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Fostering innovation by promoting entrepreneurship: from education to intention

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Abstract

In the past decades, entrepreneurship has become one of the top concepts in the business field. Its relevance has increased since 2009 due to the global economic crisis. The literature associates entrepreneurship with the ability to innovate and create new products, services and projects, whether considering entrepreneurship as a new business initiative or as an innovation and marketing practice within organizations.

Despite its relevance, there is no empirical evidence on the enabling factors of entrepreneurship and their contribution to the development of a marketing innovation centered culture. Our model therefore identifies these enabling factors. The data gathered covers four countries: names. I test the framework, keeping in mind each country has its own national education policies.

The findings indicate that entrepreneurship education is common in three of the four countries and therefore is a main contributor to entrepreneurial intention. Moreover, there were no distinguishing in propensity regarding age and gender, but the combined country and education affects entrepreneurship propensity. Our analysis poses questions that will guide future paths of research.

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Keywords: Entrepreneurship education; propensity to entrepreneurship; university students, Europe vs USA

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1. Introduction

Entrepreneurship is a way of thinking that emphasizes opportunities in relation to threats. The identification of opportunities is itself a process based on intentions (Krueger Jr, Reilly, & Carsrud, 2000), hence a study of determinants of propensity for entrepreneurship is of great interest for both academia and decision makers.

Understanding individual intrinsic factors and its influence on entrepreneurial propensity is indispensable to establish correct policies; but understanding external factors and their influence on decisions is also important.

Taking as its starting point the assertion that self-employment is one solution to the global economic crisis, managers and policy makers might want to understand how to increase entrepreneurial spirit and behavior.

Thus, the main objective of this work is to assess the students' characteristics and entrepreneurial education background, in order to: (i) determine the influence of these dimensions on entrepreneurial skills; and, (ii) conclude their role as facilitators or inhibitors of entrepreneurial activities in different countries.

Hypothesis testing established that students have intrinsic characteristics that affect the propensity to undertake new ventures or entrepreneurial behaviors inside organizations, and that entrepreneurial education affects that ability. However, there are many national differences in entrepreneurial education. These findings reinforce the results exposed by various authors with regard to the strong influence of entrepreneurial education on the propensity for entrepreneurship. And allows its generalization while educational practice in European countries and North America.

The remainder of the work is structured as follows. Section two reviews the major theoretical concepts. The following sections present the research method and data processing performed. The last section presents the main conclusions and suggests directions for future research.

2. Theoretical Overview and Hypotheses Development

The creation of a business might be a response to favorable environmental conditions, such as the emergence of an attractive niche market. However, there is always the need to assess the surrounding context and compose a business plan (Krueger Jr et al., 2000).

The development of innovation abilities and entrepreneurship is of great importance for scientific progress and industrial and social development.

The influence of education on the propensity for entrepreneurship has been the subject of several studies. According to Gendron (2004) in today's business and educational context, there is no room to consider entrepreneurship as a vocational education course, but rather to evaluate the methods and the contents conveyed and their impact on students' entrepreneurial process.

Considering the impact of entrepreneurship on regional development, the design of disciplinary programs that are capable to contribute to entrepreneurial propensity, and entrepreneurial culture is fundamental. As well as provide students with the necessary tools for new business creation (Moriano, Gorgievski, Laguna, Stephan, & Zarafshani, 2011).

Gendron (2004) referring to the American case asserts that the most schools already have entrepreneurship courses. The question raised is at what level of education must be individuals subject to entrepreneurial education and how this training affects innovation and entrepreneurship behavior.

Since the 1990s the literature has mentioned the importance of entrepreneurship education. According to the following table, several areas have been emphasized, as it turns out from the following table:

Table 1. The role of education in different dimensions of entrepreneurship

Domain	Author (year)
Management and entrepreneurship	Ireland, Hitt, & Sirmon (2003), Canina, Palacios & Devece (2012)
Organizational entrepreneurship	Miles, Munilla & Covin (2002), Kuratko, Ireland e Hornsby (2001), Kuratko, Ireland, Covin & Hornsby (2005), Ireland, Covin & Kuratko (2009)
Entrepreneurial strategies	Hitt, Ireland, Camp & Sexton (2001), Ireland, Covin & Kuratko (2009)
Gender and minorities entrepreneurship	Chaganti & Greene (2002), Greene, Hart, Gatewood, Brush, & Carter (2003), Gundry & Welsch (2001), Eddleston & Powell (2008), Avolio (2012)
Entrepreneurs' psychological characteristics	Kickul & Gundry (2002), Langowitz and Minniti (2007), Ferreira, Raposo, Rodrigues, Dinis, & do Paço (2012), Moriano, Gorgievski, Laguna, Stephan, & Zarafshani (2012)
Entrepreneur spirit	McDougall, Oviatt, & Shrader (2003), Zahra, Hayton, Marcel, & O'Neill (2001), Miguel & Beltrán (2012)

Source: Adapted from Faria, Couto, and Tiago (2014)

Considering the impacts of entrepreneurship on innovation, productivity and competitiveness of organizations and individuals, already established and widely referenced in the literature (Plaschka & Welsch, 1990), and the emphasis is placed in the contents that should be or not transmitted and how it stimulate the entrepreneurial process of the students.

The analysis of the main axes of research around the concept of entrepreneurship and entrepreneurship education at university-level studies seem to have the best results, so the remainder of the work will pertain to university students.

Prodan and Drnovsek (2010) explain entrepreneurial intent among higher education students by administering questionnaires at two European universities. Their model considers entrepreneurial intention as resulting from the entrepreneurial self-efficacy, as determined by personal contacts and networks variables models of perceived performance. These two variables have an indirect effect on entrepreneurial intentions (through entrepreneurial self-efficacy), in addition to a direct effect. Other variables surveyed which determine the entrepreneurial intention of these students were: (i) the number of years that a student spends in school; and, (ii) some innovations indicators, such as the number of patents and the type of research carried out in universities are. The authors concluded that the variables that made the greatest contribution to entrepreneurial intention were entrepreneurial self-efficacy, the kind of research done at the university, the perceived models, the number of years at the university and the number of patents registered, regardless of cultural context. But how long can we ignore the cultural effects on innovation and entrepreneurship? Does a country's educational policy affect entrepreneurship propensity in its population and among its university students?

The entrepreneurial profile assumes a leading role in the entrepreneurial inclination. However, there are questions concerning the role of personal characteristics in entrepreneurial propensity, since that have been underestimated in previous research due to methodological limitations, such as sample size (Hisrich, Langan-Fox, & Grant, 2007). The characteristics that make up the profile of the entrepreneur from an early age are assumed to be a preponderant factor in the evaluation of the entrepreneurial propensity, taken as a differentiating condition (Baron, Franklin, & Hmieleski, 2013; Koh, 1996).

Koh (1996) identified four indicators of the entrepreneurial profile: need for self-realization, locus of control, moderate capacity to assume risk, high tolerance for ambiguity, high level of self-confidence and ability to innovate.

The presence of these characteristics affects a person's intention to create a business (Krueger & Carsrud, 1993; Thomas & Mueller, 2000).

The first research question determines the relationship of the propensity for entrepreneurship to the entrepreneurial profile. Thus, the initial hypotheses are as follows:

H1: The combined effect of the factors age and sex does not generate differences in the average level of the propensity for entrepreneurship.

H2: The combined effect of the factors of nationality and age does not generate differences in the average level of the propensity for entrepreneurship.

H3: The combined effect of the factors of nationality and sex does not generate differences in the average level of the propensity for entrepreneurship.

Therefore, understanding the impact of contextual factors on entrepreneurial education will reinforce the measurement needs and justify the importance of personal background in entrepreneurial intention. Especially considering that the transformations occurred in daily firms operations and competitive dynamics, requires not only people willing to create new ventures, but also human capital with an entrepreneurial mindsets inside the firms, that fosters innovation. Similarly, the colossal modification of financial systems and the consequent emergence of new funding opportunities contributed to an exponential attractiveness of entrepreneurial activity. The entrepreneurial education found in these arguments a plausible reason for its recovery.

Another environmental factor considered in this analysis, and perhaps the most intuitive, is the economic context. The economy of any region or country has affects the entrepreneurial propensity. The economic changes experienced in the 21st century make entrepreneurship a key competence for any educational process, especially in higher education. The students' development of entrepreneurial skills is increasingly valued in academic programs (Urban, 2006). Hence, the foregoing discussion suggests that the combined effect of the factors of nationality and entrepreneurial education does not generate differences in the average propensity for entrepreneurship, which is the fourth hypothesis set.

Therefore, and considering the literature review done in this study, the previous hypothesis were established in order to understand which combined factors have influence on entrepreneurship propensity.

3. Method and Results

Starting a new venture can be a complex decision, and scholars in several disciplines have focused on a variety of factors potentially contributing to an individual's propensity to start a business (Gartner & Shane, 1995). Likewise, implementing an entrepreneurial focus in established organizational environments requires innovative and entrepreneurial human capital.

Langowitz and Minniti (2007) propose grouping factors influencing entrepreneurial decisions into three main groups: socio demographic factors, perceptual variables, and contextual factors.

Our hypotheses aim at investigating what contextual variables influence the entrepreneurial propensity of university students and whether these variables have a combined effect across genders and countries. To validate these assumptions, data was collected from a sample of 734 European and north-American university students. An inquiry has been structured covering seven dimensions of analysis: (1) students' background information; (2) entrepreneurship background; (3) contextual dimension; (4) physiological profile; (5) entrepreneurial abilities; (6) entrepreneurial intention; and, (7) entrepreneurship education.

The definition of the sample followed the principle of proportionality and quotas were set to each country: Italy obtained a 61.15 representation, followed by the Netherlands with 18.91, of Portugal with 12.74 and, finally, of Ireland with the remaining 7.20. Of the 734 respondents, 339 (46.19%) are male.

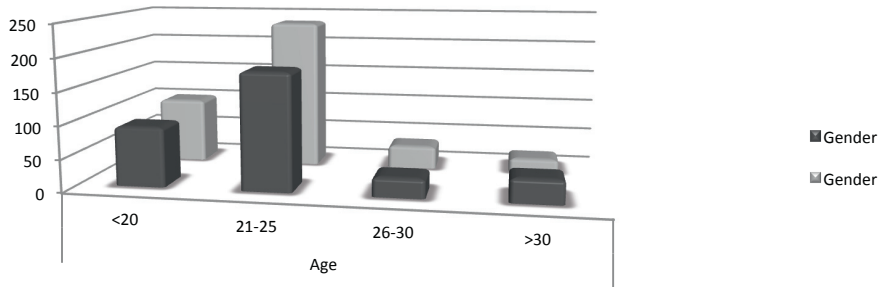


Fig. 1. Sample composition by gender and age

When analyzed by sex and age, we note that males are predominant only in the over-30 age group. The 21-25 age group has a higher frequency regardless the students’ gender. Regarding future occupation format, about 49 respondents choose the option "Employed", being that most (51), pointed the alternative "self-employed." The following figure shows the intention to undertake a new venture after finishing university degree.

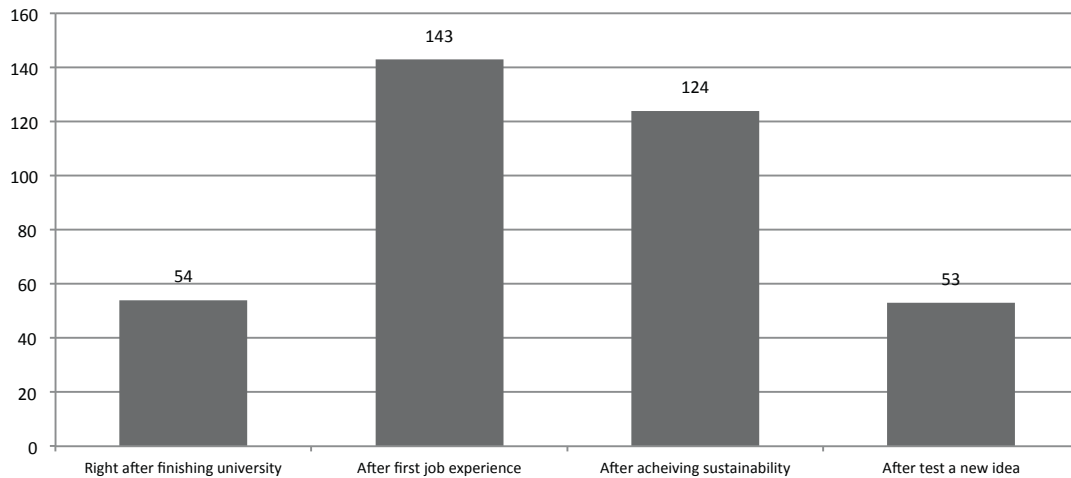


Fig. 2. Sample composition by intention to undertake a new venture

The purpose of this study was to determine the dimensions that make up the profile of the entrepreneur and entrepreneurial education, and to identify the influence of other factors on this variable. For this purpose a multifactorial variance analysis was performed. The purpose of the analysis of variance to more than one factor is to test the effects of various fixed factors – that define K samples – a quantitative dependent variable.

We begin by testing the combined effect of the factors age and sex in generating differences in the average propensity for entrepreneurship.

Table 2. Dependent variable: entrepreneurial propensity, combined effect gender*age

Source	Sum of squares Type III	df	Average	F	Sig.
Model	4,960941	3	1,653647	1,655827	0,175194
Interaction	0,001421	1	0,001421	0,001422	0,969925
Gender	3,094436	1	3,094436	3,098515	0,078783
Age	0,160066	1	0,160066	0,160277	0,689019
Gender * Age	0,115857	1	0,115857	0,11601	0,733501
Error	729,0391	730	0,998684		
Total	734	734			
Total correct	734	733			

a R² = ,007 (R² Adjusted= ,003)

Regarding the combined interaction effect, no significant result was found ($p = 0.969$). However, when assessing the main effect of age, the results pointed to at least one age group where the average level of the propensity for entrepreneurship is different ($p = 0.689$). Looking to the results of the main effect of gender, the null hypothesis is rejected, leading to the conclusion that the average propensity for entrepreneurship differs between men and women ($p = 0.078$). This model explains the 7% variation in the propensity for entrepreneurship. Thus age and sex are not the most relevant determinants of a person's entrepreneurial profile.

We then sought to determine if there is a combined influence of nationality and individual and age range in propensity for entrepreneurship, by applying the same statistical technique.

Table 3. Dependent variable: entrepreneurial propensity, combined effect: age*nationality

Source	Sum of squares Type III	df	Average	F	Sig.
Model	30,76182	3	10,25394	10,64415	0,0000
Interaction	9,986803	1	9,986803	10,36685	0,0013
Age	0,397545	1	0,397545	0,412674	0,5208
Nationality	28,12022	1	28,12022	29,19034	0,0000
Age * Nationality	0,031957	1	0,031957	0,033173	0,8555
Error	703,2382	730	0,96334		
Total	734	734			
Total correct	734	733			

a R² = ,04 (R² Adjusted= ,038)

This model explains four percent of the variations of the propensity for entrepreneurship, demonstrating that in spite of the effects found, personal characteristics do not affect the entrepreneurial profile.

Table 4. Dependent variable: entrepreneurial propensity

Source	Sum of squares Type III	df	Average	F	Sig.
Model	631,5497	547	1,15457	2,096139	0,0000
Interaction	10,71565	1	10,71565	19,45441	0,0000
Nationality	4,613279	1	4,613279	8,375476	0,0043
Entrepreneurship Education (EE)	586,6605	538	1,090447	1,979723	0,0000
Nationality* EE	5,573666	8	0,696708	1,264884	0,2643
Error	102,4503	186	0,550808		
Total	734	734			
Total correct	734	733			

a $R^2 = ,860$ (R^2 Adjusted= ,45)

In the literature there are references to entrepreneurial education as an enabler factor for entrepreneurship propensity. The results found also validate that entrepreneurial education relevance to entrepreneurship propensity varies from country to country, unveiling the importance of country educational policies in this domain.

Since this last model explains the 86 model variation concerning the propensity for entrepreneurship, it can be infer that entrepreneurial education combined with the nationality of the individual greatly explains entrepreneur's profile. This conclusion finds support in the literature reviewed.

However, these variables do not present significant differences among the four countries examined. This lesson can be correlated with the phenomenon referred to by Lüthje and Franke (2003), where the vast majority of countries have course units or modules of entrepreneurship within curricular units.

4. Final Considerations

The influence of entrepreneurial education in the propensity for entrepreneurship, as referenced in this work, has already been widely exploited. However, there remains a gap with respect to empirical evidence of the determinants of this tendency in a North American context. This work aims to bridge this gap by presenting empirical evidence from four European countries, culturally and geographically distinct and differentiated educational projects.

The influence of entrepreneurial education in the propensity for entrepreneurship had already been referenced in the American context and in Japanese. The same is confirmed by testing this relationship, in combination with the nationality, since the valuation of education varies from country to country.

When combined with entrepreneurial education to the nationality of the individual, entrepreneurial profile is explained significantly, which corroborates with other authors listed. It should be noted, however, that in the four countries examined, the variables when analyzed per se do not present significant differences.

These findings are not meant to cover all the wealth of this area, being just another contribution to the understanding of this phenomenon and, above all, an instrument diagnostic helper. The recitals set out above have, however, to take account of the limitations inherent in a work of this nature. This study was based on data collected in four countries, by which the universe treated is limited and the data reflect the reality of the moment of collection of the information. Other dimensions might have been evaluated in this project. It is intended in future research, include new data that contribute to bridge these gaps.

In addition, the arguments exposed, it would still be interesting to evaluate two other dimensions. On the one hand, to extend the scope of the study to other countries and, on the other hand, look into the behavior of non-University individuals in this area to evaluate not only the impact of entrepreneurial education in subjects with high educational level, but in the population in general.

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