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Characteristics of high-growth entrepreneurs in Latin America

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Abstract Scholars and governments presumed that growing the rate of entrepreneurs would naturally result in economic and job growth, and entrepreneurship has widely been viewed as an important tool for developing economies. Yet recently scholars have questioned the empirical evidence regarding the actual contribution of entrepreneurship to economic development. Recent contributions to the field suggest that not all entrepreneurial activity has a positive effect on economic growth in developing regions. The Theory of Planned Behavior (TPB) provides a unique lense in assisting the predictive capability of entrepreneurial motivation. In this research, we focus on what factors influence the motivation of some entrepreneurs to seek a high-growth model as these growth oriented entrepreneurs, usually associated with opportunity-motivated firm founding, are the most likely to actually create jobs in developing countries. We utilize motivation for founding, five entrepreneurial competencies and three firm characteristics to predict growth expectations of entrepreneurial growth expectations. Leveraging responses to the Global Entrepreneurship Monitor survey from more than 100,000 entrepreneurs in 19 Latin American countries, we discovered the existence of a triple interaction effect amongst opportunity-based entrepreneurs with higher levels of education and an export orientation and their growth expectations. In discussing the results, we reflect on the public policy implications for promoting the desired types of entrepreneurship in developing regions.

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Introduction

Scholars and policymakers have long sought to uncover the secret formula that will lead to increased productive entrepreneurship in developing economies (Baumol 1990). The reason for such persistence has been the belief, and disputed empirical results, that fostering a vibrant entrepreneurial community is a critical factor in obtaining job growth in developed and developing economies (Birch 1979). Yet, Shane (2009) argues that start-up companies in an economy are not a 'magic bullet' that leads to job creation, transforms depressed regions, generates innovation, and spawns other forms of economic wizardry. Looking to entrepreneurs to grow an economy and create jobs is not a numbers game; instead, positive economic results arise from encouraging the formation of high-growth companies (Shane 2009; Davidsson and Henrekson 2002). As economies develop, high growth entrepreneurs may provide the missing link to achieve the economic and job growth expectations of developing economies (Shook and Bratianu 2008; Amorós et al. 2012).

Researchers have dedicated significant effort to understanding what factors influence the motivation of entrepreneurs to start and grow their enterprises (Oosterbeek et al. 2010). Most of this research has focused on theoretical and empirical developments pertaining to predicting nascent firm formation. Given that mixed results of empirical studies of the role of higher rates of entrepreneurship on economic and job growth (Capelleras et al. 2008), as well as the ongoing debate regarding the capability of public policy to even achieve a net increase in new entrepreneurs (Acs and Amorós 2008), it is somewhat surprising, that there is much less research on predicting growth expectations of aspiring entrepreneurs, since such entrepreneurs are the only ones capable of contributing to economic and job growth in a society (Shane 2009).

The theory of planned behavior (TPB) introduced by Ajzen (1991) suggests that motivational factors (behavioral intentions) are the best predictors of future behavior. Ajzen's theory has a long history in entrepreneurship scholarship in its application to understanding what factors influence entrepreneurial motivations (Boyd and Vozikis 1994) and in predicting rates of nascent entrepreneurship (Serida and Morales 2011). The TPB has three core belief constructs which form the basis of the theory's predictive capability: behavioral beliefs, normative beliefs and control beliefs. Behavior beliefs represent the perceived likelihood of desired outcomes of potential action. Normative beliefs are associated with the perception other relevant individuals or groups have regarding a potential action. Finally, control beliefs are associated with an individual's perception of their ability to perform a particular behavior or action. Perceived behavior control (PBC) was introduced into the TPB to assist the theory's predictive capabilities in contexts where an individual perceives that exogenous factors affect their volitional control (Armitage and Conner 2001).

Entrepreneurship scholars have found consistent results in predicting entrepreneurial motivations from the TPB belief constructs, with about 35–40 % of the variation in

motivation or intention to start a business, explained with TPB models (Kautonen et al. 2013). Kautonen et al. (2013) published one of the first complete tests of TPB in entrepreneurship research by leveraging a longitudinal approach to explore the relationships between beliefs, motivations and actions. With a sample of nearly 1000 individuals in Austria and Finland between 2011 and 2012, Kautonen et al. (2013) found that 59 % of the variation in motivation and 31 % of the variation in action to form a venture were predicted by the TPB model.

Entrepreneurship has traditionally been defined as discovering, evaluating, exploiting, and responding to situational cues and existing sources of opportunity; it has additionally referred to the group of enterprising individuals who engage in such processes (Shane and Venkataraman 2000; Venkataraman 1997). Entrepreneurship is the nexus of two phenomena: the work of entrepreneurs, i.e., those uncertainty-driven individuals who start and run businesses, and the presence of lucrative opportunities (Shane and Venkataraman 2000; Venkataraman 1997). Entrepreneurship opportunities typically involve situations in which new goods, services, raw materials, and modes of organization can be introduced and sold at a cost that is higher than the cost of production (Casson 1982).

The overall aim of this paper is to leverage insights from TPB to explain the growth-expectation of entrepreneurs. In particular, this paper expands a research question addressed by Cassar (2006: 612) that has not been adequately answered: What determines the scale of entrepreneurs´ growth intentions? In order to address this question, we establish four hypotheses pertaining to motivations for founding, entrepreneurial competencies, firm characteristics and growth expectations. These hypotheses were tested with data from more than 100,000 entrepreneurs in 15 countries in Latin America.

The statistical findings of this study indicate that the direct association between the dependent variable (growth-expectation) and entrepreneurs' competencies is significant. Entrepreneurial competencies are defined in this study as alertness, self-efficacy, networking, risk-tolerance, and education. We discovered a triple interaction effect between entrepreneurs' opportunity-motivation and entrepreneurs' years of schooling with three firm characteristics (operational phase, export-oriented and innovation-oriented).

Below, in Section 2, we introduce our hypotheses derived from the extant literature regarding entrepreneurial intent and growth motivations. Section 3 describes the data collection and methodological approach to testing our four hypotheses. Section 4 presents the empirical findings and in Section 5, we present a discussion of our results and implications for policymakers.

Hypotheses development

Motivation

There are a range of reasons an individual may choose to become an entrepreneur. In the past few decades, entrepreneurship researchers, particularly those involved with or utilizing data from the annual study of entrepreneurs around referred to as the Global Entrepreneurship Monitor (GEM), have chosen to differentiate necessity-based entrepreneurs from opportunity-based entrepreneurs. Necessity-based entrepreneurship occurs when individuals in an economy feel they have no alternative job prospects, so they

start a business as an alternative to unemployment. Whereas opportunity-based entrepreneurship emerges when individuals identify a new business opportunity that they perceive will be successful. Leveraging GEM data, Amorós et al. (2012)) concluded that developing countries, specifically in Latin America, must transform from low-value added, necessity-based entrepreneurship, towards opportunity-based entrepreneurship in order to support economic development and the transition towards becoming developed countries. Yet Amorós et al. (2012) and most other prior studies, focused more on macro-level variables affecting the rates of opportunity-based entrepreneurship. There is a gap in our understanding of how individual factors influence the motivation of entrepreneurs in developing countries to initiate opportunity-based ventures.

Referring back to the Theory of Planned Behavior, opportunity-based entrepreneurship occurs when individuals possess behavioral, normative and control beliefs regarding their capability of successfully launching a new business. Strong evidence identifies opportunity, as opposed to necessity, as a driver of entrepreneurship (Williams 2009). Necessity-driven entrepreneurship is common in poor countries, whereas opportunity-driven entrepreneurship is common in wealthy countries (Acs and Amorós 2008). Thus, while it may be commonplace to observe high rates of total entrepreneurship activity (TEA) in a developing country or region, much of that entrepreneurship is likely to be necessity-based. While it is possible for necessity-based entrepreneurship to turn into high-growth ventures (Shane 2009), countries seeking to grow their job numbers and economy are more interested in supporting nascent entrepreneurs with high-growth motivations. Therefore, we expect that the higher rate of opportunity-based entrepreneurship would be associated with higher growth expectations.

H1: *There is a direct and positive relationship between opportunity-based entrepreneurship and growth expectations.*

Entrepreneurs' Knowledge, Skills and Abilities (KSA)

Referring to insights gleaned from the Theory of Planned Behavior, and in line with Baum et al. (2001), aspiring entrepreneurs are more likely to act when they believe they can achieve the desired outcome and that the outcome is primarily within their own locus of control. Baum et al. (2001) speculate that an entrepreneur's technical form of expert power facilitates the implementation of the entrepreneur's vision and strategy. They also hypothesize that these entrepreneurial skills may serve as sources of competitive advantages that rivals find difficult to identify and imitate.

We have chosen to refer to the grouping of individualized capabilities and resources of entrepreneurs as entrepreneurs' knowledge, skills and abilities (KSA). KSA has long been utilized in the human resource literature as an inclusive term to reflect individual and firm level human capital assets (Schumann et al. 1994; Cabello-Medina et al. 2011). KSA is a construct which been adopted in extant entrepreneurship research for similar purposes (e.g. Baum et al. 2001; Goktan and Gupta 2013). The first entrepreneurial competency is human capital, which, in prior studies, has been a significant predictor of entrepreneurs' growth expectations and constitutes one of the core factors in the entrepreneurial process (Bosma et al. 2004; Cooper et al. 1994). Within the context of the tourism industry in Israel, Haber and Reichel (2007) found that the

human capital of the entrepreneur was the greatest contributing factor to performance. According to Unger et al. (2011), entrepreneurs who have invested more in human capital are likely to strive for more growth in their businesses than individuals who have invested less. Moreover, human capital increases owners' capabilities for discovering and exploiting business opportunities, helps them to acquire financial and physical capital, and assists in accumulating new knowledge and skills. Taken to the extreme, if all owners possessed identical human capital, there would be no competitive advantage (Unger et al. 2011). The majority of the evidence from research suggests that entrepreneur human capital is positively associated with both actual scale and growth (Cooper et al. 1994).

Human capital is complex and often intangible, making it difficult to identify and measure (Brush et al. 2001). Here, we use education and self-efficacy as the two measures of human capital. Research leveraging the theory of planned behavior on the role of entrepreneurial-specific education and its impacts on entrepreneurial intentions has been mixed, at best (Shook and Bratianu 2008). Education has traditionally been used as a non-task-related human capital attribute (Cassar 2006). The reason for this is not only because education may provide skills for understanding the business environment, dealing with stakeholders, making better or more informed decisions, or allowing the application of technical knowledge to operational or business functions but also because well-educated entrepreneurs want to receive higher compensation in return for their investments (Becker 1964). As a significant attribute of human capital, entrepreneurs' education has long been argued to be critical resources for success in entrepreneurial firms (Florin et al. 2003; Sexton and Upton 1985). Researchers have suggested that human capital in the form of education may play an even larger role in the future, not only because high-educated people make more profits but also because knowledge-intensive activities in most work environments are constantly growing (Bosma et al. 2004).

After education, self-efficacy is one of the most widely tested human capital attributes. Entrepreneurship researchers have found, consistent with TPB, that entrepreneurs' self-efficacies in relation to their abilities to start and grow their ventures are associated with venture performances (Chandler and Jansen 1992; Baum et al. 2001). Self-efficacy consists of various outcomes of investment into human capital, including experience and knowledge. On the basis of the empirical analysis of a rich Dutch longitudinal data set of firm founders, Bosma et al. (2004) found that an entrepreneur who has former experience in their business's industry rates more highly by all performance measures. Self-efficacy is helpful for acquiring other utilitarian resources, i.e., financial and physical capital (Brush et al. 2001). Furthermore, self-efficacy can partially compensate for a lack of financial capital, which is a constraint for many entrepreneurial firms (Chandler and Hanks 1998), because self-efficacy prepares the entrepreneur to discover specific opportunities that are not visible to others (Shane 2000).

Social capital, which we define as networking, has consistently been linked to firm growth (Ostgaard and Birley 1994). Bosma et al. (2004) found that human capital as well as social capital investment contribute significantly to the explanation of the cross-sectional variance of the performance of small firm founders. Based on data from 1851 Dutch firms over a 110-year period, Pennings et al. (1998) found that social capital is an equally important predictor of firm performance compared to human capital. High-growth entrepreneurial ventures are generally run by a small number of colleagues, who act like a social clique in which all members are interconnected by emotionally intense links and,

therefore, can lack the requisite diversity of reference frames about best practices, customer needs, competitor moves, and so on (Florin et al. 2003). Social capital theory was founded on the premise that a network provides value to its members by allowing them access to the social resources that are embedded within the network (Seibert et al. 2001). The social resources embedded in such networks are thought to reduce the amount of time and investment required to gather information (Florin et al. 2003).

Moreover, in addition to the human and social capital factors, we include two entrepreneurial competencies that have traditionally been associated with venture growth: alertness (Baum et al. 2001) and risk-tolerance (Palich 1995). It is commonly recognized that market opportunities emerge in part due to asymmetries of information and that some entrepreneurs are more capable of identifying resulting opportunities. One of the most influential works in the field of entrepreneurship is Kirzner's (1973, 1979) development of the entrepreneurial alertness construct. In Kirzner's work, entrepreneurs are said to have particularly skills associated with alertness to new opportunities, in large part due to information asymmetries whereby the entrepreneur possesses unique knowledge which allows for the opportunity to be identified. While there is debate in entrepreneurship research regarding the importance of risk-tolerance amongst entrepreneurs, this is still a construct which is seen to be of importance in predicting entrepreneurial orientation (Hvide and Panos 2014). We therefore decided to include risk tolerance as a relevant entrepreneurial competence.

H2: *Entrepreneurs' competencies have direct and independent effects on growth expectation.*

Firm characteristics

Finally, three firm characteristics are also included: operational stage, export-oriented, and innovation-oriented. Researchers have found consistent empirical support for the linkage amongst firm performance and top management characteristics and innovation and export strategy (Schumpeter 1934, Michel and Hambrick 1992; Acs and Audretsch 2005; Ashourizadeh et al. 2014).

With regard to operational stage, Aldrich and Wiedenmayer (1993) and Stinchcombe (1965) argue that operating firms have an advantage over early-stage business ventures because young enterprises suffer from a liability of newness, which refers to a higher propensity for young enterprises to fail compared to older and more established enterprises. For example, owners of young businesses are typically confronted with many different and potentially new tasks and must respond to new situations that may require immediate decisions and actions. However, routines and strategies have yet to be developed), and accomplishing daily tasks in the business, solving problems, and making entrepreneurial decisions (e.g., decisions to act upon business opportunities) can therefore pose cognitive challenges to owners of young businesses.

We believe factors such as export orientation are particularly relevant with respect to predicting growth expectations of new ventures in a developing country context because the generally small domestic markets within each country of a developing region, can not support a large number of high growth firms only serving the local market. This is of course not the case with large developing countries that often have sufficient domestic

demand and barriers to entry (e.g. cultural, language) such as Brazil whereby local entrerpeneurs may be able to scale within reason without crossing borders.

From the early days of entrepreneurship research, scholars have long assumed a strong connection between entrepreneurship, innovation and economic growth (Schumpeter 1934). Scholars have continued to find connections between innovation-oriented enterprises and employment growth within the firm and economy-wide (Wong et al. 2005). In a recent study of more than 200 Tunisian micro-enterprises, Omri and Ayadi-Frikha (2014), found that innovation orientation at the firm level not only supports product level innovation but also supports job creation and growth at the firm and societal level:

"According to the results, small businesses benefit significantly more from a strategic innovation orientation than from just focusing on developing innovative products. An organisational orientation towards innovation can lead to the development of more ambitious goals, the allocation of resources in areas where they create more job and value." (Omri and Ayadi-Frikha 2014: 327).

H3: *There is a direct and positive relationship between growth expectation and three characteristics of a firm*: *operational phase*; *export orientation and innovation orientation.*

Interaction of Motivation, Entrepreneurial KSA and Firm Characteristics

Based on our hypothesis development above, we also suggest that motivation, entrepreneurial competencies and firm characteristics, combine to predict entrepreneurial intentions for growth of their ventures. Since intentions are strong predictors of behavior (Ajzen 1991), a finding of an interaction effect amongst all of our independent variables and growth expectations would suggest that the identified variables are in fact important in expanding our collective understanding of how high-growth ventures form in developing countries. Given the theoretical and empirical support from extant research for our individual hypotheses 1, 2 and 3, it is reasonable to believe there may in fact also be an interaction amongst the predicted variables with growth expectation. This line of reasoning is consistent with the work of Steel and König (2006)) who advanced an integrative theory of motivation by incorporating insights from four different theoretical frameworks (picoeconomics, expectancy theory, cumulative prospect theory and need theory). Their unifiying theoretical framwork, temporal motivation theory, predict that invidual, firm and external factors likely interact to influence the motivation and expectations of decision-makers. There have been few studies to date seeking to understand how factors such as those in this study interact to influence growth expectations, which would be predicted with TMT framing.

As firms accumulate characteristics associated with perceived potential growth, the founders of such firms would be expected to gain confidence in their ventures, leading to a potential combinatorial relationship between our independent variables and growth expectations. Specifically we predict here that a positive interaction effect will be found amongst firms founded because of an identified opportunity, entrepreneurial KSAs and firm characteristics.

H4: *Motivation*, *entrepreneurial KSA and firm characteristics interact to yield additional returns in growth-expectation.*

Methods

We were interested in understanding growth orientations of entrepreneurs in developing regions. The study analyzes a relatively homogenous sample of the adult population (between 18 and 64 years old) that is fairly representative of entrepreneurs in one developing region, Latin America. Entrepreneurs have been surveyed in the following 19 available countries: Peru, Mexico, Argentina, Brazil, Chile Colombia, Barbados, Guatemala, El Salvador, Costa Rica, Panama, Venezuela, Bolivia, Ecuador, Uruguay, Puerto Rico, the Dominican Republic, Trinidad and Tobago, and Jamaica. Here we expand Amorós and Cristi (2008) study of six Latin American countries and Acs and Amorós (2008) selection of five Latin American economies used to explain regional entrepreneurial dynamics. All of the variables used in this study were derived from the GEM Adult Population Survey (APS) from 2001 to 2013. The sample totals over 100,000 entrepreneurs, who are defined in the GEM database as those who created, own and manage an early-stage or operational enterprise. Logarithms are used to reduce the effect of extreme positive skewness.

According to Amorós and Cristi (2008: 386), GEM provides harmonized, internationally comparable data. The stability in the GEM's rates indicates that these indexes may be seen as a relatively stable entrepreneurial dynamics measure (Reynolds et al. 2005) and as an economy's structural characteristic (Van Stel et al. 2005: 314). Klyver et al. (2013: 479) add that the underlying method of the GEM population survey is to collect information from a representative sample of adults in different countries. The authors argue that while it makes all possible efforts to conduct the surveys in a similar fashion as possible across countries, there are small variations in sampling methods due to country variation in accessibility and availability of respondents (for the complete GEM project measurements see Reynolds et al. 2005).

On an annual basis, entrepreneurs are interviewed as part of GEM surveys of adult entrepreneurial involvement around the world. The GEM project is the largest international research initiative analyzing the propensity of a country's adult population to participate in entrepreneurial activities and the conditions that enhance these entrepreneurship initiatives. The GEM projects methodology provides indicators from individuals involved in different stages of entrepreneurship dynamics, including for example, star-up efforts, nascent entrepreneurs (i.e., individuals involved in setting up a business), new firms (i.e., those that have paid salaries and wages for more than 3 months and less than three-and-a-half years), and established firms (i.e., those that have paid salaries and wages for more than three-and-half years) (Amorós et al. 2014).

Following (Amorós et al. 2012, 2014), we believe that the GEM's database fits our study well because it is a comprehensive source of information that enables us to analyze and understand the growth expectation of new ventures in Latin America. Kantis (2005) and Amorós et al. (2012) sustain that Latin American countries have great potential to generate competitiveness and wellbeing through the creation of new firms; however, they have generally been unable to consolidate entrepreneurial dynamics. In this sense, Latin American governments not only need to emphasize macroeconomic variables, which continue to be important with a qualifying role rather than a differentiating role, but they also need to begin prioritizing their development by taking into account entrepreneurship activity in their countries Amorós et al. (2012).

Dependent variable

We chose expected venture growth as the performance measure rather than other indicators of performance because entrepreneurship researchers have pointed to growth as the crucial indicator of venture success (Low and MacMillan 1988; Baum et al. 2001). Specifically, the focus is on growth in the number of employees instead of sales. According to Bosma et al. (2004: 231), sales could be an inaccurate measure because profit may be somewhat misleading in the first two years of the venture because initial (sunk) costs often have to be gained back, reducing profit. Furthermore, while profit is mainly an individual performance measure, the employment created by an entrepreneur can be seen as a social performance measure. The expectation of employee growth is believed to be an accurate measure because, as Bosma et al. (2004) suggest, entrepreneurs who indicated employment growth as a goal indeed generate more employment, consistent with insights from the Theory of Planned Behavior which suggests that intentions and motivations are the best predictor of behavior and outcome.

Therefore, in this study, entrepreneurs' growth expectations are based on the expected creation of jobs instead of on sales or profit. The proxy used in the analyses is the logarithmic scale of the difference between the answers to these two questions: (1) "not counting owners, how many people, including both present and future employees, will be working for this business five years from now? Please include all exclusive subcontractors, meaning people or firms working ONLY for this business, and not working for others as well;" and (2) "not counting the owners, how many people are currently working for this business? Please include all exclusive subcontractors, meaning people or firms working ONLY for this business and not working for others as well."

Independent variables

The independent variables in the analyses are the motivations for startup and the attributes that entrepreneurs reported regarding themselves and their firms: self-efficacy, networking, risk-tolerance, education, and firm characteristics. Motivation was the first independent variable utilized in our model. This variable targets the entrepreneur's initial motive for founding the venture, necessity-based or opportunity-based. The proxy used for assessing initial motivation was based on responses to the following question: "Are you involved in this startup to take advantage of a business opportunity or because you have no better choices for work?" The available answers were as follows: "(1) take advantage of business opportunity; (2) no better choices for work; (3) combination of both of the above; and (4) have a job but seek better opportunities." Questions "2" and "3" were recoded with a value of "0" to measure necessity-motivation, and questions "1" and "4" were recoded with a value of "1" to measure opportunity-motivation.

Baum et al. (2001). Identified and tested five KSA as predictors of entrepreneurs' growth expectations: (1) alertness, which differs from opportunity-motivation mainly in that it targets future opportunities; (2) self-efficacy, which consists of various outcomes of investment into human capital, such as experience and knowledge; (3) networking, which is the entrepreneur's accumulation of social capital; (4) risk-tolerance, which is the entrepreneur's propensity to undertake the risk of failure; and (5) education, which is the entrepreneur's total number of years of schooling.

Alertness was measured by the following question: "In the next six months, will there be good opportunities for starting a business in the area where you live?" Self-efficacy was measured by asking the entrepreneur: "Do you have the knowledge, skill and experience required to start a new business?" Networking is based on the following question: "Do you know someone personally who started a business in the past 2 years?" We recognize that an affirmative response to this question does not necessarily ensure the entrepreneur has an ongoing relationship with the person referred to, or that the entrepreneur is particularly good at networking. However we do believe that an affirmative response to this question can be seen as a proxy for entrepreneur's potential capability for networking, demonstrated by similar uses of results from this question in studies of entrepreneurs and their social networks (Klyver et al. 2008).

Risk-tolerance is determined by the following question: "Would fear of failure prevent you from starting a business?" Education is measured by the entrepreneur's total number of years of schooling.

The second set of explanatory variables is based on three characteristics of the firm (operational phase, export orientation and innovation orientation). Operational phase is recoded as "0" for the starting phase if the firm is less than one year old and the current number of employees is 0 and as "1" if the firm's age is greater than one year or the current number of employees is also greater than one. Entrepreneurs' export orientations were measured by asking the entrepreneurs the following question: "What proportion of your customers normally live outside your country?" The answers were recorded as follows: "(1) more than 90%; (2) more than 75%; (3) more than 50%; (4) more than 25%; (5) more than 10%; and (6) 10% or less?" Finally, innovation-orientation is an index based on the average of three questions scaled from 1 to 3, where "1″ represents low innovation and "3″ represents high innovation. The three characteristics of the firm are expected to enter the regressions models with positive signs.

Control variables

Entrepreneur age and entrepreneurs' household sizes are included as demographic controls. Entrepreneur age is a straightforward answer, gender is coded "0″ for female and "1″ for male, and entrepreneurs' household sizes were measured by asking the following question: "How many members make up your permanent household, including you?" Finally, service sectors and country dummies were also included as additional controls. The four service sectors included the following: (1) extractive services, (2) transforming services, (3) business services, and (4) consumer-oriented services. In all regressions, the consumer-oriented service sector was selected as the reference because it has by far the highest number of responses. Similarly, for country dummies, Brazil was selected because it is a good rule of thumb to select the dummy with the greatest number of cases, although (statistically speaking) selecting the reference is not important if other variables are not affected (Table 1).

Methodology

Multivariate regression models with the ordinary least squares (OLS) option are used in all the specifications. As a standard measure of significance, the two-tail *p*-values test is used. The rejection barrier is set at the lower level of .05. Further, the analyses use

standardized variables to enable comparisons among effects. These variables have been used in many studies, most recently in Ashourizadeh et al. (2014). (Growth-expectation, household size and exports are expressed using logs to reduce the effect of extreme positive skewness.) As a novel approach, the study looks into the influence on entrepreneurs' growth expectations of the moderating effect between opportunity-motivation and the education construct and also three firm level characteristics.

Results

The results in Table 2 show that entrepreneurs' growth-expectations are generally higher when the entrepreneur's motivation for founding the firm was driven by an opportunity as opposed to necessity. This is consistent with prior research and supports Hypothesis 1. Hypothesis 2 explored the relationship between the five previously identified entrepreneurial competencies and growth orientation. Again, consistent with extant research, we confirmed that alertness, self-efficacy, networking, risk-tolerance and education are positively associated with growth orientation, thus also confirming Hypotheses 2. However, the size of the standardized slope coefficient of education is relatively small, which challenges the underlying theory that predicts a stronger relationship between education and growth expectations. Hypothesis 3 was concerned with assessing the relationship amongst three firm characteristics: operating phase, export-orientation and innovation-orientation. Table 2 shows that two of the three variables (export and innovation orientation), report the expected sign to partially support hypotheses Hypothesis 3. Whereas the relatively large size of the standardized coefficient and the highly significant negative sign for operational phase imply that younger firms in the starting phase of operation are expected to increase the number of employees in a five-year span. The overly optimistic expectation of growth for starting entrepreneurs is contrary to the fact that most firms do not survive the valley of death and that an established and operating firm should have a greater chance to survive and grow in the future because owners of older businesses have a "track record" and have created routines and established practices that have become part of daily operations (Unger et al. 2011: 345).

The most unique aspect of this research was to combine motivation, entrepreneurial competencies and firm characteristics in a model which seeks to predict variations in growth expectations of entrepreneurs in developing countries. Interestingly, we did not find consistent significant results for a complete triple interaction effect as predicted in Hypotheses 4. Yet, as highlighted in Table 2, we did discover a triple interaction effect between motivation, one entrepreneurial competency, *number of years of education*, and one firm characteristic, the *export orientation*. In other words, the numbers of employees are expected to increase with the simultaneous combination of three factors: (1) the enterprise was motivated by opportunity instead of necessity; (2) the entrepreneur has relatively more years of schooling; and (3) the proportion of customers from abroad is relatively higher. However, it is important to note that the statistical support of Hypotheses 4 are weakened by the relatively small size of the effects represented by the central arrow in Fig. 1.

While mostly significant and positive, the relationship we proposed showed relatively low R^2 values. A discussion on effect sizes is fundamental to explain these results. An effect size is a descriptive statistic, which shows the strength/direction of the relationship between variables, without suggesting that the relationship in the data

Table 1 Characteristics of the sample

Dependent variable		
Entrepreneurs' growth-expectation	Mean	68 %
(number of employees, years 0 to 5)	Standard deviation	15 %
Entrepreneurs' motivation		
Opportunity	Necessity-motivated	44 %
	Opportunity-motivated	56 %
Entrepreneurs' KSA		
Alertness	Not opportunity-perceiving	35 %
	Opportunity-perceiving	65 %
Self-efficacy	Not sefl-efficacious	14 %
	Self-efficacious	86 %
Networking	No social capital	43 %
	Social capital	57 %
Risk-tolerance	Risk-averse	25 %
	Risk-willing	75 %
Education	Mean	11 years
	Standard deviation	4.5 years
Firm characteristics		
Operating phase	Starting	41 %
	Operating	59 %
Export-oriented	91–100 % of customers are abroad	2 %
	76–90 % of customers are abroad	1 %
	51–75 % of customers are abroad	2 %
	26–50 % of customers are abroad	3 %
	11–25 % of customers are abroad	5 %
	1–10 % of customers are abroad	21 %
	0 % of customers are abroad	66 %
Innovation-oriented	Mean	1.53
	Standard deviation	0.49
Demographics		
Age	Mean	39.4 years
	Standard deviation	12.7 years
Gender	Female	45 %
	Male	55 %
Household size	Mean	3.9 persons
	Standard deviation	2.2 persons

Entrepreneurs' growth-expectations are shown as the expected percentage increase in the number of employees from year 0 to year 5. However, in all regression tests, the dependent variable is calculated using the logarithmic scale of the difference between the two questions related to expected jobs creation. (The data are from all APS thru 2013)

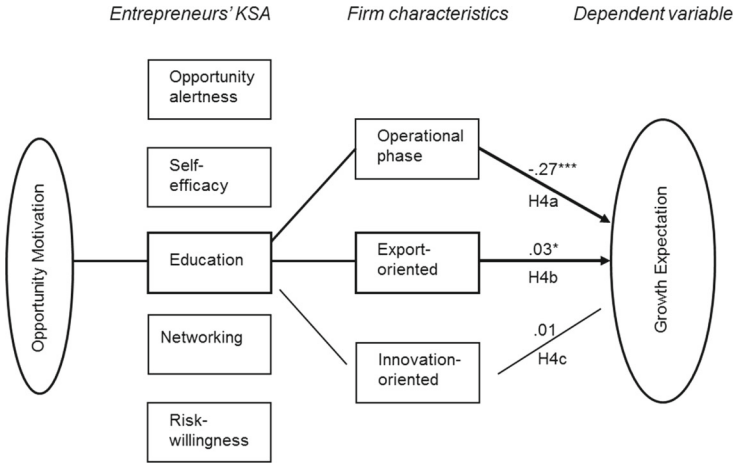
reflects a true relationship in the population (Durlak 2009). Thus, effect size is a complement to inferential statistics such as *p*-values. Cohen (1988) provided guidelines

Table 2 Entrepreneurs' growth-expectations affected by opportunity, education, and exports

	Main effects		*Triple interaction*	
	Standard coefficient	*P-value*	*Standard coefficient*	*P-value*
Entrepreneurs' motivation				
Opportunity	0.06	<.001	0.09	
Entrepreneurs' KSA				
Alertness	0.05	<.001	0.05	<.001
Self-efficacy	0.04	<.001	0.04	<.001
Networking	0.06	<.001	0.06	<.001
Risk-tolerance	0.03	<.001	0.03	<.001
Education	0.03	0.005	0.05	0.001
Firm characteristics				
Operating phase	−0.15	<.001	−0.09	
Export-oriented	0.02	0.065	<.01	
Innovation-oriented	0.08	<.001	0.08	
Triple interaction effects				
Opport-mot * education			0.19	
Opport-mot * education * phase operation			−0.27	<.001
Opport-mot * education * export-oriented			0.03	0.096
Opport-mot * education * innovation-oriented			0.01	0.706
Controls				
Age	−0.09	<.001	−0.09	<.001
Gender	0.04	<.001	0.04	<.001
Household size	0.03	0.001	0.03	<.001
Country	Intercept for each not listed here			
Service sectors				
Adjusted R^2	14.30 %		14.74 %	

Number of observations =11,194. Household size and exports are expressed using logs

for social sciences on small, medium and large effect size for a specified range of Person's *r* correlation, and the related coefficient of determination R^2. Effect sizes are on the average for the data set as a whole, and if a R^2 coefficient is relatively high/low, this does not necessarily suggest that every participant's Y score is predicted equally well. There may be subgroups of participants from whom the effect size would be larger, and subgroups of participants for whom the effect size would be smaller (Vacha-Haase and Thompson 2004). This suggests that it is important to have a deep understanding of the data rather that focusing solely on the results of statistical significance testing (Durlak 2009). (See the limitations section for some characteristics of the data). Further, depending on the field, small R^2 can have a scientific and theoretical significance too, which may be small, but reliable.



Notes: The estimated standardized coefficient is .03 for the triple interaction effect involving growth-expectation in the form of the expected increase in the number of employees given entrepreneurs' opportunity-motivations and educations (years of schooling) and given the export-orientation of the firm. (*** indicates significance at 1% and * indicates significance at 10%.)

Fig. 1 Triple interaction effects. Notes: The estimated standardized coefficient is .03 for the triple interaction effect involving growth-expectation in the form of the expected increase in the number of employees given entrepreneurs' opportunity-motivations and educations (years of schooling) and given the export-orientation of the firm. (*** indicates significance at 1 % and * indicates significance at 10 %)

Discussion, limitations and conclusion

Discussion

The theory of planned behavior (TPB) was applied in this study as a tool for guiding our hypotheses development related to entrepreneurial motivations, entrepreneurial competencies and firm characteristics on their growth expectations. We specifically chose Latin America as our geographic focus because of our interest in understanding the aforementioned dynamics in a developing region context. Given the longstanding view that higher rates of high-growth entrepreneurship are key contributors to overall economic and job growth in developing regions, understanding what distinguishes high growth entrepreneurship from low-growth entrepreneurship (Shane 2009) or even destructive entrepreneurship (Baumol 1990) is critical in supporting developing economies. All four of our hypotheses were either fully or partially supported. The first hypothesis, that entrepreneurs who started their venture due to an identified opportunity, as opposed to a need due to a lack of employment opportunities, is not surprising and consistent with extant research. This finding, however, does contradict to some extent, Shane (2009) who suggested that the significant attention paid in the Global Entrepreneurship Monitor and in extant entrepreneurship research to differentiating between opportunity and necessity-based entrepreneurship was virtually irrelevant. Yes, there are always outliers where

a necessity-based entrepreneur will turn his or her venture into a significant success. Yet, as suggested by TPB, motivations are the most important predictors of behavior. Most necessity-based entrepreneurs do not intend to start a high-growth venture, and therefore, will likely not do so.

In this study we found that the years of education obtained by the entrepreneur is an important predictor of their growth aspirations. There are of course numerous explanations for this finding such as the increased awareness of business models and opportunities or the desire to cover the opportunity cost of choosing to be an entrepreneur instead of an employee. Future research could continue this line to understand what factors of education influence growth intentions. For example, Huber et al. (2014)) explored the effect of early entrepreneurship-specific education on entrepreneurial capabilities. They found that the primary-school program had no effect on measures of relevant knowledge but did impact ´ non-cognitive´ entrepreneurial skills. Similarly, Oosterbeek et al. (2010) explored the impact of university-based entrepreneurship education on entrepreneurship skills and motivation. They also found weak links to skills and motivation. Those two finding are in contrast with our results and suggest that it may be more important for developing countries to raise the quality and access of higher education more than dedicate resources to entrepreneurship specific programming.

As expected, we also found the export orientation was also an important factor in models predicting growth expectations. Most developing countries in Eastern Europe, Africa and Latin America, for example do not have a sufficient domestic market to support many high growth ventures dedicated exclusively to serving local markets. Therefore, for a developing economy to benefit from high growth entrepreneurship it will almost certainly require policy and support for export-oriented entrepreneurs.

Growth expectation, as proxied by the expected creation of jobs over five years, benefits directly from opportunity-motivation, opportunity-alertness, self-efficacy, networking, risk-tolerance, and education. Moreover, the growth expectation of opportunity-based entrepreneurs benefits from the combination of export orientation and human capital in the form of education or years of schooling. That is, the combination of opportunity-motivation with the entrepreneur's education and with the export orientation of the venture provides an additional boost to growth expectation over and above the direct effect from education and the direct effect from exporting. These are relevant findings, particularly for developing regions like Latin America, because high-growth opportunity-motivated entrepreneurship has the potential to not only create jobs but also raise people out of poverty, make markets more competitive, and enhance economic growth (Shane 2009). Therefore, instead of focusing on the typical startup, good public policy would be to allocate funds to export-oriented firms owned and managed by highly educated entrepreneurs.

Limitations

It is important to note that a significant methodological limitation of focusing on GEM data is that country dynamics are different even after controlling for country dummies. Moreover, because the data are derived from a random self-reported sample collected mostly by phone, the data contains perception bias; nevertheless, the data are sufficiently valid for most studies. Additionally, compared to more precise economic data, a limitation of GEM sociologically based data is that crude measurements tend to report

lower overall fits of the models and larger measurement errors. This tendency occurs mainly because most of the variables are dichotomous but is also due to the large number of observations. For example, a dichotomous variable does not take into consideration the amount of self-efficacy, networking, or risk-tolerance. Regardless of whether an entrepreneur is extremely risk-averse, the dichotomous representation is the same to an entrepreneur who is slightly risk-averse.

Moreover, while we drew direction from published studies to construct measures of entrepreneurs' competencies and firm characteristics and used multiple measures, the composite measures are nevertheless indirect proxies of largely unobservable phenomena, and therefore, they may lack precision (as suggested by Florin et al. 2003: 382). For example, the measure of self-efficacy, like others used in other recently published studies, does not account for the length of experience. Moreover, as Cassar (2006: 629) acknowledges, a limitation of this research is that the actual employee growth achieved by the venture is not measured. Obviously, there will be differences between planned growth and actual growth achieved. In addition, of the entrepreneurs surveyed, not all will persist in the venturing process to the point where growth is achieved. How realistic these growth perceptions are is a question for future research. Future research should also explore the negative sign for operational phase, particularly as part of the triple interaction effect on growth expectation involving opportunity-motivation and education.

Conclusion

This research leveraged the theory of planned behavior to establish four hypotheses associated with the relationship between startup motivation, five entrepreneurial competencies and three firm level characteristics and growth expectations of entrepreneurs in developing regions. We specifically leveraged data from surveys of more than 100,000 adult entrepreneurs in 19 Latin American countries collected from the Global Entrepreneurship Monitor. We advanced our understanding of how the theory of planned behavior supports the prediction of growth aspirations of opportunity-based entrepreneurs in developing regions. Among other important findings was the triple interaction effect amongst opportunity-based entrepreneurs with higher levels of education and an export orientation on the entrepreneurs` growth expectations.

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