



Universidad del Desarrollo
Facultad de Economía y Negocios

SERIE WORKING PAPERS

Opportunity-motivated entrepreneurs' growth expectations in Latin
America and the moderating effect of education and exports

Antonio Lecuna

December 2014

Working Paper 18



SERIE WORKING
PAPERS UDD

Opportunity-motivated entrepreneurs' growth expectations in Latin America and the moderating effect of education and exports

ABSTRACT: Scholars have articulated a number of arguments regarding the beneficial effects of opportunity-motivated (as opposed to necessity-driven) entrepreneurs, and this study delves somewhat deeper into this topic. First, this study uses the expectation of job creation over five years as a metric to measure the benefits of entrepreneurship and employs this metric as a dependent variable defined as growth expectation. Second, this study utilizes a sample of 111,194 entrepreneurs to estimate how growth expectation is affected by the interaction between opportunity-motivation and five entrepreneurial competencies: opportunity-alertness, self-efficacy, networking, risk-willingness, and education. Third, because the most significant interaction effect resulted from the interaction between opportunity-motivation and education, this combination is further explored with respect to the additional effect of three firm characteristics: operational phase, export orientation and innovation orientation. In the context of a relatively homogenous group of 19 Latin American countries, the results suggest that opportunity-motivated entrepreneurs' numbers of years of schooling and an export-oriented firm provides added value and jointly boosts growth expectations, as reflected in expected increases in the number of employees.

KEYWORDS: Entrepreneurship, start-up, small business, innovation, growth expectation.

INTRODUCTION

Increasing the raw number of entrepreneurs is bad public policy. 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). In line with these arguments, the overall aim of this paper is 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 growth intention, particularly the scale of venturing activity intended, of entrepreneurs? Utilizing the context of Latin America, I test the positive effects of opportunity-motivated entrepreneurs on the expected increase in the number of employees and how the significance of this effect is moderated by the combined effects of education and exports. (This study's dependent variable is a measure of entrepreneurs' growth-expectations based on job creation.)

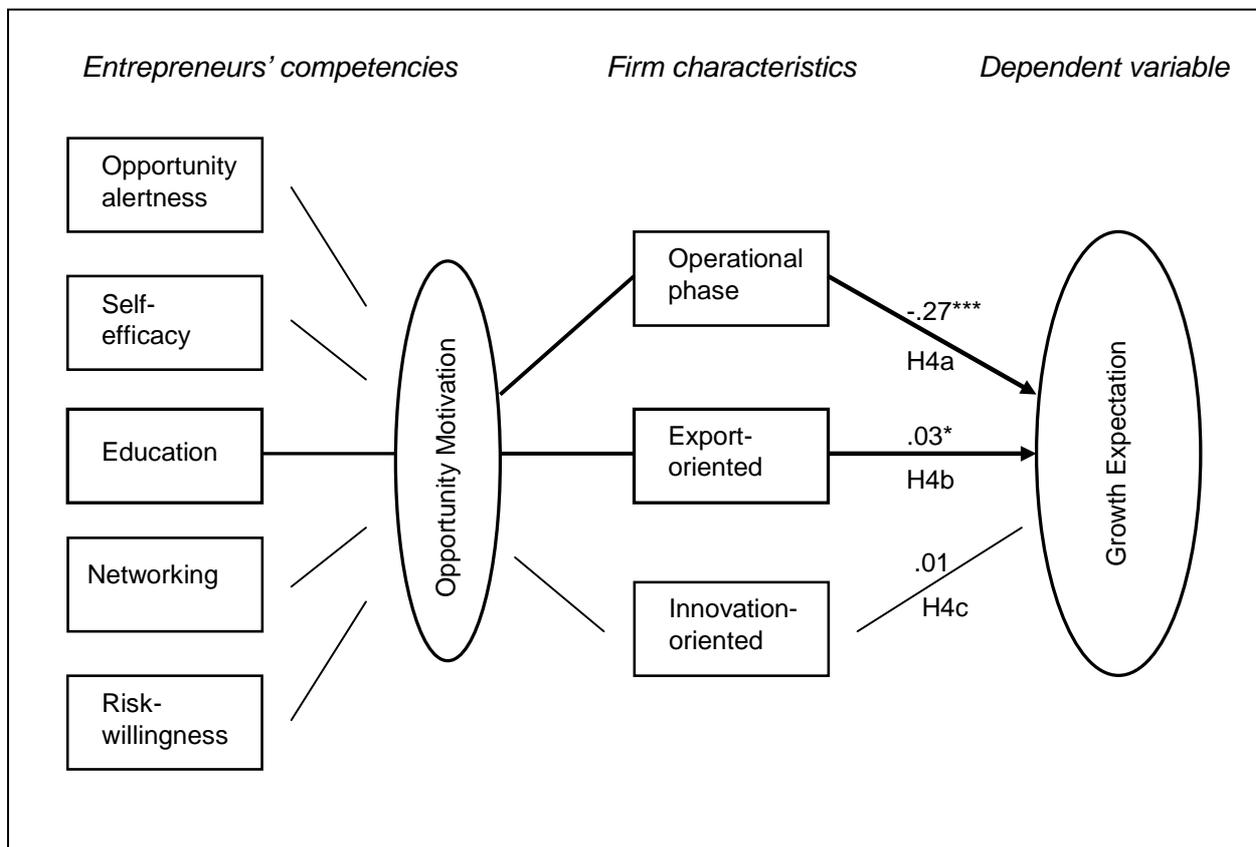
Entrepreneurship has traditionally been defined as discovering, evaluating, exploiting, and responding to situational cues and existing sources of opportunity; it has additionally referred to the group of enterprising individuals who engage in such processes (Shane and Venkataraman, 2000; Venkataraman, 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). As a measure of entrepreneurial activity, the focus of all statistical tests presented here is on the opportunity side of entrepreneurship. (The first independent variable of interest is a measure of opportunity-motivated entrepreneurial activity.)

The statistical findings of this study indicate that the direct association between the dependent variable (growth-expectation) and entrepreneurs' competencies is significant, and the direction is consistent with the background literature, which should not be surprising due to the large number of observations (111,194 entrepreneurs). Entrepreneurial competencies are defined in this study as opportunity-motivation, opportunity-alertness, self-efficacy, networking, risk-willingness, and education. The first round of interaction tests explores the effect of opportunity-motivation on the remaining entrepreneurial competencies, and the results are intriguing. Only the combination of opportunity-motivation and education is significant; however, the sign contradicts theory and logic, suggesting that opportunity-motivated entrepreneurs who are relatively less educated, as measured by their years of schooling, are expected to have higher growth rates, as measured by the expectation of job creation over five years. An alternative interpretation might be that the effect of opportunity-motivation decreases growth expectations when the number of years of education is relatively high.

These findings were further tested with three firm characteristics: (1) operational phase, (2) export orientation, and the (3) innovative nature of the enterprise. The triple interaction effect between entrepreneurs' opportunity-motivation and entrepreneurs' years of schooling with these

three firm characteristics yielded significant findings. Phase operation of the enterprise and exporting are significant, and what is really important is that the moderating effect of exports seems to correct the negative combined effect of opportunity-motivation and education on entrepreneurs' growth-expectations. In other words, the number of years of an entrepreneurs' schooling amplifies the benefits of exports by increasing the expected number of employees in five years, particularly when the entrepreneur is an opportunity-motivated individual. These effects are represented by the central arrow in Figure 1.

Figure 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%.)

Researchers have focused on the direct explanatory effects in predicting future venture size, which has been commonly measured as sales and employee growth. However, this is the first study within the context of Latin America that explains the combined effect of opportunity motivation not only with entrepreneurs' competencies, including human and social capital, but also with specific firm characteristics, such as exporting. To the best of my knowledge, no study has tested the triple interaction effect of years of schooling on the growth expectation of opportunity-motivated and export-oriented entrepreneurs in Latin America.

The rest of the paper is structured as follows. The next section introduces the structural factors in entrepreneurs' growth expectations. In addition to clarifying central concepts and illustrating the state of the art, the section aims at introducing the theoretical foundation for the formulation of a set of hypotheses. I then provide a description of the variables of interest. After defining the data and describing the statistical tests, I report the most significant findings. The focus is on the combination and the synergy of the factors, instead of the direct effect. The last section concludes with a discussion and implications for policy makers, in addition to addressing statistical limitations and suggestions for future research.

STRUCTURAL FACTORS IN ENTREPRENEURS' GROWTH EXPECTATIONS

Following Baum et al. (2001), I argue that entrepreneurs' competencies are extremely important in entrepreneurship settings because the domain they reflect, specific competencies, has highly significant direct effects with venture growth. The authors 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.

The first entrepreneurial competency is human capital, which is 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, I use education and self-efficacy as the two measures of human capital. 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' educations have long been argued to be critical resources for success in entrepreneurial firms (Florin et al., 2003; Sexton and Upton, 1985). Researchers have argued 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 plausibly the most widely tested human capital attribute. Entrepreneurship researchers have found 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).

Aside from human capital, which I capture here as education and self-efficacy, social capital, which I 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 1,851 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, Kraimer, and Liden, 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, the regressions tests also include three entrepreneurial competencies that have traditionally been associated with venture growth: opportunity-motivation (Shane and Venkataraman, 2000; Venkataraman, 1997), opportunity-alertness (Baum et al. 2001), and risk-willingness (Palich, 1995). Particular attention should be placed on the two opportunity-related factors because 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).

Finally, three firm characteristics are also included: operational phase, export-oriented, and innovation-oriented. Strategy researchers have empirically linked firm performance and top management characteristics to innovation and export strategy (Schumpeter, 1934, Michel and Hambrick, 1992; Acs and Audretsch, 2005; Ashourizadeh et al., 2014). With regard to operational phase, 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.

Hypotheses

Based on the entrepreneurship literature, with special reference to opportunity-motivation and human capital in the form of education, I specify the following hypotheses.

H1 Entrepreneurs' competencies have direct and independent effects on growth expectation, as measured by the expected creation of jobs in five years, i.e., growth-expectation is positively affected by opportunity-motivation (H1a), opportunity-alertness (H1b), self-efficacy (H1c), networking (H1d), risk-willingness (H1e), and education (H1f).

H2 There is a direct and positive relationship between growth expectation and three characteristics of a firm: operational phase (H2a), i.e., firms that are in the operating phase instead of the starting phase tend to have greater growth expectation; export orientation (H2b); and innovation orientation (H2c).

H3 The combination of opportunity-motivation and other entrepreneurial competencies yields additional returns in growth-expectation, i.e., growth-expectation is positively reinforced by the following interaction effects: opportunity-motivation in combination with opportunity-alertness (H3a), self-efficacy (H3b), networking (H3c), risk-willingness (H3d), and education (H3e).

H4 Opportunity-motivation, human capital in the form of education or years of schooling, and three specific characteristics of the firm combine to yield additional returns in growth-expectation; i.e., growth-expectation is further positively reinforced by the following interaction effects: opportunity-motivation in combination with education and operational phase (H4a), exporting (H4b), and innovation (H4c).

DEFINITION OF THE DATA

The study analyzes a relatively homogenous sample that is fairly representative of entrepreneurs in Latin America. Entrepreneurs are interviewed as part of the Global Entrepreneurship Monitor (GEM) surveys of adult entrepreneurial involvement around the world. GEM uses a two-stage sampling process, first selecting countries and then randomly sampling

adult entrepreneurs for interviews. Entrepreneurs have been surveyed in the following 19 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. I studied a single region to avoid confounding by country type. (Linear modeling is preferred over multilevel or hierarchical models because of the relatively small number of cases.)

The sample totals 111,194 entrepreneurs, who are defined in the GEM database as those who created, own and manage an early-stage or operational enterprise (all measurements are found in the questionnaires that are published on the homepage; Global Entrepreneurship Research Association, 2013). The independent variables in the analyses are the attributes that entrepreneurs reported regarding themselves and their firms: self-efficacy, networking, risk-willingness, education, and firm characteristics (e.g., exporting and innovative). 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).

Dependent variable

I chose expected venture growth as my 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) suggests, entrepreneurs who indicated employment growth as a goal indeed generate more employment.

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." Logarithms are used to reduce the effect of extreme positive skewness.

Entrepreneurs' competencies

Baum et al. (2001) defined entrepreneurs' competencies as the knowledge, skills, and/or abilities required to perform a specific job. Six entrepreneurs' competencies were tested as predictors of entrepreneurs' growth expectations: (1) opportunity-motivation, which targets past motives based on business opportunities instead of sheer necessity to become an entrepreneur; (2) opportunity-alertness, which differs from opportunity-motivation mainly in that it targets future opportunities; (3) self-efficacy, which consists of various outcomes of investment into human capital, such as experience and knowledge; (4) networking, which is the entrepreneur's accumulation of social capital; (5) risk-willingness, which is the entrepreneur's propensity to undertake the risk of failure; and (6) education, which is the entrepreneur's total number of years of schooling.

The proxy used for the first independent variable of interest, opportunity-motivated entrepreneurial activity, was based on 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. The direction of the dependent variable is expected to be positive, i.e., if the genesis of the business was motivated by opportunity, then the effect on growth expectation should be positive. Thus, if the business was created to exploit an opportunity rather than out of necessity, then the number of employees per startup is expected to increase.

After testing the direct and independent effects of the six entrepreneurs' competencies on growth expectation, I tested the combined effect of opportunity-motivation with the remaining five entrepreneurial competencies: Opportunity-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?” Risk-willingness 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. Because the answers to the first four questions are coded as “0” for “no” and “1” for “yes,” the expected directions for the combined effects of opportunity-motivation with opportunity-alertness, self-efficacy, networking, and risk-willingness are positive. Naturally, the combined effect of opportunity-motivation with education is also expected to enter the regression model with a strong positive sign.

Firm characteristics

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.

Firm characteristics encouraged a third round of tests that included the combined effect of opportunity-motivation and years of education with the three characteristics of the firm: operational phase, the percentage of exports, and the innovative orientation of the firm. The triple interaction effects are expected to be significantly positive because the three variables related to firm characteristics are expected to have a positive effect on growth-expectation, indicating that established and innovative firms with a foreign customer base are expected to grow. (All variables are detailed in Table 1.)

Table 1. Characteristics of the sample of 111,194 entrepreneurs

| <u>Dependent variable</u> | | |
|--|---------------------------------|-------------|
| Entrepreneurs' growth-expectation (number of employees, years 0 to 5) | Mean | 68% |
| | Standard deviation | 15% |
| <u>Entrepreneurs' competencies</u> | | |
| Opportunity-motivation | Necessity-motivated | 44% |
| | Opportunity-motivated | 56% |
| Opportunity-alertness | Not opportunity-perceiving | 35% |
| | Opportunity-perceiving | 65% |
| | Observations | 68.389 |
| Self-efficacy | Not self-efficacious | 14% |
| | Self-efficacious | 86% |
| Networking | No social capital | 43% |
| | Social capital | 57% |
| Risk-willingness | Risk-averse | 25% |
| | Risk-willing | 75% |
| Education | Mean | 11 years |
| | Standard deviation | 4.5 years |
| <u>Firm characteristics</u> | | |
| Phase operating | 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% |
| Innovation-oriented | 0% of customers are abroad | 66% |
| | Mean | 1,53 |
| | Standard deviation | 0,49 |
| <u>Demographics</u> | | |
| 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 |

Notes: 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.

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.

SIGNIFICANT FINDINGS

The results in Table 2 show that entrepreneurs' growth-expectations benefit from the direct effect of the six entrepreneurial competencies analyzed, including opportunity-motivation and entrepreneurs' number of years of schooling. The "H1" set of hypotheses is generally consistent with the theory and expectation. Table 2 also shows that only two of the three variables that measure firm characteristics report the expected sign (export and innovation), which supports hypotheses "H2b" and "H2c." 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).

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

| | <i>Main effects</i> | | <i>Double interaction</i> | | <i>Triple interaction</i> | |
|--|------------------------------------|----------------|-----------------------------|----------------|-----------------------------|----------------|
| | <i>Standard coefficient</i> | <i>P-value</i> | <i>Standard coefficient</i> | <i>P-value</i> | <i>Standard coefficient</i> | <i>P-value</i> |
| <i>Entrepreneurs' competencies</i> | | | | | | |
| Opportunity-motivation | 0,06 | <.001 | 0,06 | | 0,09 | |
| Opportunity-alertness | 0,05 | <.001 | 0,06 | | 0,05 | <.001 |
| Self-efficacy | 0,04 | <.001 | 0,03 | | 0,04 | <.001 |
| Networking | 0,06 | <.001 | 0,04 | | 0,06 | <.001 |
| Risk-willingness | 0,03 | <.001 | 0,03 | | 0,03 | <.001 |
| Education | 0,03 | 0,005 | 0,05 | | 0,05 | 0,001 |
| <i>Firm characteristics</i> | | | | | | |
| Phase operating | -0,15 | <.001 | -0,15 | <.001 | -0,09 | |
| Export-oriented | 0,02 | 0,065 | 0,02 | 0,058 | <.01 | |
| Innovation-oriented | 0,08 | <.001 | 0,08 | <.001 | 0,08 | |
| <i>Double interaction effects</i> | | | | | | |
| Opport-motiv * opport-alertness | | | -0,01 | 0,806 | | |
| Opport-motiv * self-efficacy | | | 0,03 | 0,312 | | |
| Opport-motiv * networking | | | 0,02 | 0,274 | | |
| Opport-motiv * risk-willingness | | | 0,01 | 0,631 | | |
| Opport-motive * education | | | -0,05 | 0,085 | | |
| <i>Triple interaction effects</i> | | | | | | |
| 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 |
| <i>Controls</i> | | | | | | |
| Age | -0,09 | <.001 | -0,09 | <.001 | -0,09 | <.001 |
| Gender | 0,04 | <.001 | 0,04 | <.001 | 0,04 | <.001 |
| Household size | 0,03 | 0,001 | 0,03 | 0,001 | 0,03 | <.001 |
| Country | Intercept for each not listed here | | | | | |
| Service sectors | Intercept for each not listed here | | | | | |

Notes: Number of observations = 111,194. Household size and exports are expressed using logs.

Following the "H3" set of hypotheses, I also tested the interaction effects between opportunity-motivation and the other entrepreneurial competencies, with only one significant result to report. Only the education variable consistently has significance levels of less than 1%, which implies that the effect of opportunity-motivated entrepreneurial activity on growth-

expectation depends on the level of education. However, contrary to the background literature that argues that human capital increases the capability of owners to perform the generic entrepreneurial tasks of discovering and exploiting business opportunities (Shane and Venkatraman, 2000; Shane, 2000), the direction of this double interaction effect is negative, which strongly rejects the “H3e” hypothesis. Entrepreneurs who have both a high-motivation for opportunity in starting a business and relatively fewer years of education tend to have greater growth expectations, whereas entrepreneurs who have both a low opportunity-motivation in starting a business and relatively more years of education tend to be associated with greater growth expectations. That is, as the number of years of education increases, the effect of motivation by opportunity decreases expected growth. (The “H3” set of hypotheses are all rejected due to insignificant p-values and/or wrong signs.)

More importantly, Table 2 also reports that the triple interaction effect between opportunity-motivation, number of years of education, and the export orientation of the firm yields additional returns in growth-expectation in the form of expected job creation over five years. In other words, the combination of opportunity-motivated startups with more entrepreneur education and an export orientation reinforces the benefits of growth expectation. This finding specifically supports the “H4b” hypothesis. There are a number of possible interpretations for the positive effect. The most logical interpretation is that 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. (Hypothesis “H4a” is rejected because of the wrong sign, whereas hypothesis “H4c” is rejected because of a lack of statistical significance.)

CONCLUSIONS

Growth expectation, as proxied by the expected creation of jobs over five years, benefits directly from opportunity-motivation, opportunity-alertness, self-efficacy, networking, risk-willingness, and education. Moreover, the growth expectation of opportunity-motivated 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 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.

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 significant 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-willingness. 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 I 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 and how these perceptions of future sales reflect actual sales 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.

REFERENCES

- ACS, Z., Amorós, J.E., 2008. Entrepreneurship and competitiveness dynamics in Latin America. *Small Business Economics*, 31: 305-322.
- Acs, Z., Audretsch, D., 2005. Entrepreneurship and innovation. Discussion Papers on Entrepreneurship, Growth and Public Policy # 2005-21.
- Aldrich, H., Auster, E.R., 1986. Even dwarfs started small: liabilities of age and size and their strategic implications. *Research in Organizational Behavior*, 8: 165-198.
- Aldrich, H.E., Wiedenmayer, G., 1993. From traits to rates: an ecological perspective on organizational foundings. In: Katz, J.A., Brockhaus Sr. Sr., R.H. (Eds.), *Advances in Entrepreneurship, Firm Emergence, and Growth*, Vol. 1. JAI Press, Greenwich, CT, pp. 145-195.
- Ashourizadeh, S., Rezaei, S., Schott, T., Vang, J., 2014. Entrepreneurs' human and social capital: direct and reinforcing benefits for export. *International Journal of Entrepreneurship and Small Business*, 21: 246-267.
- Baum, R., Locke, E., Smith, K., 2001. A multi-dimensional model of venture growth. *Academy of Management Journal*, 44: 292-303.
- Becker, G.S., 1964. *Human Capital*. Columbia University Press, New York.
- Bosma, N.S., van Praag, C.M., Thurik, A.R., de Wit, G., 2004. The value of human and social capital investments for the business performance of startups. *Small Business Economics*, 23: 227-236.
- Brush, C.G., Greene, P.G., Hart, M.M., 2001. From initial idea to unique advantage: the entrepreneurial challenge of constructing a resource base. *Academy of Management Executive*, 15: 64-78.
- Cassar, G., 2006. Entrepreneur opportunity cost and intended venture growth. *Journal of Business Venturing*, 21: 610-632.
- Casson, M., 1982. *The Entrepreneur*. Totowa, NJ: Barnes & Noble Books.
- Chandler, G.N., Jansen, E., 1992. The founder's self-assessed competence and venture performance. *Journal of Business Venturing*, 7: 223-236.
- Chandler, G.N., Hanks, S., 1998. An examination of the substitutability of founders' human and financial capital in emerging business ventures. *Journal of Business Venturing*, 13: 353-369.
- Cooper, A.C., Gimeno-Gascon, J., Woo, C., 1994. Initial human and financial capital as predictors of new venture performance. *Journal of Business Venturing*, 9: 371-395.
- Florin, J., Lubatkin, M., Schulze, W., 2003. A social capital model of high growth ventures. *Academy of Management Journal*, 46: 374-384.

- Haber, S., Reichel, A., 2007. The cumulative nature of the entrepreneurial process: the contribution of human capital, planning and environmental resources to small venture performance. *Journal Business Venturing*, 22: 119-145.
- Low, M.B., MacMillan, I.C., 1988. Entrepreneurship: Past research and future challenges. *Journal of Management*, 14: 139-151.
- Michel, J.G., Hambrick, D.C., 1992. Diversification posture and the characteristics of the top management team. *Academy of Management Journal*, 35: 9-37.
- Ostgaard, T.A., Birley, S., 1994. Personal networks and firm competitive strategy: A strategic or coincidental match? *Journal of Business Venturing*, 9: 281-305
- Palich, L.E., 1995. Using cognitive theory to explain entrepreneurial risk-taking: Challenging conventional wisdom. *Journal of Business Venturing*, 10: 425-438.
- Pennings, L., Lee, K., van Witteloostuijn, A., 1998. Human capital, social capital, and firm dissolution. *Academy of Management Journal*, 41: 425-440.
- Schumpeter, J., 1934. *The Theory of Economic Development*. Cambridge, MA: Harvard University Press.
- Seibert, S.M., Kraimer, M.L., Liden, R. C., 2001. A social capital theory on career success. *Academy of Management Journal*, 2: 219-237.
- Sexton, D.L., Upton, N.B., 1985. The entrepreneur: a capable executive and more. *Journal Business Venturing*, 1: 129-140.
- Shane, S., 2000. Prior knowledge and the discovery of entrepreneurial opportunities. *Organization Science*, 11: 448-469.
- Shane, S., 2009. Why encouraging more people to become entrepreneurs is bad public policy. *Small Business Economics*, 33: 141-149.
- Shane, S., Venkataraman, S. 2000., The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25: 217-226.
- Stinchcombe, A.L., 1965. Social structures and organizations. In: March, J.G. (Ed.), *Handbook of Organizations*. Rand McNally, Chicago, pp. 142-193.
- Unger, J.M., Rauch, A., Frese, M., Rosenbusch, N., 2011. Human capital and entrepreneurial success: A meta-analytical review. *Journal of Business Venturing*, 26, 341-358.
- Venkataraman, S., 1997. The distinctive domain of entrepreneurship research: An editor's perspective. *Advances in Entrepreneurship, Firm Emergence, and Growth*, 3, 119-138.
- Williams, C.C., 2009. The motives of off-the-books entrepreneurs: necessity- or opportunity-driven? *International Entrepreneurship and Management Journal*, 5(2): 203-217.