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"Does entrepreneurs' human and relational capital affect early internationalization? A cross-regional comparison*"

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Eje Temático

Emprendimientos globales y sus vínculos con los procesos de integración

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Abstract

Since the appearance of Oviatt and McDougall's seminal paper in 1994 "Toward a theory of international new ventures" a vast amount of literature has been developed to the emergence, the behavior and effects of these new international firms (e.g. Andersson and Wictor, 2003; Autio, Sapienza and Almeida, 2000).

Some critical reviews of the state of the art in this field of research pointed out the need to deepen our understanding of this early internationalization process and its determinants (Coviello and McAuley, 1999; Jones and Coviello, 2005). Limitations of past empirical research in this area have been highlighted. Past research on this topic has been characterized by (i) the use of case studies or small samples, and (ii) a tendency to focus on U.S. or European countries. As a consequence, there is a need for a more systematic research approach that incorporates larger samples, cross-national comparisons and multivariate statistical methods (Rialp, Rialp and Knight, 2005).

Trying to fill this gap, we conducted this study whose primary objective was to analyze the effects of human and relational capital on the likelihood of creating an EIF, focusing particularly on some less studied countries. We compared nearly 1,700 young firms in 13 countries within three different regions (Latin America, South-East Asia and Europe) with the aim of shedding some light on the following research question: does entrepreneurs' human and relational capital significantly affect early internationalization of young firms? The main contributions are: a) it extends the country coverage of empirical EIF studies to include less studied, less developed nations; b) this paper tests the cross-regional validity of a resource-based approach to explain and understand the emergence of EIFs as well as a stricter operational definition of what constitutes an EIF and c) our work presents an empirical model using the Rare Events Logistic Regression technique, a useful statistical tool for conducting further research in this area.

Key words: born global, human capital, relational capital

Introduction

Since the appearance of Oviatt and McDougall's seminal paper in 1994 *"Toward a theory of international new ventures"* a vast amount of literature has been developed to understand not only the emergence but also the behavior and effects of these new international firms (e.g. Andersson and Wictor, 2003; Autio, Sapienza and Almeida, 2000; Bloodgood, Sapienza and Almeida, 1996; McDougall and Oviatt, 1996; McDougall, Shane and Oviatt, 1994). In particular, since the emergence of this research field, many scholars have demonstrated that early internationalizing firms (hereafter, EIFs) are generally led by entrepreneurs with higher levels of human and relational capital (e.g. Bloodgood et al., 1996; Madsen and Servais, 1997; McDougall et al., 1994; Zou and Stan, 1998).

Despite the great effort that has been done, some critical reviews of the state of the art in this field of research pointed out the need to deepen our understanding of this early internationalization process and its determinants (Coviello and McAuley, 1999; Jones and Coviello, 2005; Rialp, Rialp and Knight, 2005; Zahra and George, 2002; Zou and Stan, 1998). Moreover, some recent contributions state that despite the research attention devoted to this phenomenon, some of its characteristics are still not well understood (Fan and Phan, 2007; Westhead, Wright and Ucbasaran, 2001).

In particular, some limitations of past empirical research in this area have been highlighted. In general, past research on this topic has been characterized by (i) the use of case studies or small samples, and (ii) a tendency to focus on U.S. or European countries. As a consequence, there is a need for a more systematic research approach that incorporates larger samples, cross-national comparisons and multivariate statistical methods (Coviello and Jones, 2004; Rialp et al., 2005; Zahra and George, 2002).

Trying to fill this gap in the empirical literature, we conducted this study whose primary objective was to analyze the effects of human and relational capital on the likelihood of creating an EIF, focusing particularly on some less studied countries. Accordingly, we compared nearly 1,700 young firms in 13 countries within three different regions (Latin America, South-East Asia and Mediterranean Europe) with the aim of shedding some light on the following research question: does entrepreneurs' human and relational capital significantly affect early internationalization of young firms? The main contributions of this paper are threefold. First, it extends the country coverage of empirical EIF studies to include less studied, less developed nations. Secondly, this paper tests the cross-regional validity of a resource-based approach to explain and understand the emergence of EIFs as well as a stricter operational definition of what constitutes an EIF. Finally, our work presents an empirical model using the Rare Events Logistic Regression technique, a useful statistical tool for conducting further research in this area which is rarely used in the empirical literature.

The remainder of this paper is organized as follows. In the next section, we describe the theoretical background of this paper as well as the conceptual model and research hypotheses. We subsequently explain the empirical model to be tested, giving details of the data, the estimation method and the variables included in our analysis. Thereafter, we present and discuss the main empirical results of the study, focusing on observed cross-regional differences. Finally, we conclude by discussing some implications of this study.

Theoretical Framework and Conceptual Model

Theoretical approaches to EIFs have evolved over recent years from a single-perspective approach to multiple-perspective models that encompass several theoretical frameworks. Within this category, the most cited theoretical perspectives are those on entrepreneurship (Andersson and Evangelista, 2006), the resource-based view of the firm (Bloodgood et al., 1996; Westhead et al., 2001), the dynamic capabilities perspective (Sapienza, Autio, George and Zahra, 2006), the evolutionary framework (Madsen and Servais, 1997) and the network approach (Coviello and Munro, 1995; Coviello, 2006). In common all these theoretical approaches posit that early internationalization occurs as a result of entrepreneurs' human and relational capital components, combined with firm-specific variables and environmental-institutional influences.

Adopting a perspective focused on the human and relational capital has been considered by many authors as an adequate framework to analyze the influences of entrepreneurs' abilities, knowledge, experiences and networks on firm strategic behavior, including early internationalization (Bloodgood et al., 1996; Rialp et al., 2005; Westhead et al., 2001). Similarly, McDougall et al. (1994) argue that, in emerging firms, the "decision-making system" is embedded into the founders' minds.

Likewise, taking a resource-based view of the firm, Alvarez and Busenitz (2001) stated that, especially in the case of start-ups or young companies, entrepreneurs constitute firm's unique resources. This uniqueness is derived from the human and relational capital of these individuals. From this human and relational capital platform, entrepreneurs may create a critical level of firm-specific competitive advantages that allow their companies to be involved in international markets right from their inception. Therefore, we argue that higher levels of human and relational capital would contribute positively to the likelihood of creating an EIF.

From this perspective, the two most studied sources of human capital are entrepreneurs' level of education and previous work experience. Regarding entrepreneurs' educational background, it is expected that education plays a key role in business performance. In general, education is associated not only with technical knowledge but also with other soft skills, such as problem solving abilities, creativity, autonomy and self-confidence (Cooper, Gimeno-Gascon and Woo, 1994). Higher levels of education also contribute positively to an individual's ability to learn about markets and technology as well as their ability to recognize new business opportunities (Shane, 2000).

In the context of early export behavior, a growing number of scholars have identified the positive correlation between entrepreneurs' educational level and firm export behavior (Andersson and Wictor, 2003; Westhead et al., 2001; Zou and Stan, 1998). Managing the complexity associated with an emerging international firm requires a critical set of competencies, some of which are acquired through education (McDougall et al., 1994). In addition, postgraduate studies often offer the opportunity for international travel and/or contact with other cultures. Both of these elements can improve entrepreneurs' knowledge of foreign markets. Thus, we would argue that an entrepreneur's educational background will enrich a firm's human capital platform, improving its chances of international growth. In the light of this evidence, we posit the following hypothesis:

Hypothesis 1: Firms whose main founder has a university or postgraduate education will exhibit a higher likelihood of becoming an early internationalizing firm.

Prior work experience among founders has been repeatedly studied as a means of explaining firm behavior (Stuart and Abetti, 1990). Empirical evidence has also shown that prior work experience serves as an 'entrepreneurial training'. Through such experience, entrepreneurs learn not only codified knowledge but also implicit know-how regarding markets and the world of business – key information that could not be fully acquired in any other way (Kantis, Moori-Koening and Angelelli, 2004).

In terms of the influence of entrepreneurs' previous work experience on their early export behavior, the empirical evidence is not conclusive (Westhead et al., 2001; Zou and Stan, 1998). Regardless of the type of work experience, industry-specific knowledge is what really impacts firms' export behavior (Westhead et al., 2001). As these authors point out, entrepreneurs who found a new company in the same industry as the one in which they have experience have a more in-depth knowledge about the sector and the core technologies. This knowledge gives them a competitive advantage. In addition, they are better acquainted with suppliers and customer needs, both in domestic and international markets, and so are better equipped to identify market opportunities. Based on these arguments, we propose the following hypothesis:

Hypothesis 2: Those firms founded by entrepreneurs with industry-specific knowledge are more likely to be early internationalizing firms

A singular case of previous work experience refers to those individuals with previous entrepreneurial experience, i.e. those who have created another firm previously. Some scholars have demonstrated that new businesses created by habitual entrepreneurs have distinct advantages compared with ventures founded by novice entrepreneurs (Colombo and Grilli, 2005; Sapienza, et al., 2006). In particular, previous entrepreneurial experience may enable entrepreneurs not only to accumulate more specific and tacit knowledge about the market, but also to develop more specific business networks, both locally as well as internationally. Finally, prior entrepreneurial experience may equip a founder with a richer and broader base of entrepreneurial skills. These may include higher risk tolerance and more proactive problem-solving routines that may be of benefit in creating an international venture. In accordance with this evidence, we propose the following hypothesis:

Hypothesis 3: Those firms that are founded by individuals with previous entrepreneurial experience are more likely to be early internationalizing firms

Finally, we consider entrepreneurs' age as another element of human capital that is of importance. At the simplest level, older entrepreneurs have generally had more time to accumulate valuable human capital. In this vein, Westhead et al. (2001) concluded that entrepreneurs' age exerts a positive influence on export propensity. Aside from the aforementioned positive effect of age on human capital accumulation, older entrepreneurs are expected to have more financial security as well as more extensive social and business networks. This enriched resource platform as well as the considerable experience of older entrepreneurs may be of great importance when it comes to international sales and marketing. Accordingly, we propose the following hypothesis:

Hypothesis 4: Firms led by older entrepreneurs are more likely to be early internationalizing firms

A bridge between human and relational capital is the entrepreneurial team; more precisely, the number of partners involved in the creation of the firm. Businesses owned by teams have a more diversified base of skills and other intangible resources, which allow them to identify and exploit new opportunities in foreign markets (Westhead et al., 2001). The number of partners contributes to the whole firm resource platform, adding not only knowledge and experiences but also networks and personal contacts. In addition, Cooper et al. (1994) pointed out that entrepreneurial teams increase venture legitimacy, reducing some of the liabilities associated with new ventures. Finally, entrepreneurial teams are also more likely to have accumulated a broader base of financial resources. All this leads us to propose the following hypothesis:

Hypothesis 5: Those firms initiated by a larger number of partners (teams) are more likely to be early internationalizing firms

On the other hand, empirical evidence derived from case studies has highlighted the importance of relational capital networks on export behavior. Sharma and Blomstermo (2002) proposed three reasons for the importance of networks to the internationalization process. First, networks may provide access to information about foreign markets and may help identify the needs of potential international customers. Secondly, networks may be a useful way to find potential partners abroad. Finally, networks may help identify new international business opportunities. In a subsequent publication, these authors extended the aforementioned arguments, making explicit other positive benefits from a knowledge-based view. They specifically highlighted the importance of networks as a pervasive vehicle for knowledge transfer (Sharma and Blomstermo, 2003). Other evidence also supports the hypothesis that new firms with extensive networks are able to internationalize earlier and more successfully than their competitors (e.g. Andersson and Wictor, 2003; Coviello, 2006; Knight and Cavusgil, 1996; Oviatt and McDougall, 1995). Finally, networks may also enrich the base of firm resources, both financial and non-financial.

However, the positive effects of networks may be mediated by the nature of such networks. Szarka (1990) divided networks into social and professional ones. Social networks include not only family members but also all relatives, friends and acquaintances with whom the entrepreneur relates primarily on a social basis. In contrast, professional networks include all those individuals (institutions, suppliers, customers, etc.) with whom the relationship is primarily established at the business level. Entrepreneurship research has shown a pattern of change in the importance of both profiles of networks, where social networks are more important at the early stages of the venture, whereas professional networks tend to become increasingly important as the venture grows. In fact, some evidence showed that a higher usage of professional networks is associated with better performance (Kantis et al., 2004). From a resource-based perspective, information, knowledge and experience drawn from professional networks may generate more firm-specific relational capital than would social networks. Some empirical evidence supports this idea of the relative superiority of one type of network over the other in terms of performance (Ostgaard and Birley, 1996). Consequently, in light of the aforementioned discussion, we propose the following hypothesis:

Hypothesis 6: Firms with larger networks and more professionally-oriented networks are more likely to be early internationalizing firms

Environmental as well as firm characteristics play an important role in moderating the influence of human and relational capital on the likelihood of being an EIF. Moreover, due to the fact that we are comparing young firms from different countries, we want to isolate the human and relational capital effects from others that may influence the export behavior but are country- or firm-specific. Therefore we include a set of firm-specific and environmental determinants as control variables. We include firm size, age and sector as firm-specific variables, whereas firm location (urban or rural) and the size of domestic markets are considered as environmental variables.

In conclusion, our conceptual model of early internationalization based on existing research establishes the relationships between different variables and the likelihood of EIF creation, as Figure 1 illustrates.

Figure 1 about here

Research Methodology and the Empirical Model

Data Collection

Data for this study was obtained from the combination of two different databases. The first derived from the research project *Entrepreneurship in Emerging Economies*, developed by the Universidad Nacional de General Sarmiento (Argentina), the Development Bank of Japan and the Inter-American Development Bank (Kantis, Ishida and Komori, 2002). The second database was generated by the research project *Developing Entrepreneurship*, an initiative of the Universidad Nacional de General Sarmiento, the Inter-American Development Bank and FUNDES International (Kantis et al., 2004). Both databases include data on entrepreneurs' backgrounds, firm characteristics and the venture creation process in 13 countries. Of these nations, seven are in Latin America (Argentina, Brazil, Peru, Mexico, Costa Rica, El Salvador and Chile); four in South-East Asia (Japan, Korea, Singapore and Taiwan) and two are in the Mediterranean Europe (Spain and Italy)¹. In total, more than 2,000 entrepreneurs were interviewed in person between 2001 and 2003 using a structured and standardized questionnaire. After controlling for missing cases and incomplete information, we ended up with a sample of 1,701 young firms, of which 54% (919) were in Latin America, 29% (492) were located in South-East Asia and 17% (290) were based in Mediterranean Europe².

Description of the Variables and the Empirical Model

The dependent variable in this model is the likelihood of being or becoming an EIF. Traditionally, an EIF has been conceptually defined as "a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple

countries" (Oviatt and McDougall, 1994: 49). However, the question of how to empirically identify such firms has been one of the most challenging tasks in this research field.

Researchers have usually defined this type of firms using two variables: (i) the extent of the international activities, and (ii) the speed of internationalization. In this logic, one of the most referred operational definitions of an EIF is a firm that exports more than 25% of its total sales within three years of its inception (Knight and Cavusgil, 1996; Madsen, Rasmussen and Servais, 2000). More recent and improved definitions also include the number of countries to which a firm is exporting (Pla-Barber and Escribá-Esteve, 2006).

Based on the empirical definition suggested by Knight and Cavusgil (1996), we have developed a stricter definition of an EIF that also takes into account two additional factors: (i) the regularity of the export activity, and (ii) the growth in its importance over time. From questionnaire response data we have information about each firm's export behavior at three different time points: at the first year, at the third year of operations, and at the time of the survey (which, on average, corresponded to the firm's eighth year). In light of the aforementioned comments about the empirical definition of an EIF, and in trying to fully exploit our dataset, we operationally define an EIF as a *firm that has experienced some export activity in the first year, has exported at least 25% of its sales by the third year and has exported at least 50% of its sales by the year of the survey (on average the eighth year)*. The 25% third year cut-off value could be interpreted as restrictive, but it has been previously adopted by several studies. As previously explained, it is considered standard within this field of research. The adoption of the 50% cut-off value, however, has less empirical support in the literature. It was established in order to focus our study on those firms that experience not only a sustainable export performance during their early years, but also a relevant growth in its importance during this period.

As other studies have shown, EIFs – independent of the specific operational definition being used – only constitute a small percentage of all new firms (Westhead et al., 2001). In the present study, the proportion of EIFs, as identified by our stricter definition, is even lower; barely 3% of the total sample, with some regional variability, as shown in Table 1.

Table 1 about here

The set of independent variables included in this article is aligned with the hypotheses proposed and other research described in the literature. The educational level of the principal founder of the firm is evaluated using a set of dummy variables, one for those who graduated with a university degree and the other for those who completed some level of postgraduate studies. The reference (omitted) category includes those entrepreneurs who did not complete university-level studies.

Secondly, entrepreneurs' industry-specific knowledge as well as entrepreneurial experience is measured using dichotomous variables. Finally, entrepreneurs' age was considered, including not only the age but also the square of this value to capture potential non-linear relationships. Some recent qualitative research suggested the presence of such non-linear effects (Andersson and Evangelista, 2006). Regarding variables associated with relational capital, the size of the entrepreneurial team was measured by the number of partners who were involved in founding the business. To capture both

network size and profile, we decided to build a dichotomous variable that equals 1 for firms with networks of more than 8 people provided that those networks were predominantly of a commercial and institutional nature³.

Regarding firm-specific variables, we decided to consider firm size at the first year of operation as a proxy of firm size due to the relative youth of the surveyed companies⁴. Firm size was measured as the number of employees by the end of the first year of operations. Firm age was measured as the difference between the year of the survey and the year of founding. We also included a binary variable that equaled 1 if the firm performed a knowledge-intensive activity (software, internet-based businesses and applied electronics) and 0 if the firm performed conventional manufacturing activities. A binary location variable equaled 1 for those firms located in large metropolitan cities and 0 for firms located in rural areas or small provincial towns⁵. Finally, the size of the domestic market was captured using a dichotomous variable that equaled 1 if the firm was based in a large country and 0 if the firm was headquartered in a small country⁶. The empirical model to be tested was as follows:

Likelihood of creating an EIF = $\hat{\beta}_0 + \hat{\beta}_1$ University studies + $\hat{\beta}_2$ Postgraduate studies + $\hat{\beta}_3$ Age + $\hat{\beta}_4$ Age² + $\hat{\beta}_5$ Industry experience + $\hat{\beta}_6$ Entrepreneurial experience + $\hat{\beta}_7$ Team + $\hat{\beta}_8$ Network size and profile + Σ ($\hat{\beta}_i$ Control variable_i) + ε

The relevance of socio-cultural factors in shaping entrepreneurial decisions is widely accepted. Many academics have demonstrated that socio-cultural as well as institutional variables may affect not only the decision to become entrepreneur but also a venture's future success (e.g. Gnyawali and Fogel, 1994; Kantis et al., 2002, 2004; North, 1990; Shane and Kolvereid, 1995). Thus, in order to consider the differentiating role of socio-cultural and institutional frameworks in human and relational capital variables as well as in the likelihood of EIF creation, we will estimate three different models, one for each region (Latin America, South-East Asia and Mediterranean Europe).

The Estimation Method

The decision to create an EIF could be interpreted as a result of a binary choice model. Accordingly, to identify the main factors in EIF creation, we can use a logit regression model estimated by maximum likelihood (Greene, 2003). However, using a standard logit regression model in the presence of a dependent variable whose distribution tends to $\hat{p}_i \cong 0$ may lead to biased results due to an underestimation of the parameters. In an attempt to resolve this difficulty, King and Zeng (2001a, 2001b) developed a new method that corrects standard logit model estimates for the presence of few positive responses (they called them rare events) or small samples. The main difference between this method and the standard logit is that it adjusts the regression at the observed mean value, $\hat{p}_i = \overline{y}$.

Due to the fact that the proportion of EIFs in the sample data was nearly 3% on average, with a minimum in Latin America (2.18%) and a maximum in South-East Asia (6.91%), it seems appropriate

to adopt this Rare Events Logit Model. Despite this, this kind of model is rarely seen in the empirical literature - for examples, see Lafuente, Vaillant and Rialp (2007) or Wagner (2005).

Empirical Results

First, we will comment on the results concerning the influence of human capital variables. Table 2 shows that in Latin America and South-East Asia those young firms whose entrepreneurs are more educated are more likely to become EIFs. This confirms the results of previous research (Andersson and Wictor, 2003; Andersson and Evangelista, 2006). In particular, having postgraduate studies exhibits a positive and statistically significant coefficient in both regions. Postgraduate studies may be considered as more than just additional specific knowledge to manage more complex situations. In many cases, taking postgraduate courses would also involve international travel and exposure to other cultures and/or languages. This may lead entrepreneurs to acquire increased knowledge of foreign markets. Postgraduate studies may also contribute to enhance entrepreneurs' international networks. In contrast, entrepreneurs' educational level does not affect the likelihood of being an EIF in the Spanish and Italian sample. Then, we accept our hypothesis 1 but only in Latin America and South-East Asia.

Table 2 about here

Regarding the influence of entrepreneurs' work experience, our results are mixed. Industry knowledge appears to be negatively associated with the likelihood of creating an EIF in Latin America, whereas there is no influence at all neither in South-East Asia nor in the Mediterranean Europe, contradicting to some extent the empirical evidence from other regions (Westhead et al., 2001) and leading us to reject our hypothesis 2. It could be argue that in the context of Latin American countries, these results may reflect a higher level of skills and capabilities possessed by EIF founders which allow them to overcome the unfavorable entrepreneurial conditions, create their business and make it grow internationally, in spite of their lack of previous industry experience.

A different picture appears when considering the effect of past entrepreneurial experience. In this case, the South-East Asian sample shows a positive and significant relationship between a founder's prior entrepreneurial experience and the probability of creating an EIF. This is consistent with the evidence presented by Westhead et al. (2001). However, some caution should be place when interpreting this result due to the fact that the proportion of habitual entrepreneurs in South-East Asia is significantly lower than in the other regions (51% in Spain & Italy, 40% in Latin America and 18% in South-East Asia). In contrast, no significant relationship was found either in Latin America or in Spain & Italy. So, we accept our hypothesis 3 but only in the South-East Asian sample.

In terms of entrepreneurs' age, we found some interesting data. In Latin America and Mediterranean Europe, we found evidence that suggested a non-linear U-shaped relationship between the age of the principal founder and the likelihood of creating an EIF. These results contradict our hypothesis 4 but confirm previous qualitative studies (Andersson and Evangelista, 2006). In both regions, our results suggest that younger entrepreneurs embodied with a more global business vision and an

entrepreneurial profile more oriented towards international markets, may be significantly more likely to create an EIF. However, at the same time, the accumulation of experiences, networks and resources that takes place as an entrepreneur gets older also increases the probability of EIF creation. In both regions, the inflection point from where the likelihood of creating an EIF starts to rise is around 50 years old.

In contrast, in South-East Asia we found evidence of an inverted U-shaped relationship, suggesting that entrepreneurs' age, as a proxy of the human capital accumulation process, exerts a positive influence on the probability of creating an EIF. This effect occurs up to a certain limit, after which the probability starts to diminish. Consequently we could accept partially our hypothesis 4 for this region. To some extent, this result confirms empirical evidence regarding the importance that age and experience might have in Asian cultures in general, and in the entrepreneurial process in particular (Kantis et al., 2002, 2004).

Relational capital variables are only statistically significant in Latin America. Team size at the start-up influences positively the likelihood of creating an EIF, suggesting the importance of complementing the principal founder's human capital with a number of partners with different skills, knowledge and experiences. Similarly, our findings show that network size and profile contribute positively to increase the likelihood of being an EIF. In fact, those young firms with larger and professional networks exhibit a higher probability of being an EIF. Both results confirm our hypotheses 5 and 6 in the Latin American sample. In this region, relational capital complements human capital in order to achieve an earlier internationalization (Andersson and Evangelista, 2006; Coviello, 2006). In particular, our results reveal that in less developed regions firms need to strength their resource platform by incorporating additional partners and/or qualified networks in order to overcome the unfavorable business conditions and achieve a superior performance, specially an early and successfully internationalization.

Regarding control variables, a few points are worth mentioning. In terms of firm-specific variables, firm age was only statistically significant in Latin America, whereas firm size does not influence the likelihood of a company being an EIF in none of the regions in accordance with other empirical evidence (Zahra and George, 2002; Zou and Stan, 1998). Against our expectations, knowledge-based firms showed a lower probability of being EIFs in Latin America and South-East Asia. Additionally, we found evidence suggesting a negative influence of domestic market size on the likelihood of creating an EIF in Latin America and South-East Asia, confirming previous studies (Fan and Phan, 2007; Madsen and Servais, 1997). Combining both results we could suggest a possible interaction between the size of the domestic market and the specialization of EIFs as Madsen and Servais (1997) have proposed. Thus, in smaller countries, EIFs may produce many different goods, whereas, in larger countries, EIFs may be focused on high-technology sectors. Finally, positive effect of large metropolitan cities was significant only in South-East Asia.

However, the coefficients of a rare events logistic regression only indicate the direction of the effect of each independent variable on the likelihood of EIF creation. To measure the effects of certain variables on the overall probability, we also estimated first differences (or attributable risks). First differences are defined as the change in the probability as a function of a specific change in a variable while all other variables are held constant at their means (Lafuente et al., 2007). The results of the first

differences for those independent variables that were statistically significant at a 95% confidence level are presented in Table 3.

Table 3 about here

From the table above it is clear that entrepreneurs' age has the most significant influence on the probability of creating an EIF, assuming all other variables are held constant. In Latin America, as the age increases from 25 to 35 years, the likelihood of founding an EIF decreases by almost 60%. When we look at the data for older entrepreneurs, the likelihood of creating an EIF also diminishes, but at a decreasing rate. Similarly, in Spain & Italy the most significant effect of entrepreneurs' age on the probability of EIF creation is found between the ages of 35 and 45, when the likelihood of creating an EIF decreases by 57%. In contrast, in South-East Asia the most significant effect of entrepreneurs' age on the probability of EIF creation is found between the ages of 45 and 55, when the likelihood of creating an EIF increases by 54%.

Additionally, in the case of Latin America, the probability of creating an EIF would increase by 2% if the founder had completed some postgraduate education, as well as if he/she had a larger and more professionally-oriented network. Interestingly, team size shows a positive influence on the probability of EIF creation but this influence only starts to become relevant when we consider larger teams. For instance, in our sample, duplicating the number of partners from 8 to 16 increased the likelihood of creating an EIF by 3%. Finally, in the case of South-East Asia, having completed some postgraduate studies would increase the likelihood of creating an EIF by 7%, whereas having previous entrepreneurial experience would improve the chances by 4%.

Conclusions, Limitations and Implications of this Study

The general objective of this research was to analyze the influence of human and relational variables on the likelihood of creating an EIF, comparing three different and contrasting regions. In short, we found that young as well as senior, well-educated entrepreneurs joined in teams with access to large and professionally-oriented support networks constitute the typical profile of an EIF founder in Latin America. In the South-East Asian sample, those more educated and elder entrepreneurs with some previous entrepreneurial experience are those with the highest likelihood to create an EIF. In contrasts, our results for the Mediterranean Europe sample reveal that – except from entrepreneurs' age – human and relational capital components are not significant associated with the likelihood of creating an EIF.

This study also reveals that, in Latin America, entrepreneurs should complement and extend their human capital platform by incorporating additional partners into the entrepreneurial team. At the same time, they should work to develop larger and more professionally-focused external networks in order to better cope with a non-supportive environment and gain a competitive advantage over other firms. We found evidence supporting the idea that in less developed contexts human capital endowments are necessary but not sufficient conditions to successfully create an EIF. Less developed regions characterized by more adverse entrepreneurial business conditions and, in particular, higher barriers

to internationalization, emphasize the importance of human and relational capital in the early internationalization process.

The lack of significant relationships in the Mediterranean Europe context may reflect the effect of the consolidation of the economic integration within the European Union, a situation that for sure diminishes the barriers to export not only for the youngest firms but also for the firms in general. In addition, the limited number of countries included in this region as well as their cultural similarities would influence the results. Including other Northern European countries, largely studied in the empirical literature such as the Scandinavian countries, would affect the results for this region.

Additional limitations of this study are related to the nature of the database itself, which was originally designed to analyze the determinants of the emergence of new and dynamic firms in these regions. As a consequence, some other variables that could be relevant for this study were lacking. These include the specific foreign countries to which these firms had exported their products and more detailed information about entrepreneurs' previous international experience. Similarly, including cognitive, strategic as well as marketing variables into the analysis could be a very promising line of research as these issues could not be evaluated in this particular study. These limitations take us to conclude that our results cannot be directly generalized due to the significant heterogeneity existing within and between these regions. Further research based upon disaggregated data at the country-level, would be especially welcome.

Finally, some policy implications could be derived from this study. First of all, it is important to remark that despite the attention devoted among academicians, EIFs are still a limited proportion of young firms, especially in Latin America. In particular, the lower level of internationalization of firms - especially SMEs - along with higher barriers to growth and export may explain the limited proportion of EIFs in this region. Therefore, there is a pending task for policy makers in order to promote the emergence of young firms that rapidly become international. In particular in the Latin American context, this study reveals the importance of considering both human and relational capital. Training courses as well as networking activities that connect entrepreneurs to international markets, institutions, potential partners and customer needs are highly relevant. In particular, this study identifies some important 'seedbeds' of potential EIF founders, such as young entrepreneurs and those who have some postgraduate education.

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Endnotes

¹ It is important to state that when this survey was conducted, Taiwan was still an independent country. Therefore we will consider it as a country although we acknowledge that it is now part of the People's Republic of China.

² Young firms were defined as those between 3 and 10 years of age. However, in some countries we were forced to extend this general criterion and include some older firms (but not older than 15 years of age). Nevertheless, 94% of the sample was between 3 and 10 years old.

³ Pearson chi-square statistic between the size of the network and the simultaneous presence of both commercial and institutional ties is 53.12 (Latin America), 0.135 (South-East Asia) and 9.32 (Europe). Both values are statistically significant at the 99% confidence level. The cut-off value of eight contacts was confirmed by papers that report on empirical studies of firm growth (Greve and Salaff, 2003).

⁴ In fact, there is a significant correlation between initial size and current size (the size of the firm at the moment of the survey). The Pearson chi-square statistic are 0.45 (Latin America), 0.60 (South-East Asia) and 0.34 (Europe); both, statistically significant at the 99% confidence level.

⁵ A detail of all the areas that were defined as large metropolitan areas and as small towns can be found in Kantis et al. (2004).

⁶ For the calculation of country size, we computed the total population and the GDP for each nation and we compared them with the regional average.

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Source: Own elaboration

Table 1: Regional distribution of early internationalizing firms in the sample

Region	EIFs		Non- EIFs		Total
Latin America	20	2.2%	899	97.8%	919
South-East Asia	34	6.9%	458	93.1%	492
Spain & Italy	14	4.8%	276	95.2%	290
Total	68	4.0%	1,633	96.0%	1,701

	Latin America	South-East Asia	Spain & Italy
Independent variables			
University studies	-0.01(0.54)	0.81 (0.47)	0.07 (0.81)
Postgraduate studies	1.26 (0.61)	1.21 (0.59)	1. 22 (1.18)
Industry experience	-0.89 (0.47)	0.48(0.46)	1.10 (0.89)
Entrepreneurial experience	0.45(0.47)	0.85 (0.43)	-0.15 (0.66)
Entrepreneur's age	-0.37 (0.16) **	0.41 (0.20)	-0.32 (0.14)
Entrepreneur's age square	0.004 (0.002) **	-0.005 (0.002)**	0.003 (0.001)
Team size	0.12 (0.03)	-0.03(0.04)	-0.07 (0.20)
Network size & profile	1.35 (0. 60)	0.21(0.72)	0.54 (0.62)
Control variables			
Firm size	0.01(0.01)	0.01(0.01)	-0.002 (0.02)
Firm age	0.27 (0.09)	-0.10(0.08)	0.09(0.08)
Sector	-1.48 (0.74)	-0.96 (0.43)	1.07 (1.66)
Localization	1.07(1.02)	0.98 (0.56)	2.07 (1.38)
Domestic market's size	-1.23 (0.67)	-2.08 (0.45)	0.26 (0.68)
Intercept	2.01(3.22)	-12.61 (5.05)	3.87 (3.59)
Log likelihood	-71.49	-99.04	-45.56
Wald (χ^2)	51.01***	51.93***	53.36***
Pseudo-R ²	0.26	0.20	0.19

Correctly predicted (EIF)	85.00%	76.47%	85.71%
Correctly predicted (non-EIF)	78.64%	74.24%	68.48%
Correctly predicted (full sample)	78.78%	74.39%	69.31%
N. Observations	919	492	290

Notes: Robust standard errors are in parenthesis. if p < 0.10; if p < 0.05; if p < 0.01.

	Latin America	South-East Asia	Spain & Italy
Entrepreneur's age (25-35 years old)	-57.01%	0.00%	-28.65%
Entrepreneur's age (35-45 years old)	-17.15%	2.11%	-56.83%
Entrepreneur's age (45-55 years old)	-0.01%	54.50%	-5.57%
Entrepreneur's age (55-65 years old)	-0.00%	32.39%	-0.30%
Postgraduate studies	1.94%	7.54%	
Industry experience			
Entrepreneurial experience		4.41%	
Team size (2-4 members)	0.24%		
Team size (4-8 members)	0.69%		
Team size (8-16 members)	2.79%		
Network size & profile	2.48%		

Table 3: First differences of the significant independent variables for the different regions

Notes: First differences estimate the change in the probability due to a discrete change in the variable. Therefore, to illustrate the effects of entrepreneur's age and team size we choose different intervals. In the case of binary variables, the first difference is the effect of a discrete change form 0 to 1 in the variable. The standard error of the first differences is obtained by bootstrapping. Thus, it may lead to different results for the same variable. Taking this into account we estimate the first differences several times for the same variable in order to test whether the effect is statistically significant. All the coefficients included in the table are statistically significant at 95% level of confidence. The rest are omitted.