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The Role of Human Capital and Strategic Intent in Internationalisation Scope of New Technology-Based Firms

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Abstract

This paper explores the internationalization scope of new technology based firms (NTBFs) during their early years of operation. Internationalization is considered as a growth strategy in its own right whose successful implementation requires relevant resources and capabilities. We focus on the role of human capital in the form of the international experience of the firm founders, and its interaction with the strategic intent to internationalize from the outset.

Our analysis of a sample of 466 cases of UK and German NTBFs shows that human capital is a key success factor for international growth strategies. This human capital is an asset strongly facilitating the penetration of foreign markets, but it also appears that it is much more influential when backed up by a deliberate strategic intent to internationalize from the inception of the new venture. Similar conclusions can be drawn for the scale of entrepreneurial resources dedicated to the start-up: the higher they are, the higher the scope of internationalization, and scale is also leveraged by strategic intent.

Introduction

Research on internationalization as a growth strategy for newly created firms in the first years of activity has attracted significant interest in recent years. This body of research has challenged, and helped extend and renew, the theories of firm internationalization (Coviello & McAuley, 1999; Mcdougall & Oviatt, 2000). Unlike more traditional research on firm internationalization which highlighted environmental factors, competitive pressures and positions (e.g. Buckley & Casson, 1976; Dunning, 1988), recent research on start-up internationalization

investigates the processes and patterns through which newly created firms increase their overseas activities during their first years of operation (Andersson, 2000). Researchers have adopted a range of perspectives and concepts, including firms that are global from inception or "born globals" (Oviatt & McDougall, 2004; Rialp, Rialp & Knight, 2005), international start-ups (Johnson, 2004) whose geographic scope is international, but not global, and the internationalization processes of new firms (Hollenstein, 2005; Jones & Coviello, 2005).

For newly created firms, international expansion is not a 'natural' development that follows domestic expansion in a life-cycle model, but a key growth strategy in its own right (Coviello & McAuley, 1999). This is even more so the case for new technology based firms (NTBFs) because they often operate in global markets (Kuemmerle, 2005) and have to integrate global supply chains (Katz, Safranski & Khan, 2003). The successful implementation of an internationalization strategy thus requires the firm to access, deploy and exploit resources and capabilities which hold value-creation potential sufficient to gain competitive advantage (Peng, 2001; Rangone, 1999). Capital (financial, human, intellectual, social, technological) and knowledge-based capabilities such as organizational learning and innovation are often cited as examples of potentially valuable resources and capabilities for new ventures implementing international growth strategies (Kundu & Katz, 2003; Zahra, Sapienza & Davidsson, 2006). A number of studies have highlighted how human capital can be a key success factor in new venture creation (Cooper, Gimeno-Gascon & Woo, 1994; Davidsson & Honig, 2003). We argue in this study that the quality and quantity of international human capital, in other words the relevance and depth of international experience of the new venture founders, are critical success factors for the international growth strategies of start-ups. Arguably, the successful and rapid expansion of a newly created business across a wide range of countries requires significant initial human capital in the form of relevant international experience: this is different from a gradual process of internationalization where learning can substitute to experience (Bell, McNaughton, Young & Crick, 2003; Zahra & Hayton, 2007). Indeed, previous international and industry experience is a key differentiator of international new ventures by

comparison to domestic new ventures (Macdougall, Oviatt & Schrader, 2003). In addition to relevance, the depth of experience also matters: whether the firm is founded by a single entrepreneur or by a team has an impact on its growth potential (Reuber & Fischer, 1997). Hence the quantity and depth of international experience of the founding team is expected to influence the success of internationalization strategies for new ventures.

However, as argued by strategic management perspectives the mere presence of a resource, such as human capital, does not entail that the firm's strategy will automatically lead to its exploitation (Barney, 1991; Penrose, 1959). The entrepreneurial firm's international orientation has been identified to be strongly associated with internationalization strategies and outcomes (DeClerq, Sapienza & Crijns, 2005; Rialp, Rialp & Knight, 2005): having an international vision from the outset and international growth ambitions has been identified as a key determinant of new ventures' international success. From a strategic perspective, we argue that the international orientation and success of start-ups are underpinned by a strategic intent (Hamel & Prahalad, 1989) to seek international expansion. The founders' strategic intent subsequently directs and orients the exploitation, development, and leverage of the firm's resources and competences (Dierickx & Cool, 1989) and the learning and renewal of organizational capabilities (Teece, Pisano & Schuen, 1997). Therefore, in the case of early internationalizing new firms, the founders' strategic intent to internationalize at the launch of the new venture can be argued to play an influential role in the internationalization process. Another key finding of this body of research is that successful internationalization in the early years of the start-up relies upon experience, learning and international capabilities (Zahra & Hayton, 2006; Bell, McNaughton, Young & Crick, 2003). Indeed, previous international and industry experience is a key differentiator of international new ventures by comparison to domestic new ventures (Macdougall, Oviatt & Schrader, 2003).

To date, however, only a limited number of studies have explored the influence of human capital on the growth and/or internationalization of start-ups: Reuber & Fisher (1997) found that the founders' international experience prior to launching the venture had a positive effect on

international growth, Colombo & Grilli (2005) highlight that the founders' human capital in the form of technical experience in the industry and managerial training had a positive effect on firm growth, Yli-Renko et al. (2002) found that social capital and growth orientation facilitated international expansion, whilst Declerq et al. (2005) showed that learning, experience accumulation and international growth intention during the life of the firm had a positive effect on growth. Kundu & Katz (2003) in a study of Indian software firms found that international experience played a positive role, whilst international intentions played a more significant role at the individual rather than the organizational level. However, to date no research has examined the combined influence on the internationalization of new technology based firms of human capital and internationalization intent at the inception of the new venture.

In this study, we analyze a sample of 466 cases of UK and German NTBFs for which data about human capital relevant to international expansion and internationalization intent is available. Our results show that human capital in the form of the international experience of the start-up's founders is a key success factor for international growth strategies. This human capital is an asset strongly facilitating the penetration of foreign markets, but it also appears that it is much more influential when backed up by a deliberate strategic intent to internationalize from the inception of the new venture. Similar conclusions can be drawn for the scale of entrepreneurial resources dedicated to the start-up: the higher they are, the higher the scope of internationalization, and scale is also leveraged by strategic intent.

The rest of the paper is organized as follows: in the next section we present our hypotheses based on analysis of the relevant literature. This is followed by our research methodology. Analytical results are then presented and discussed. The paper concludes with a discussion of the main findings, and implications for practice and research.

Theoretical Background and Hypotheses

Entrepreneurs' International Human Capital

Human capital has long been identified as a critical strategic resource for new firms (Eisenhardt & Schoonhoven, 1990). The extant literature on the internationalization of new ventures focuses on international experience as the relevant dimension of human capital. This is usually conceptualized in one of two ways: the international experience of the founders prior to launching the new venture (e.g. Kundu & Katz, 2003), or the accumulation of international learning and experience during the life of the new venture (Declerq et al. 2005; Zahra & Hayton, 2007). We do not dismiss the importance of learning and experience accumulation, however many start-ups enter foreign countries in their very first years, which limits the role of these factors here. However, if international experience exerts an influence on the internationalization of new ventures, it can be argued that the stock of human capital at the beginning of the new firm should make a difference (Cooper, Gimeno-Gascon & Woo, 1994).

Following established conceptualizations, we distinguish between *generic* and *specific* human capital (Colombo & Grilli, 2005; Davidsson & Honig, 2003) in relation to international experience. In the context of internationalization strategies of NTBFs, we conceptualize generic international human capital as the start-up founders' international experience, gained for example from living, studying or working overseas. Such international human capital is expected to attune entrepreneurs to the requirements of conducting business in a different institutional environment, and presumably facilitate their international development efforts in direction of the countries where they have had experience. Although this experience may be specific to particular countries, it is generic in the sense that it deals with experience with an international context, rather than experience specifically relevant to the international development of a new firm. Thus, we conceptualize specific international human capital as the start-up founders' experience with the practice of international business. Such experience may be gained by working for an internationally-active employer -especially in a position exposed to international business- but does not necessarily require expatriation experience. Such experience would make the entrepreneurs familiar with the knowledge and processes required to develop international sales. Arguably,

although both types of human capital would be expected to have a positive effect, following the arguments of Colombo & Grilli (2005), we anticipate that specific international experience should have a greater effect. From this, we draw hypotheses 1a and 1b:

H1a:

The founders' international experience will have a positive impact on the internationalization of the start-up (*Generic international experience*).

H1b:

The founders' experience of international business will have a positive impact on the internationalization of the start-up (*Specific international experience*).

International Strategic Intent of Venture Founders

The influence of Resource-, Capabilities- and Knowledge-Based theories of strategy (Barney, 1991; Spender, 1996; Teece, Pisano & Schuen, 1997) on conceptualizations of entrepreneurial strategies has been acknowledged in extant entrepreneurship research (Rangone, 1999; Zahra & Hayton, 2007; Zahra, Sapienza & Davidsson, 2006). Penrose (1959) argues that firm growth is dependent on the services that managerial resources can perform: in other words, resources and how they are used have a non-trivial influence on firm growth. Over time, the deployment and exploitation of resources and capabilities is not determined by external influences, rather it is effected in context to support the implementation of the entrepreneur's strategic intent (Hamel & Prahalad, 1989; Dierickx & Cool, 1989). The resource-based approach thus highlights the volitional aspect of entrepreneurial strategies in ways that complement mainstream concepts in entrepreneurial research, such as entrepreneurial orientation (Lumpkin & Dess, 1996).

In the case of new technology based firms, international development is arguably a key dimension and concern of entrepreneurial strategy. Compared to other types of start-ups, technology new ventures are more likely to participate in global markets because their products address a global demand from the outset (Shrader, Oviatt & McDougall, 2000; Kuemmerle, 2005) or because they are integrated in global supply chains (Katz et al. 2003). The international dimension is therefore a

significant growth vector and thus an important strategic dimension for the new venture from its inception (Kundu & Katz, 2003). As mentioned earlier, a strategic perspective on the internationalization process suggests that the founders' intent to pursue an international growth strategy has a significant impact on the deployment, exploitation, and development of firm resources. From a strategic standpoint, the intention to internationalize from the outset will then direct where firm resources are deployed, and thus influence the internationalization of the firm. This leads to our second hypothesis:

H2:

The founders' initial strategic intent to go international will have a positive impact on the internationalization scope of the start-up (*International strategic intent*)

Combined Effect of Internationalization Intent and International Human Capital

The effective implementation of strategy requires the entrepreneur to have access to the right set of skills (Hrebiniak, 2006). Having the relevant human capital should facilitate the implementation of strategic intent: entrepreneurs possessing the appropriate skills and experience should be expected to have greater ease in translating intention into action. Further, the alignment of strategic intent and human capital should have a multiplier effect on resources, both in terms of selecting the best resource bundles for exploitations and in directing development efforts for new resources and capabilities (Peteraf & Barney, 2003; Eisenhardt & Martin, 2000). Therefore, we expect that entrepreneurs expressing an intent to internationalize the new venture from its inception would benefit from international human capital: experienced internationalizers should be more successful than less experienced entrepreneurs. This leads to hypothesis 3:

H3

Start-ups where internationalization intent and international experience are co-present experience greater internationalization. (*Experience and international strategic intent*)

Scale of Human Capital

Another factor moderating the impact of human capital in relation to internationalization is

the depth of resources provided by the founding team. Many original insights of theories of small firm growth are predicated on size effects: differential access to resources and capabilities for large firms enables economies of scale and scope not available to most start-ups (Garnsey, 1998). There are nontrivial scale and scope effects associated with the human capital brought to the firm by the founders and early employees: the larger the team, the greater the breadth and depth of knowledge and experience available to the start-up, providing better growth opportunities (Colombo & Grilli, 2005; Eisenhardt & Schoonhoven, 1990; McPherson & Holt, 2007). With respect to the internationalization of new technology based firms, a broad range of skills combined with international experience should enhance a start-up's internationalization prospects. Hence our fourth hypothesis:

H4:

The scale of entrepreneurial resources committed at inception will impact the internationalization of the start-up. (*Scale of resources*)

Combined Effect of Internationalization Intent and Scale of Resources

Following a similar line of argument as for Hypothesis 3 (above), we propose that the amount of human capital available to the start-up will impact the ability of the new venture to implement its strategic intent (Alvarez & Barney, 2002; Garnsey, 1998). Thus hypothesis five is:

H5:

A greater quantity of entrepreneurial resources will enhance the effect of strategic intent on the internationalization of the start-up. (*Scale of resources and international strategic intent*)

Methodology

Sample

In order to test our hypotheses, we use an extant database created to study the internationalization behavior of British and German high-technology young firms. The sample used for this research is made of start-ups set up during the period 1987-1996. It had already been

exploited and described in previous studies by other authors (AGF study, Burgel & Murray, 1997; Coeurderoy & Murray, 2008). The creation of the original data set required rigorous definitional clarification of the terms (1) young firm and (2) high-technology. The following criteria were adopted:

1. A start-up was taken to be ‘a legally independent company formed within the ten years preceding the survey’, i.e. in the 1987-1996 period. This age criterion is broader than used in other studies. Zahra et al. (2000), for example, establish the threshold at six years maximum while Shrader (2001) elects to use five years. In contrast, Storey and Tether (1998), and Autio et al. (2000) free themselves of the restriction of the age criterion to study the emergence of high-technology firms in Europe and the international growth of Finnish entrepreneurial firms, respectively. Our aim in this present research, however, was to find a defensible balance between research objectives and the limitations of young firm definitions. In Europe, the imposition of excessively restrictive age criteria would have seriously reduced the population available. A maximum of ten years was judged as an appropriate trade-off to allow for a sufficient internationalization history while still legitimately being seen as a young firm. Note, however, that firms in the sample are 5 years old on average.

2. To define the high-technology sector, Burgel et al. (2001) adopted the pragmatic definition proposed by Butchart (1987) and the OECD (1997), i.e. “those sectors whose R&D expenses expressed as a percentage of sales exceeds the average or those sectors which employed significantly more 'scientists and graduate engineers' than other sectors”. Because of the increasing blurring of the borders between production and service sectors in high-technology, Burgel et al. (2001) included high-tech services in addition to manufacturing firms in their survey. Over all, the sectors selected cover the following recognized ‘high-tech’ industries: software; information technology and telecommunications equipment; engineering; life sciences and medical sciences. A broadly comparable classification is used by industry analyst, Venture Economics Inc., to classify the technology investment activities of venture capital firms. Venture Capital has proved a highly

appropriate and important form of risk finance for new technology-based firms (Roberts, 1991; Edwards, 1999). One possible limitation of this method of selection is that it ignores genuinely high-technology firms that are classified in non-high-technology sectors – a Type II error bias. Type I errors, i.e. the acceptance of low tech firms sourced from high-tech NACE categories was addressed by a manual appraisal of the description of every firm record isolated from the Dun and Bradstreet (UK) and Creditreform (German) databases. By such means, firms in, for example, retail or wholesale activities were all removed from the final sample.

These methodological choices made it possible to identify populations of 2,671 start-ups in the United Kingdom and 5,045 equivalent companies in Germany. A stratified, random sample of 2,000 firms was drawn from each of the two databases. Accordingly, after circulating a postal questionnaire and filtering the returned surveys, a ‘clean’ sample of 362 firms in the United Kingdom and 232 companies in Germany was achieved. Because some companies had not yet made any foreign sales, the sub-sample of interest was 241 internationalizing firms in England and 134 equivalent firms in Germany. Importantly, the original data set allowed for the matched sampling of UK and German firms that had internationalized or stayed exclusively domestic in their sales activities. (See Burgel et al., 2001, for a detailed description of the original survey methodology.) The cleaned sample of returned questionnaires met several tests of representativeness despite the survey response rate being higher in the United Kingdom (24%) than in Germany (14%). In order to limit the risk of including fake start-ups, we dropped out a small number of new ventures exhibiting more than 10 employees at the time of creation or with more than 5 founders. Because of some missing values, our final sample for this study gets 466 cases – 326 UK firms and 140 German firms.

Variables

Dependent variable

International activity is commonly measured by (1) international sales as a percentage of total sales, and (2) the number of countries in which the company operates (Autio et al., 2000;

Jantunen and al., 2005). In the present study, we are mainly interested by the capacity of the start-up to deal with the scope of the international arena. Consequently, we chose to study the number of countries entered by the start-up at the time of the survey. For the purposes of this study, the percentage of foreign sales is less satisfactory than the number of countries entered because a high percent of foreign sales can be achieved by entering a small number of countries. For example an Austrian firm entering Germany -or a Canadian firm entering the USA- could achieve a high ratio of foreign sales by entering only one foreign country. The minimum number of entry is zero (domestic ventures) and the maximum is ninety. A sizeable number of cases (162, or 35.6%) are start-ups without any entries abroad. 53.2% of start-ups entered up to 2 countries and 75.1% up to 7. The rest of the distribution exhibits a long tail in the right (graph 1). The distribution of entries is thus far from a normal distribution and closer to a Poisson-like distribution. Basically, when looking at the internationalization scope of start-ups, we observe that, if 64.4% are rapidly exposed, the born global phenomenon is still an exception, even if around 10% out of the sample entered 20 countries or more.

Table 1. Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max	1	2	3	4	5	6	7	
1 Int. Experience abroad	.4785408	.5000761	0		1	1.0000						
2 Int. Experience in a MNE	.4570815	.49869	0		10	0.2938	1.0000					
3 Int. Strat. Intent	.6094421	.4883997	0		10	0.2386	0.1606	1.0000				
4 Size of the entrepreneurial team	2.019313	.9490529	1		40	0.0303	-0.0278	-0.0579	1.0000			
5 R&D (log)	1.964752	1.335001	0	4.56434	0.1399	0.0697	0.2117	0.0168	1.0000			
6 Nb of employees	3.175966	1.944151	1	10	-0.1045	-0.0565	-0.0520	0.3210	-0.0322	1.0000		
7 German start-up	.3004292	.4589373	0		1	-0.1593	-0.1033	-0.0511	0.0311	0.0414	0.0684	1.0000

Table 1. Descriptive statistics (cont'd)

Variable	8	9	10	11	12	13	14	15	16	17	18	19	20	21
8 IT/Com. Hardware	1.0000													
9 Engineering	-0.2195	1.0000												
10 Bio/Med./Life	-0.1665	-0.1409	1.0000											
11 Other ind.	-0.2899	-0.2453	-0.1861	1.0000										
_12 Created in_87	-0.0193	0.0425	0.0187	-0.0130	1.0000									
13_ Created in_88	-0.1288	-0.0096	0.0091	0.0032	-0.0816	1.0000								
14_ Created in_89	0.0463	0.0413	-0.0194	-0.0037	-0.1119	-0.0877	1.0000							
15_ Created in_90	0.0126	0.0339	0.0173	-0.0385	-0.1288	-0.1009	-0.1383	1.0000						
16_ Created in_91	0.0855	-0.0622	0.0239	0.0455	-0.1253	-0.0981	-0.1345	-0.1549	1.0000					
17_ Created in_92	0.0239	-0.0685	-0.0538	0.0507	-0.1193	-0.0934	-0.1281	-0.1475	-0.1434	1.0000				
18_ Created in_93	0.0254	0.0002	0.0716	-0.0396	-0.1132	-0.0886	-0.1215	-0.1399	-0.1360	-0.1296	1.0000			
19_ Created in_94	-0.0256	0.0380	-0.0448	0.0563	-0.1132	-0.0886	-0.1215	-0.1399	-0.1360	-0.1296	-0.1229	1.0000		
_20 Created in_95	-0.0281	0.0080	-0.0946	-0.0151	-0.0934	-0.0732	-0.1003	-0.1155	-0.1123	-0.1069	-0.1014	-0.1014	1.0000	
_21 Created in_96	-0.0506	-0.0240	0.0834	-0.0690	-0.0769	-0.0602	-0.0825	-0.0950	-0.0924	-0.0880	-0.0835	-0.0835	-0.0689	1.0000

Independent Variables

Entrepreneurs' international human capital As explained previously, entrepreneurs can accumulate international experience through two main channels: firstly, by living abroad for education or working purposes; secondly, by working in an international company (Coeurderoy and Murray, 2008). Both cases are forms of international learning, but they enrich different dimensions: studying or living abroad, on the one hand, provide generic knowledge of internationalization; working in an international firm organizational or specific knowledge on the other hand. Two main streams of experience are thus defined in the survey: i) managers having previously lived abroad (and thus experienced other regulatory environments) and ii) managers having worked previously in a multinational company (and thus experienced in managing in and across multi-country environments). We thus introduce two dummies to indicate whether, at the time of the creation, founders had already international experience, or not. Descriptive statistics show that 52.1% of founding teams had not any experience of living abroad; 54,3 % had not any experience of working in an international context. 29.2 % had a joint experience.

International strategic intent of venture founders. Many previous studies have adopted an individual perspective on entrepreneurial intentions (Jantunen et al., 2005) or attitudes (Preece and al., 1998). In the present research, however, we adopted an organizational perspective, as we study the international development of the venture. Consequently what we need to know is whether or not there was a strategic intention to international at the inception, not what the entrepreneurial motivations for that purpose were. In the questionnaire, respondents were asked whether they had a project of internationalization at the set-up of the new venture (“Indicate whether your product or service has been developed with the intention to sell abroad”). The dummy variable (“no/yes”) indicates the existence or not of the intention, whatever the motives of entrepreneurs (we stay here at the organizational level and do not explore individual factors). 60.9% of respondents declared that the internationalization project was included from the set-up of the venture (see table 1 for descriptive statistics). With such survey data, we first checked possible effects of ex post

rationalization (internationalizers having a retrospective bias in favor of “yes”; non internationalizers in favor of “No”). We thus did a cross-tabulation between this proxy and the realized internationalization (doing or not business abroad). We found that more than one third of non internationalizers (37.4%) expressed the original intent to sell abroad and that 26.0% of internationalizers declare they had not planned anything in that direction. These figures prove at least that respondents did not answer with a systematic bias of *ex post* rationalization. Another possible criticism is an endogeneity of the variable. This is mainly true at an individual level (personal willingness). At the organizational level (our level of analysis), however, such an intent is a factor influencing the design of the start-up project. This is in that way an exogenous driver with anteriority on the business set-up.

Scale of human capital. As we address the scale of entrepreneurs’ human capital, we measure it through the size of the entrepreneurial team, considered as the number of founders. Founders are fully dedicated in terms of time, effort and skills to the development of the start-up. 157 start-ups were set up by only one founder, 191 by two, 70 by three and larger teams are less frequent (56 cases). We use here a scale variable indicating whether the founding was made of one, two, three or more associates.

Control variables

We use a number of control variables which can also have an impact on the internationalization scope of the start-up. Following numerous studies having pointed out the influence of R&D efforts on internationalization, we include the R&D expenditures as a percentage of turnover (in logarithm form). We also take into account the size of the ventures at the start-up, measured through the number of employees (Zahra, Ireland et Hitt, 2000). We also control for the industry and the country of the start-up. In order to address possible industry/country specific effects, we add the interactions between the two variables.

Last, but not least, we introduced a variable indicating the year of the start-up formation (between 1987 and 1996). Indeed, it is necessary to control for the time spent between the survey

and the set-up, the older companies having of course more time to potentially increase their international scope. We thus introduce a dummy for each year of the period under survey (1987-1996). This is more precise than a continuous variable, in particular in case on non linear relationships.

Regression model

Because of the nature of our explained variable, we use a count regression model based on Poisson distribution (Hilbe, 2007). Rather than a Poisson regression model, we opted for a negative binomial model. The main reason was that the sample variance exceeds the sample mean and that tests on a Poisson regression model let see an overdispersion of responses. Despite the size of the sample (466 cases), we used a robust estimator of standard deviation to make sounder our estimates.

Results: Analysis and Discussion

Analysis

The analysis of the correlation matrix does not show high levels of correlations between variables. The highest correlations are logically between international experience and intention variables (between 0.2 and 0.3). This confirms a logical proximity of the two concepts and supports the idea of interaction effects. Complementary estimates, however, have shown that the coefficients of each variable are not disturbed by the presence or absence of others.

Our regression models present our negative binomial estimates for the baseline case (control variables only), the model without interactions and the full model with interactions.

The analysis of results shows a clear improvement of the baseline case with the introduction of independent variables supporting our research hypotheses (high increase of the Chi square statistics). Basically, our research hypotheses are substantially supported by our results at the level of the sample on a whole.

Table 2
Negative binomial regression models on the number of entries abroad by start-ups

			Robust		Robust		Robust
	Coef.		Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
International experience abroad				0.284*	0.143	0.652*	0.276
International experience in a MNE				0.493***	0.143	0.721**	0.263
Internationalisation Intent				1.306***	0.152	2.257***	0.407
Size of the entrepreneurial team				0.156*	0.077	0.314*	0.144
Internationalization intent * International experience abroad						-0.539°	0.330
Internationalization intent * International experience in a MNE						-0.345	0.310
Internationalization intent * Size of the entrepreneurial team						-0.266°	0.162
R&D (log)	0.185**	0.064	0.135*	0.062	0.142*	0.063	
Nb of employees	0.074*	0.032	0.072*	0.030	0.078**	0.029	
German start-up	-1.007**	0.338	-0.751*	0.320	-0.745*	0.310	
IT/Com. Hardware	0.460*	0.238	0.532*	0.240	0.508*	0.233	
Engineering	0.145	0.252	0.032	0.237	0.025	0.227	
Bio/Med./Life	0.545°	0.292	0.434	0.301	0.478°	0.299	
Other ind.	-0.042	0.266	0.013	0.250	-0.011	0.240	
German start-up * IT/Com. Hardware	0.472	0.547	-0.211	0.459	-0.195	0.469	
German start-up * Engineering	1.038*	0.467	0.980*	0.457	1.012*	0.455	
German start-up * Bio/Med./Life	0.807	0.532	1.080*	0.543	0.975°	0.547	
German start-up * Other ind.	0.979*	0.492	0.796*	0.418	0.839*	0.415	
Created in 1987	-0.093	0.361	-0.060	0.332	2.028***	0.368	
Created in 1989	-0.083	0.374	-0.261	0.327	2.163***	0.396	
Created in 1990	-0.155	0.356	-0.355	0.283	1.878***	0.377	
Created in 1991	-0.138	0.350	-0.268	0.302	1.883***	0.340	
Created in 1992	-0.468	0.349	-0.570*	0.324	1.971***	0.355	
Created in 1993	-0.681*	0.356	-0.613*	0.321	1.626***	0.371	
Created in 1994	-0.826*	0.396	-0.751*	0.349	1.589***	0.367	
Created in 1995	-1.182**	0.398	-1.062**	0.402	1.356***	0.388	
Created in 1996	-1.878***	0.464	-2.163***	0.393	1.105**	0.426	
Intercept	1.443***	0.382	-0.114	0.357	-2.908***	0.501	
Log pseudolikelihood	-1217.128		-1171.512		-1167.153		
Wald chi2	82.72**		241.16***		250.62***		

The international experience of founders appears to be strongly influential (H1a and1b). Both previous periods of living abroad and of working in an international company increase the capability of the firm to enlarge its international scope. The influence of the internationalization intent (H2) is also a striking point. This confirms that start-ups are more likely to globalize their business if their founders do strategically instill such a project from the set-up. The scale of the founders team has also a positive impact on the scope of internationalization.

Interaction effects exhibit expected effects, despite lower levels of significance (10% threshold). On the one hand, the international intent leverages the international experience of the founding team (with the exception of the experience in an international company). It also leverages the entrepreneurial capabilities of the start-up.

As regards the control variables, the R&D intensity of the start-up clearly favors the extension of the internationalization scope. This is in line with other studies (Autio et al., 2000). The size of the start-up at the creation matters too. The results also show country and industry specific effects. German start-ups in this sample have a lower tendency to enter a diversity of countries in their first years. Possible explanations could be relative barriers such as language, specific regulatory frameworks, and a lower national country for going at large. Note, however, the importance of interactions between country and industry. This let us think that specific industry developments in each country matter at first, maybe more that the country effect alone. Lastly, the set up year is significant too, exhibiting an incremental effect. Even if some of the population of start-ups spread abroad very quickly, time always keep an incompressibility dimension.

Discussion

One of the key results of this research paper is to provide clear evidence on the decisive role of entrepreneurs on the capabilities of new ventures to internationalize at a large scope. First, the international experience of founders has a strong leverage effect on the new start-up. This human capital is an asset strongly facilitating the penetration of foreign markets. But it also appears that this human capital is much more influential when backed up by a deliberate strategic intent

formulated at the inception of the new venture. A similar conclusion can be drawn from the scale of entrepreneurial resources dedicated to the start-up. The higher they are, the higher the scope of internationalization. But here too, the strategic intent of entrepreneurs has a leverage effect.

Considering the complexity of doing international business, ventures with robust and skilled founders team appear much better equipped to internationalize with a large scope. This is actually highly resource consuming not only because of the time required but also the diversity of skills to mobilize.

Even if the tested interactions are not as strongly significant as expected, they nevertheless converge in the same direction: they tend to show that, for NTBFs, an international strategy in the very first years is much more likely to thrive if the blueprint of internationalization is at the inception. This means the coupling of a deliberate strategy/intent by founders and with a venture with sound foundations (Human Capital & entrepreneurial resources). In that sense, we must keep in mind that born globals and rapid internationalizers remain exceptions in the population of start-ups. Our data and econometric model remind us that we have got a very thin right tail.

To the best of our knowledge, we are among the first ones to bring such clear evidence in this growing field of international entrepreneurship studies.

Conclusion

Through a large and representative sample of two important economies (Germany and the UK), our results bring new results on the phenomenon of early internationalizers, ie firms entering in the first years of existence a number of countries. We show that entrepreneurial ventures supported by specific human capital features are much more likely to spread internationally. And we also show that these assets are better mobilized when supported by a strategic intent of internationalizing. Consequently a deliberate project to develop abroad seems largely facilitating.

This research, however, has some limits. At first, the measurement of concepts could be refined. Our study is based on simple questions (with sometimes dummy scales) and we are aware that concepts

such as international human capital or strategic intent of venture founders would deserve more refinement. It would also be interesting to study other dimensions of internationalizers, in particular to better approach the phenomenon of born globals (Oviatt and McDougall, 1994).

Further developments could also be very fruitful. Firstly, the research is based upon start-ups from two countries. It would be interesting to validate the results with a wider scope of countries. It would also be very interesting to better understand the role of entrepreneurial networks in this process, in particular those driven by large MNEs (Acs and Terjesen, 2007).

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