theoretical model, limited the study in some points, especially because there was a dependence on interactions retained by the method and also because some analyses became general due to the variables and their cross-referencing in retained interactions.

References

- Anokhin, S.; Wincent, J. (2012). Start-up rates and innovation: A cross-country examination *Journal of International Business Studies* (2012) 43, 41–60.
- Autio, E.; Sapienza, H. J.; Almeida, J. G. (2000). "Effects of age at entry, knowledge intensity, and imitability on international growth", *Academy of Management Journal*, Vol. 43, N° 5: 909-924.
- Baum, M.; Schwens, C.; Kabst, R. (2011). "A typology of international new ventures: empirical evidence from high-technology industries", *Journal of Small Business Management*, Vol. 49, N° 3: 305-330.
- Cassiman, Bruno; Golovko, Elena (2011). "Innovation and internationalization through exports", *Journal of International Business Studies*, Vol. 42, N°1: 56-75.
- Coviello, Nicole; Munro, Hugh (1997). "Network relationships and the internationalisation process of small software firms", *International Business Review*, Vol. 6, N° 4: 361-368.

- Erramilli, M. (1990) "Entry mode choice in service industries" *International Marketing Review*, 7(5): 50-62.
- Fan, T.; Phan, P. (2007). "International New Ventures: Revisiting the influences behind the 'Born-Global firm'", *Journal of International Business Studies*, Vol. 38, N° 7: 1113-1131.
- Gabrielsson, M.; Kirpalania, M.; Dimitratos, P.; Solbergf, C. A.; Zucc hella, A. (2008). "Born globals: propositions to help advance the theory", *International Business Review*, Vol. 17, N° 4: 385-401.
- Ganotakis, P.; Love, J. H. (2011). "R&D, product innovation, and exporting: evidence from UK new technology based firms", *Oxford Economic Papers*, Vol. 63, N° 2, p. 279-306.
- Halabisky, D., Lee, B., Parsley, C. (2005). *Small business exporters: A Canadian profile*. Ottawa, ON: Small Business Policy Branch.
- Johnson, J. E. (2004). "Factors influencing the early internationalization of high technology start-ups: US and UK evidence," *Journal of International Entrepreneurship*, Vol. 2, N° 1-2: 139-154.
- Knight, G.A.; Cavusgil, S.T. (1996) "The born global firm: A challenge to traditional Internationalization theory" In S.T. Cavusgil & T. Madsen (Eds.), *Advances in international marketing*, Vol. 8, Greenwich: JAI Press, 11-26.
- Knight, Gary; Cavusgil, S. Tamer (1996). "The born global firm: a challenge to traditional internationalization theory", *Advances in International Marketing*, Vol. 8: 11-26.
- Lu, J.; Beamish, P.W. (2001) "The internationalization and performance of SMEs" *Strategic Management Journal*, 22(6-7), 565-586.
- Oviatt, B.M., McDougall, P.P. (1994) "Toward a theory of international new ventures" *Journal of International Business Studies*, 25(1), 45-64.
- Rialp, A., Rialp, J., Knight, G.A. (2005) "The phenomenon of early internationalizing firms; what do we know after a decade (1993 - 2003) of scientific inquiry?" *International Business Review*, 14(2), 147-166.
- Weerawardena, J.; Mort, G. S.; Liesch, P. W.; Knight, G. (2007). "Conceptualizing accelerated internationalization in the born global firm: a dynamic capabilities perspective", *Journal of World Business*, Vol. 42, N° 3: 294-306.
- Zucchella, A.; Palamara, G.; Denicolai, S. (2007). "The drivers of the early internationalization of the firm", *Journal of World Business*, Vol. 42, N° 2: 268-280.