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Influential factors in the creation of a business unit for graduates

Factores incidentes en la creación de una unidad de negocios para graduados

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Abstract

The purpose of this paper was to approach the factors that influence the creation of a business unit based on a structural analysis carried out among university and training center graduates in entrepreneurship in Guayaquil, Ecuador. This work adopted a deductive research methodology. The scope of the study was descriptive and explanatory, since this stage led to identify which factors influence on the creation of a business unit by a survey for university and training center graduates in entrepreneurship. The findings indicate that education, entrepreneurship and the transfer of research and development do not have a direct and significant influence on the ability to set up a new business.

JEL Code: M10, M13, M16
Keywords: entrepreneurship; cultural and social norms; business education

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Resumen

Esta investigación tuvo como objetivo cuantificar los factores que inciden en la creación de una unidad de negocio mediante un análisis estructural en los graduados de las carreras y centros de capacitación universitarios en emprendimiento de la ciudad de Guayaquil. La metodología a utilizar en esta investigación fue el método deductivo, el alcance del estudio fue descriptivo y explicativo porque está orientado a identificar los factores que inciden en la creación de una unidad de negocio, mediante un modelo estructural en los graduados de las carreras y centros de capacitación universitarios en emprendimiento. Se demostró que la educación y capacidad de emprendimiento y la transferencia de investigación y desarrollo no tienen una influencia directa y significativa en la capacidad de crear un nuevo negocio.

Código JEL: M10, M13, M16
Palabras clave: emprendimiento; normas culturales y sociales; educación empresarial

Introduction

Professional degrees in entrepreneurship aim to foster new business units that contribute to employment development. Nevertheless, recent research found a negative relation between entrepreneurial education and the capacity to create new business units (Díaz-Casero, Hernández-Mogollón & Roldán, 2012). Recent research has specifically contributed to the environment latent variable with new data regarding the factors that affect the creation of a new business. For Diaz-Casero *et al*. (2012), the environmental or surrounding factors that influence the creation of a new business are: (a) entrepreneurial education and training, (b) transfer of research and development; and (c) cultural and social norms. Their findings demonstrated the unique role of cultural and social norms in the capacity to create new businesses. Nonetheless, these authors concluded that education and training in new business creation do not significantly influence new business creation (it is not positively associated with new business creation) but are an indirect facilitator through the cultural and social norms of the population.

Starting a new business is a process of creation, expansion, and consolidation of companies, essential for economic development since it generates sources of employment (Schumpeter, 1934). Understanding this phenomenon is of interest to governments (who need to increase employment rates), individuals who are motivated to create their own businesses (in search of economic benefits) and institutions dedicated to teaching and training on this subject (in order to train professionals capable of creating new competitive companies).

University courses and training centers in Latin America are dedicated to teaching entrepreneurship. Among the main objectives of this type of education are to foster the entrepreneurial spirit and to train job creators through the creation of new businesses. Therefore, the novelty and originality of this research lie in testing the model of Díaz-Casero *et al.* (2012), who demonstrated the

opposite: that training and teaching on how to create new businesses do not influence the generation of new business units. With the results obtained given the chosen population, it will be possible to make a scientific contribution to the field of business, specifically in entrepreneurship. In addition, it will benefit society with information about the factors underlying the creation of new business units and help governments implement policies to foster the generation of sources of employment.

Theoretical framework

In Gartner's (1985) seminal work, he explained in his review of the literature the phenomenon of new business creation. To explain this phenomenon, he proposed that the creation of a new business contains four perspectives: (a) the characteristics of the individual starting the business, (b) the organization that this individual creates, (c) the environment surrounding the new business, and (d) the process by which the new business is started. Regarding the individual, it was concluded that the psychological characteristics that influence the individual who decides to start a business are: (a) need for achievement, (b) locus of control, (c) risk propensity, (d) work satisfaction, (e) previous work experience, (f) entrepreneurial parents, (g) age, and (h) level of education.

On the other hand, Gartner (1985) determined that starting a new business involves carrying out certain activities. The new entrepreneur: (a) detects a business opportunity, (b) accumulates resources, (c) innovates and produces the product or service, and (d) responds to government and society (Cole, 1965; Schumpeter, 1934). Nevertheless, another factor considered is the environment in which the new business will be developed. The environment is determined by: (a) availability of funds for financing, (b) the expertise of the entrepreneur, (c) qualified personnel, (d) accessibility of suppliers, (e) accessibility of clients or new markets, (f) governmental influences, (g) availability of land or facilities, (h) access to transportation, (i) attitude of the area's population, (j) availability of support services, and (k) living conditions.

From the above it can be deduced that a system of education and training in entrepreneurship does not necessarily contain all the tools to influence the creation of new organizations. Although there is no positive association between education in entrepreneurship and the creation of new businesses, it seems that education does have an indirect effect through cultural and social values because they stimulate people's motivation to create a business. They also demonstrated that research-development transfer positively and significantly influences new business creation (Díaz-Casero et al. 2012). To validate, expand, synthesize, and generalize what was presented by Díaz-Casero et al. (2012), the authors suggested that it is necessary to replicate the structural equation model in other countries and test it using a sample

of entrepreneurs to carry out an individual-level analysis to quantify the influence of each factor in the creation of a business unit.

One of the latest research projects on this topic by Hundt and Sternberg (2016) concluded that the national and regional context significantly impacts the decision to open a business and that individual-level characteristics exert a general influence. Nevertheless, this influence is not maintained over time due to the different factors in which the future entrepreneur is involved, such as the level of ambition the entrepreneur has. In Ecuador, there are university degrees and training centers dedicated to teaching entrepreneurship. Among the main objectives of this type of education are to foster the entrepreneurial spirit and to train job creators through the creation of new businesses.

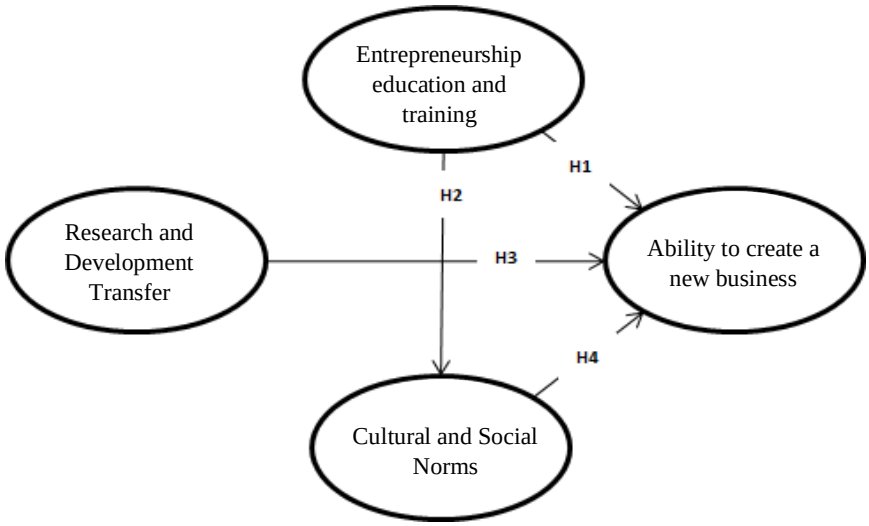

Figure 1. Model of the proposed research. Taken from "A structural model of the antecedents to entrepreneurial capacity," by J. Diaz-Casero, R. Hernández y J. Roldan, 2012, International Small Business Journal, 30(8), 850-872

The review of the literature that served as the theoretical basis for this research is detailed below.

Studying the relation between education, training, and entrepreneurship in the entrepreneurial field is necessary (Henry, Hill, & Leitch, 2005). The relation of education to entrepreneurship has been discussed (Gibb & Hannon, 2006) since it is understood that universities can influence a student's desire to start a company. Nevertheless, Gibb and Hannon (2006) show that entrepreneurship requires adequate higher education and a commitment to continuous improvement. A university degree in an administrative area is no longer enough to ensure that an individual will last in a job. It only grants initial access to the

labor field (Politis et al., 2012; Rovayo, 2013). Education does not ensure success but gives you the roadmap for increasing your success rate in any endeavor. (Robinson & Sexton, 1994; Rothaermel et al., 2007).

Nowadays, the global economic environment is composed of technological advances and the emergence of new markets worldwide. Therefore, it is clear that an entrepreneur requires entrepreneurship skills to deal with life's challenges and an uncertain future. Regardless of a person's degree path or circumstances, learning entrepreneurship will enable them to learn to be innovative in problem-solving, adapt to change, and become more self-reliant (Henry et al., 2005; Sesen, 2013).

Levie and Autio (2008) explained that Entrepreneurship Education and Training (EET) is expected to foster the supply of entrepreneurship. One of the mechanisms to foster entrepreneurship with EET is providing the instrumental skills needed to start and grow a new company (Honig, 2004). Another mechanism is through the improvement of the cognitive capacity of individuals to manage complexities involved in the recognition and evaluation of opportunities, as well as in the creation and growth of new organizations (DeTienne & Chandler, 2004). A third way is through the effect of culture on students' attitudes and behavioral dispositions (Peterman & Kennedy, 2003). Thus, entrepreneurship requires a mix of skills to eliminate gaps that prevent the completion of the inputs for entrepreneurship (Levie & Autio, 2008).

The importance of entrepreneurial education has arisen as a great need due to the increase in unemployment and underemployment in developing countries. Graduates of study centers remain unemployed because they do not possess the skills required by industry standards. An education system based on skills and the development of entrepreneurial awareness, and which focuses more on the practical aspects than the theoretical, is necessary for more individuals to create new businesses and contribute to the country's economic development. Governments should ensure a good entrepreneurial education system, with good schools and qualified teaching staff to educate and train potential entrepreneurs and have funds available to facilitate entrepreneurship at the end of the program (Panigrahi, 2015; Zhao, Seibert, & Hills, 2005).

The literature reveals a strong relation between education, business creation, and entrepreneurial performance, and business education and entrepreneurship. While it is true that the best indicator to measure the results of entrepreneurial education is the rate of new business creation, some studies reveal that these results are not immediately reflected in real life. The studies of some scholars of the relation between entrepreneurial education and entrepreneurship reveal the positive impact of entrepreneurial education and propose measures to governments to allocate funds for entrepreneurial education programs and select the most appropriate ones (Raposo & Paço, 2011).

Different behaviors can be accurately predicted because the theory is supported by empirical evidence. Applying this theory in business education allows for effectively understanding the intentions and attitudes of such purchasing or decision-making behaviors, as it provides useful information. That said, outcome assessment, strength of belief, motivation to succeed, and perceived power of control factors make it possible to overcome large-scale limitations, but there is a powerful constraint that relates to the observed gain in global measures and beliefs (Ajzen, 1991; Parker & Belghitar, 2006).

Research and development transfer (RDT) uses a Schumpeterian approach, which emphasizes the importance of technological development as a generator of business opportunities (1934). Technological development creates knowledge spillovers that can be exploited to commercialize innovations (Nelson & Winter, 1982). Consequently, entrepreneurship plays an important role in facilitating the exploitation of knowledge spillovers.

According to Díaz-Casero et al. RDT is a variable that estimates "to what extent research and development in countries or regions lead to new commercial opportunities; and distinguishes whether these are within reach of entrepreneurs or not" (2012, p. 852)." RDT indicates how accessible new knowledge and technologies are for new and developing companies (Reynolds et al., 2005). From this perspective, innovation (technological change) contributes to new companies' emergence because they combine resources differently or create new production functions (Cooper & Park, 2008).

Therefore, RDT is one of the most significant conditions for an entrepreneurial environment (it facilitates entrepreneurship), especially for countries with high levels of competitiveness and that are innovation-oriented. Nevertheless, for countries whose economies are based on the primary sector, RDT is of little significance. The institutional structure limits the sphere of action for creating companies regarding beliefs, gender, and commercial legislation, which conditions new companies' emergence and development (Díaz-Casero, Urbano, & Hernández, 2005). Likewise, culture determines how individuals cope with the constraints on generating short-term solutions and how they cope with the formal constraints that social norms may place on employees' long-term effectiveness in business development.

Human beings construct "mental models" to try to explain and interpret the reality that surrounds them, and the business environment is no exception, according to the sociocultural theoretical approach that studies the factors that influence entrepreneurial activity (Díaz-Casero et al., 2005). One of the aspects that cannot be left isolated in the study of entrepreneurship is the way the individual conditioned by the environment reacts since social and cultural norms are evident when it comes to analyzing economic growth, business innovation, and job creation (Díaz-Casero, Hernández, Sánchez, & Postigo, 2010). Societies naturally possess different physical environments; members of a society must adopt environmentally dominant patterns of behavior to achieve success. These environmentally dominant behavior patterns imply the formation of different cultural values in different societies, some of which

influence the decision to create new companies (Thornton, Ribeiro-Soriano, & Urbano, 2011). Consequently, culture (as opposed to political, social, technological, or economic contexts) determines economic behavior and entrepreneurship (Shane, 2000).

Environmental and political factors can facilitate or impede entrepreneurial activities and encourage or hinder students' entrepreneurial spirit. In the study conducted, it was very surprising that the attitude toward self-employment is even more favorable among students from the United States than among those from Germany, and it was also shown that German universities with better-trained teachers and better learning materials are cheaper than those in the United States and that they cannot select their students and this diminishes their entrepreneurial spirit (Franke & Lüthje, 2004). Business incubation provides a bridge to promote novelty in business, but the result of incubation will not always add value to the idea of this article. Strong relations between strategic partners in the same network must exist to create high incubation value. (Hughes, Ireland, & Morgan, 2007). Entrepreneurship, far from involving self-interest, includes the environmental factor. This incorporation results in very high economic benefits with equal ecological improvements that help society and the planet (Shirokova, Osiyevskyy, & Bogatyreva, 2015). The idea is to train entrepreneurs with a specific social mission by introducing specific products and services to create alliances with important sectors in the industry. (Lenox & York, 2012; Nielsen & Lassen, 2012).

The literature agrees that culture is a determinant of entrepreneurial behavior. Culture refers to the enduring values of a nation, a region, or an organization (George & Zahra, 2002). Nevertheless, it is necessary to distinguish between general national culture or universal values like those measured by Hofstede (1980) and context-specific beliefs or attitudes toward entrepreneurship. Several empirical studies have reported statistical associations between culture and entrepreneurial activities. Nevertheless, the results of attempts to measure the effect of national culture on business activity using standard national measures of culture and appropriate controls have been diverse and mixed. This may be because widely shared beliefs in particular societies may mediate between cultural values and the enactment of specific behaviors (Smith, Peterson, & Schwartz, 2002). Therefore, a distinction must be made between national and entrepreneurial culture and social norms (Levie & Autio, 2008).

Investment in research and development is very important for economic growth, as it generates new knowledge, technology, and skills. It is also intensive in human capital, and this capital is inalienable and portable (Babina & Howell, 2018). Technological entrepreneurship transforms research and scientific institutions' potential into new products and services, increasing consumer benefits and strengthening future economic growth (Matejun, 2016).

Entrepreneurial capacity (EC) is a tool that helps individuals discover market opportunities before committing their resources and exposing themselves to the risk of creating a company. (Clarysse,

Tartari, & Salter, 2011) These authors, citing Baron & Ensley (2006), explained that identifying opportunities is one of the characteristics that best defines entrepreneurs and allows them to develop their skills in order to succeed in their venture.

According to the Global Entrepreneurship Monitor (GEM) and following the literature, EC is composed of two factors: (a) skills and (b) motivation. The skills that are implicit in entrepreneurship are (Díaz-Casero et al., 2012):

- How to start a business, i.e., whether the person knows how to create and start a company.

- Business management, including how to manage a business, knowledge of financial issues, marketing, sales, and human resources.

- Experience in entrepreneurship, i.e., if the entrepreneur has already managed other companies.

- Speed of reaction to new business opportunities implies how quickly an entrepreneur realizes that a market opportunity (gap) is a future business (company)

- Organizing the resources to develop a company implies whether the entrepreneur can allocate and manage the company's financial and material resources without wasting resources.

In most cases, entrepreneurial capacity has been conceived as the solution to the lack of employment in a dependent relation, and entrepreneurs use their business creation capacity to respond to this situation (Krishnan, Sivramkrishna, & Warrier, 2017). Nevertheless, this is not proven, and it is very important to conduct studies to determine which factors affect the creation of business units (Krishnan et al., 2017).

Method

This research was conducted with a non-experimental cross-sectional design, taking as the unit of analysis the graduates in 2012-2017 of university degrees and training centers in Guayaquil. The questionnaire applied is the one proposed by the GEM, which enables the use of an already validated questionnaire and the comparison of the results with previous works. For this purpose, the questions of the original questionnaire were translated from English into Spanish. For the validation of the measurement instrument, expert interviews were conducted to adjust the content of the questions to the unit of analysis. After a saturation process, a questionnaire with contextual validity was obtained. A reverse translation was performed to ensure that the questionnaire maintained the original meaning of the questions.

To avoid errors in the survey application, a pilot test was conducted to identify problems of understanding and formatting errors. The survey was applied to 20 people in the population studied for the pilot test. No syntax or form errors were found in the pilot test application. Therefore, the adjusted measurement instrument was considered ready to be applied. For the application of the instrument, the

study population was the graduates of the Entrepreneurship Degree of the Universidad Católica de Santiago de Guayaquil and the Entrepreneurship Center of the Escuela Superior Politécnica del Litoral. The survey was conducted in two stages by disseminating the link using the database (869 graduate students). In the second stage, after 15 days, the survey was sent again to the same database to improve the response rate, obtaining 102 valid surveys, corresponding to an 11.73% response success rate. According to Hernandez, Fernandez and Baptista (2014), a low response rate is to be expected with online surveys.

Once the survey responses were tabulated, a descriptive analysis was performed to identify missing values and outliers. Because the data correspond to interval variables with five levels of responses, the frequency histogram was analyzed to identify the data's behavior and missing values and outliers. This analysis found that the 27 questionnaire questions, corresponding to the five constructs of the study, have no outliers or missing values.

By visual inspection of the frequency histograms, the first evidence of the non-normal distribution of the data was found. The distribution of the data of the 27 observable variables showed a leptokurtic form with negative skewness, which was considered when choosing the method for estimating structural equation models. An analysis of the reliability of the scales of the five factors was carried out using Cronbach's alpha coefficient. Since scales suggested by the literature were used, it is recommended to establish 0.7 as the critical value for internal consistency (Chion & Charles, 2016). The IBM SPSS version 21 statistical package was used for the internal consistency analysis.

Table 1
Internal Consistency of Factors

	Number of items	Cronbach's alpha
Research and Development Transfer	6	0.887
Entrepreneurial Education and Training	6	0.872
Cultural and Social Norms	5	0.822
Skills and Training	5	0.904
Motivation	5	0.786
Ability to Create a New Business	10	0.892

Note: Critical level of internal consistency 0.7

The analysis of Cronbach's alpha coefficient demonstrated, according to Table 1, that the scales are reliable for studying the entrepreneurial capacity of graduates of the entrepreneurship degree in the city of Guayaquil. All internal consistency values are greater than the critical value of 0.7. Nonetheless, because the study relates constructs, it is necessary to assess the quality of the model employing

Confirmatory Factor Analysis to analyze factor loadings, discriminant validity, and convergent validity (Brown, 2015).

There are two main methods of estimation of Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM): the former is based on variances, and the latter is based on covariances (Ringle, Sarstedt & Straub, 2012). The most used estimation method is the covariance-based method. Although no sample adequacy analysis is performed, it is an estimation method sensitive to non-normal data distributions with small sample sizes (Ringle, Sven, & Becker, 2015). Partial Least Squares (PLS) is a variance-based estimation method. Although it is not considered a robust method because assessing the quality of estimation by a single goodness-of-fit index is impossible, it normally obtains reliable conclusions (Kwong & Kay, 2013).

Given the non-normal distribution of the observable variables and the small sample size, the estimation method for CFA and SEM that best fits the data is PLS (Brown, 2015). Sample adequacy was analyzed employing the Kaiser-Meyer-Olkin (KMO) test in addition to Bartlett's test of sphericity. The abovementioned tests mean that a factor analysis can be performed with the collected data. According to the results, the data are suitable for performing a factor analysis with a KMO of 0.889 and a significance value of Bartlett's test <0.05. A Pearson correlation analysis was performed to determine whether the constructs of the present study are reflective or formative, finding a significant correlation between the observable variables of each factor. With this, the measurement models for each factor were estimated, assuming they correspond to reflective constructs. PLS was used as the estimation method through the Smart PLS v 3 statistical package to estimate the reflective measurement models.

The measurement models were estimated through the PLS algorithm, which allowed the evaluation of factor loadings, discriminant validity, and convergent validity employing the AFC. Through the factor loadings analysis, only one of the observable variables (CSN05) was found to have a loading below the minimum acceptable of 0.7 in the Cultural and Social Norms factor. Concerning the factor Education and Entrepreneurship Skills, the observable variable EET02 has a loading below the minimum acceptable in the confirmatory evaluation of a scale. All observable variables of the Research and Development Transfer factor had loadings above the critical value of 0.7.

On the other hand, in the dimensions of the Ability to Create a New Business factor and Skills and Capabilities, all loadings had acceptable levels above the critical level. However, the observable variables M3 and M4 of the Motivation dimension had factor loadings below the critical level of 0.7. In addition, all observable variables in the Motivation factor had factor loadings below the critical level in the second-order construct Ability to Create a New Business. All factors were found to have mean extracted variance values above 0.5, with observable variables explaining more than half of the factor variance (Garson, 2016). Up to this point, the assessment of convergent validity through factor loadings

and average extracted variance values suggests the need for construct refinement by eliminating observable variables with low factor loadings.

Discriminant validity analysis was performed employing the Fornell and Larker criterion and in the analysis of cross-loadings of observable variables (Hair, Hult, Ringle, & Sarstedt, 2014). Employing the Fornell and Larker analysis, all constructs were found to be significantly different according to statistical standards. For the evaluation of the structural equation model by partial least squares estimation, the model's predictive ability was evaluated through the coefficient of determination R^2 and the effect size f^2 (Garson, 2016). The estimated model had a coefficient of determination R^2 of 0.442; although there is no critical value of acceptance in social sciences, compared with works with similar purposes, this is considered acceptable (Ringle et al., 2012).

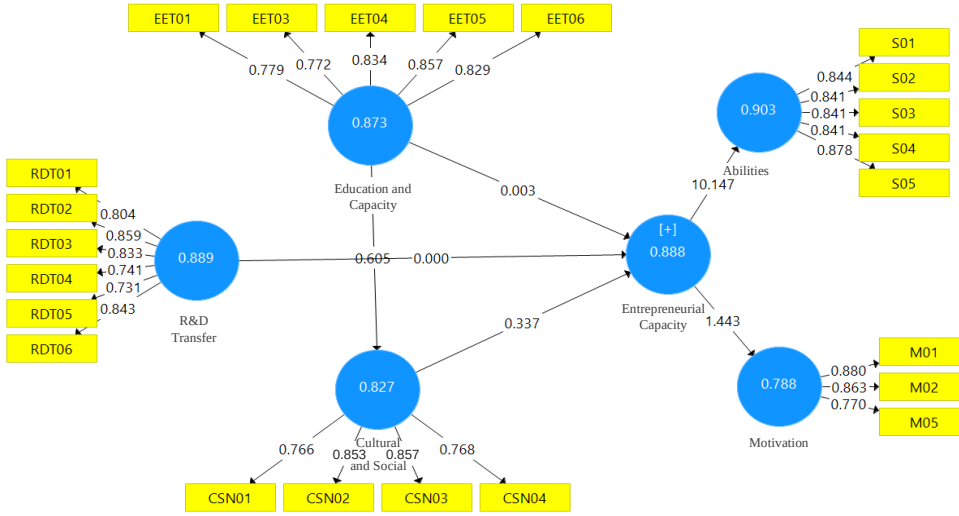

Figure 2. Estimation of the Adjusted Measurement Model

Nevertheless, the f^2 values among the explanatory factors show an insignificant predictive capacity of the Research and Development Transfer factor and the Entrepreneurial Capacity Education and Training factor. Nonetheless, the cultural and social norms factor shows a medium level of predictability in Entrepreneurial Capacity, with an effect size f^2 value of 0.250. With these results, the low predictive ability of the model was due to the incorrect specification of the Motivation factor as a reflective construct of the second-order factor Ability to Create a New Business. Given this situation, it was considered necessary to refine the constructs with low factor loadings (Harrington, 2009).

Through the refinement of the constructs by assessing factor loadings, observable variables with factor loadings less than 0.7 were eliminated. It is suggested that when testing scales suggested by the literature, a critical factor loading value of 0.7 should be set (Chion & Charles, 2016). In the Education and Skills factor, the observable variable EET02 was eliminated. In the Cultural and Social Norms factor, the observable variable CSN05 was eliminated. In the Entrepreneurship Capacity Motivation dimension, observable variables M03 and M04 were eliminated.

By eliminating observable variables with low loadings on their respective factors, the internal consistency of the factors was improved. In addition, acceptable mean extracted variances were obtained, with values greater than the critical level of 0.5. This ensures that the constructs are reliable for the study of entrepreneurial capacity in the context of entrepreneurship graduates.

Table 2
Convergent Validity Adjusted Measurement Model

	Cronbach's alpha	rho_A	Compound reliability	Average variance extracted (AVE)
Entrepreneurial Capacity	0.880	0.896	0.911	0.566
Education and Training	0.873	0.874	0.908	0.664
Abilities	0.903	0.904	0.928	0.721
Motivation	0.788	0.797	0.877	0.704
Cultural and social norms	0.827	0.832	0.886	0.660
R&D Transfer	0.889	0.895	0.916	0.646

Table 3
Discriminant Validity of the Adjusted Model - Fornell and Larker Criterion

	Entrepreneurial Capacity	Education and Training	Abilities	Motivation	Cultural and social norms	R&D Transfer
Entrepreneurial Capacity	0.752					
Education and Training	0.456	0.815				
Abilities	0.954	0.453	0.849			
Motivation	0.769	0.308	0.542	0.839		
Cultural and social norms	0.684	0.614	0.718	0.383	0.812	
R&D Transfer	0.525	0.697	0.520	0.356	0.749	0.804

Regarding discriminant validity, the analysis was carried out using the Fornell and Larker criterion, confirming that the refined constructs for the case of entrepreneurial capacity are different according to statistical standards. In this way, the Confirmatory Factor Analysis was performed, refining

constructs to obtain reliable constructs that allow valid conclusions to be obtained in the contrast of hypotheses of the structural model. Before testing the hypotheses of the structural model, the collinearity between the model's factors was evaluated through the variance inflation value. The results show no collinearity problem between the structural model factors since the variance inflation factor values are less than five (Hair et al., 2014).

Table 4
Adjusted Structural Model Hypothesis - PLS-SEM

	Hypotheses	Route Coefficients	
H_1	EET → Ability to Create a New Business	0.059	Rejected
H_2	EET → CSN	0.614	Accepted
H_3	RDT → Ability to Create a New Business	-0.003	Rejected
H_4	CSN → Ability to Create a New Business	0.650	Accepted

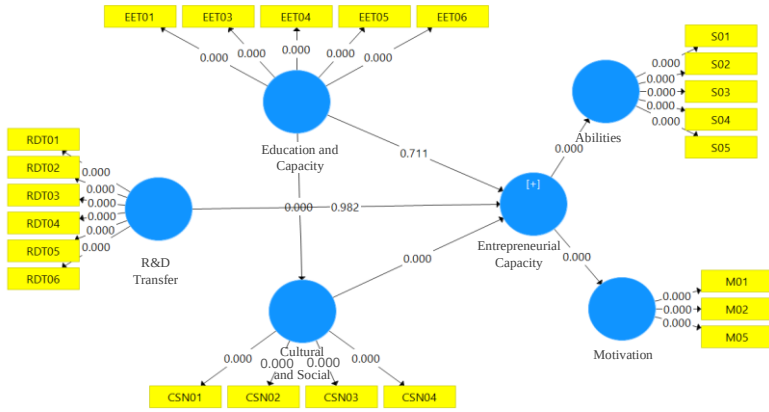

Figure 3. Bootstrapping Estimated Model

To contrast the hypotheses more objectively, it is suggested to estimate the structural model by bootstrapping with five thousand subsamples (Kwong & Kay, 2013). Employing bootstrapping, the hypotheses can be tested by evaluating the p-values at a significance level of 0.05, which is a level commonly used in social science studies. Through the bootstrapping procedure with five thousand subsamples, it is confirmed that hypothesis 2 and hypothesis 4 are accepted at a significance level of 0.05.

H_2: EET → CSN

H_4 : CSN → Ability to Create a New Business

Thus, only the cultural and social norms factor has a direct, positive, and significant influence on the ability to create a new business. The present research shows that education and entrepreneurship skills and the transfer of research and development do not directly and significantly influence the ability to create a new business. Nevertheless, it is shown that the Education and Entrepreneurial Capacity factor indirectly influences the ability to create a new business. This relation is significant if cultural and social norms mediate it.

Table 5
Adjusted Structural Model Hypothesis - PLS-SEM

	Hypotheses	Coefficients	T Statistics	P value	
H_1	EET → Ability to Create a New Business	0.059	0.371	0.711	Rejected
H_2	EET → CSN	0.614	8.137	0.000	Accepted
H_3	RDT → Ability to Create a New Business	-0.003	022.	0.982	Rejected
H_4	CSN → Ability to Create a New Business	0.650	6.249	0.000	Accepted

Note. Estimation with five thousand subsamples

For the evaluation of the adjusted structural equation model through partial least squares estimation, the model's predictive capacity was evaluated using the coefficient of determination R^2 and the effect size f^2. By estimating the adjusted model with refined constructs through the elimination of observable variables with low factor loadings, it was possible to improve the coefficient of determination from 0.442 to 0.447. Although there is no critical value for the R^2 in social science studies, it is considered that 0.442 is an acceptable value with which 44.2% of the variation in the capacity to create a new business is explained by the exogenous variables of the model.

On the other hand, through evaluating the predictive capacity of the model employing the f^2 size effect, it was found that the factors Education, Capacity in Entrepreneurship, and Research and Development Transfer do not have a direct predictive capacity for the ability to create a new business. On the other hand, the Cultural and Social Norms factor has a medium predictive capacity on the ability to create a new business. To complement the evaluation of the quality of the estimated model, the predictive significance was analyzed through Stone-Geisser'sQ^2 value that can be obtained by the Blindfolding procedure, in which the predictive relevance of an exogenous construct on an endogenous latent variable is indicated (Kwong & Kay, 2013). Ability to create a new business $Q^2 = 0.242$

It can be concluded that the proposed structural model has a medium predictive capacity according to the criteria of Hair et al. (2014). To investigate the results further, the model's heterogeneity was assessed by including age as a moderated variable (Wong, 2016). With this, it was sought to identify

whether the factors Education, Capacity in Entrepreneurship, and Transfer in Research and Development have a significant direct relation in the Ability to Create a New Business for certain age ranges.

By estimating the moderation effect of age through the product calculation using the PLS algorithm, it was found that age does not significantly moderate the relation between the independent factors in the Ability to Create a New Business. The standardized path coefficient values for the moderating effects were less than 0.02, significantly lower than the critical figure suggested by Ringle et al. (2012). In addition, age was also found to have no significant direct effect on the Ability to Start a New Business.

Regarding the moderating effect of gender, it was found that only gender did not significantly moderate the relation between the independent factors and the Ability to Create a New Business. A standardized path coefficient of 0.136 was obtained using the PLS algorithm estimation, which is close to the acceptance value. To confirm this result more objectively, the model was estimated by bootstrapping with five thousand subsamples to test the hypothesis of moderation effect using a p-value with a 0.05 significance level. Through the bootstrapping estimation with five thousand subsamples, the non-significant moderating effect of gender on the independent factors and the Ability to Create a New Business is confirmed.

Discussion

Culture is a determining factor in how individuals cope with the constraints on generating short-term solutions and how they cope with the formal constraints that social norms may place on employee effectiveness in long-term business development. Human beings construct “mental models” to try to explain and interpret the reality that surrounds them, and the business environment is no exception, according to the sociocultural theoretical approach that studies the factors that influence entrepreneurial activity. (Díaz-Casero et al., 2005). One of the aspects that cannot be left isolated in the study of entrepreneurship is the way the individual reacts conditioned by the environment since social and cultural norms are evident when it comes to analyzing economic growth, business innovation, and job creation (Díaz-Casero, Hernández-Mogollón, Sánchez, & Postigo, 2010).

There are different points of view, beliefs, and motivations that provoke an internal hesitation to act based on international entrepreneurship. Further progress is hampered by the lack of valid scales to measure the social identities of founders. Given this, a better understanding of entrepreneurship should be sought based on experiences and examples focused on the social identity theory. (Sieger, Gruber, Fauchart, & Zellweger, 2016). Educators in the university field have the mission over time to adapt to the

changes and demands of students. The interests of both should always be pursued by reforming programs and local economies at the same time. With appropriate tools provided by the university, it will open the mentality of university students and, in the same way, train professionals from a more innovative and entrepreneurial point of view (Sotirakou, 2016).

Entrepreneurial capacity (EC) is a tool that helps individuals discover market opportunities before committing their resources and exposing themselves to the risk of creating a company. (Clarysse et al., 2011) These authors, citing Baron and Ensley (2006), explained that identifying opportunities is one characteristic that best defines entrepreneurs and allows them to develop their skills to succeed in their venture. The recognition of opportunity is connected to entrepreneurial capacity since entrepreneurs who want results should analyze their environment thoroughly (Clarysse et al., 2011). Nevertheless, for these authors, recognizing the opportunities in the market is not a skill exclusive to certain entrepreneurs but should be a required skill as an initial condition for those who aspire to become entrepreneurs.

To further analyze the results of the model estimation, a heterogeneity analysis was performed to determine whether the hypotheses were accepted for differences in the age and gender of the respondents. It was found that, for different age ranges, for men and women, education and research-development transfer do not influence the entrepreneurial capacity of the graduates of the entrepreneurship degree of the Catholic University of Santiago de Guayaquil and the Entrepreneurship Center of the Escuela Superior Politécnica del Litoral.

Recent research has specifically contributed to the environment latent variable with new information regarding the factors that affect new business creation. For Diaz-Casero et al. (2012), the environmental or surrounding factors that influence the creation of a new business are (a) entrepreneurial education and training, (b) transfer of research and development; and (c) cultural and social norms. Their findings demonstrated the unique role of cultural and social norms in generating new business. Nonetheless, these authors concluded that education and training in new business creation does not significantly influence new business creation (it is not positively associated with new business creation) but is an indirect facilitator through the cultural and social norms of the population.

Conclusions

This study sought to determine the factors that influence the creation of business units. For this purpose, a sample of graduate students from the entrepreneurship program at the Universidad Católica Santiago de Guayaquil and the Entrepreneurship Center of the Escuela Superior Politécnica del Litoral was taken as the unit of analysis. The validated questionnaire was used for data collection, and the evaluation of the

structure of the model factors and the structural model hypotheses and structural equation models were estimated using the SMART PLS version 3 program.

After confirming the reliability of the factors through internal consistency analysis, and discriminant and convergent validity, the structural model was estimated using PLS-SEM. By estimating the path coefficients of the structural model, two of the four hypotheses were accepted:

H_2: EET → CSN

H_4 : CSN → Ability to Create a New Business

Only the cultural and social norms factor has a direct, positive, and significant influence on the ability to create a new business. At the same time, education, entrepreneurship, and the transfer of research plus development do not directly and significantly influence the ability to create a new business. Nevertheless, it is shown that the Education and Entrepreneurship Skills factor indirectly influences the ability to create a new business. This relation is significant if cultural and social norms mediate it. To further analyze the results of the model estimation, a heterogeneity analysis was performed to determine whether the hypotheses were accepted for differences in the age and gender of the respondents. Thus, it was found that, for different age ranges, for men and women, education and research-development transfer do not influence the entrepreneurial capacity of the graduates of the entrepreneurship degree of the Catholic University of Santiago de Guayaquil and the Entrepreneurship Center of the Escuela Superior Politécnica del Litoral.

Given the importance of the creation of new businesses, governments are establishing public policies that allow the number of ventures to increase (Acs, Åstebro, Audretsch, & Robinson, 2016), since in addition to being beneficial for development and economic growth, it has been proven that they help in poverty reduction and improve the effectiveness and sustainability of economic aid provided by international organizations (Naudé, 2013). The determinants enabling new company creation have been less studied in developing countries than in developed countries. The literature reveals that researchers have considered the institutional environment (macroeconomic stability, public policies, and knowledge) and certain supply (income and financing) and demand (industrial structure and income) factors as the differentiating factors of entrepreneurship in developed countries. Nevertheless, considering other factors in a series of comparative studies of countries, it is concluded that the low level of entrepreneurship in developing countries is due to greater bureaucracy and worse governance structures (Calá, Arauzo-Carod, & Manjón-Antolín, 2015; Sieger et al., 2016).

Among the study's main limitations are the size of the sample and the fact that the data were obtained at a single moment in time, which means that conclusions can only be drawn about the association of variables. It is suggested that future research expand the sample size by including graduate students from entrepreneurship degrees from other universities. Another aspect that this research intends

to cover is to propose improvements to the educational opportunities of the population consulted in response to the limitations they identified when facing the challenge of developing new business units or so-called opportunity ventures. One of the results obtained in the research established that culture is a determining factor in how individuals face the limitations to generate short-term solutions and how to face such limitations for long-term entrepreneurial development.

The education provided at universities has positive and negative effects on students. That is, if given in the right way, it will help improve the capabilities and abilities of each of them, but if it is not done in the right way or with the right approach, it will generate fears of seeing this study model as an unproductive challenge (Zhang, Duysters, & Cloodt, 2013). It should be handled more realistically, go into more depth, be impartial at all times, and have more committed and realistic main objectives. (Sieger, Fueglistaller, & Zellweger, 2016). A positive way to encourage entrepreneurial training in universities and student participation is to create projects or agreements with companies. In this way, students will be able to put into practice what they learn in class and become actively and dynamically involved in the daily environment of a company or an entrepreneur. The program designed is not only based on the abovementioned aspects but also involves technology as an essential aspect (Klofsten, 2000).

On the other hand, if culture is a determining factor, then this factor will be used to generate entrepreneurship units when the student finishes the degree. To this end, it is suggested that students of business degrees during the first two semesters of training can participate in cultural events, such as workshops, entrepreneurial meetings in different parts of the country, and portfolios of entrepreneurial projects in business in different areas of Ecuador, among others. It is also necessary to transform classrooms into laboratories, where management practices can be observed to establish the evolution of an organization's identity through the performance of students of business degrees (entrepreneurial or not) from different existing cultures (cities). Therefore, it is necessary to expand the research to other areas of the country where culture plays a leading role in forming new business units.

Another proposed approach to strengthening the training of entrepreneurs and future entrepreneurs is to develop practical systems that enable them to understand the needs of society. Likewise, spaces should be created to develop entrepreneurial abilities through the identification of opportunities and generate scientific debate, with expert lecturers in the area to contribute to the development of a new generation of Ecuadorian entrepreneurs, where entrepreneurial experiences are shared according to the idiosyncrasy and culture of each city in Ecuador.

It is proposed that technology be included in academic curricula in order to provide the student or entrepreneur in training with ample information on the main problems faced by the profession and the socioeconomic and political situation in different regions and cities of the country, with the creation of databases of problems faced by entrepreneurs and publications on life projects as future entrepreneurs.

All these innovations make it evident that the educational requirements of entrepreneurial professionals or business degrees in Ecuador should be urgently investigated to determine if they share the abovementioned needs.

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