

## **FACTORS AFFECTING STUDENTS' ENTREPRENEURIAL INTENTIONS OF POLYTECHNIC INSTITUTE OF SETUBAL: A COGNITIVE APPROACH**

***FATORES QUE AFETAM AS INTENÇÕES EMPREENDEDORAS DOS ALUNOS DO INSTITUTO  
POLITÉCNICO DE SETUBAL: UMA ABORDAGEM COGNITIVA***

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**Teresa Gomes da Costa<sup>a</sup> e Pedro Mares<sup>b</sup>**

<sup>a</sup> **Teresa Gomes da Costa**

teresa.costa@esce.ips.pt

Politechnic Institute of Setúbal, Portugal

<sup>b</sup> **Pedro Mares**

pedro.mares@gmail.com

Politechnic Institute of Setúbal, Portugal

**Palavras-chave:**

Empreendedorismo, educação, intenção empreendedora, teoria do comportamento planejado.

**Resumo** O empreendedorismo constitui uma importante opção para os estudantes. Alguns investigadores consideram que a decisão sobre torna-se empreendedor envolve um processo mental elaborado. Este estudo pretende compreender este processo mental, seguindo a abordagem cognitiva através da aplicação do questionário das Intenções Empreendedoras (EIQ) a estudantes da Escola Superior de Ciências Empresariais (ESCE), Instituto Politécnico de Setúbal (IPS). O principal objetivo deste estudo consiste na compreensão das intenções empreendedoras dos estudantes, considerando a influência social e a percepção das habilidades. Adicionalmente, o estudo tenta compreender a influência do gênero, idade, experiência laboral e experiência de auto-emprego nas intenções empreendedoras dos estudantes. Para atingir estes objetivos foi utilizada uma abordagem quantitativa. As técnicas estatísticas utilizadas foram a análise fatorial para a identificação dos factores, assim como a análise de correlação e o teste t para a confirmação das hipóteses. Este estudo permitiu a confirmação das conclusões de estudos prévios no que concerne à relação entre a intenção empreendedora e a atitude para o empreendedorismo, normas subjetivas e controlo comportamental percebido. Estes resultados revelaram que a idade e o gênero estão significativamente correlacionados com as intenções empreendedoras.

**Keywords:**

Entrepreneurship, education, entrepreneurial intention, theory of planned behaviour.

**Abstract** Nowadays entrepreneurship is an important option for students. Some researchers considered that the decision to become an entrepreneur involves an elaborate mental process. This study tries to understand this mental process following the cognitive approach through the application of Entrepreneurial Intentions Questionnaire (EIQ) to students from College of Business and Administration (ESCE), Polytechnic Institute of Setubal (IPS). The main purpose of this study is to understand the student's entrepreneurial intentions, considering the influence of social and skills perception. Additionally the study tries to understand the influence of gender, age, labour experience and self-employment experience in entrepreneurial students' intentions. To achieve this objectives, it was applied a quantitative approach. The statistical techniques used were factor analysis for the identification of factors, as well as, correlation analysis and t-test for hypotheses confirmation. This study allowed the confirmation of the findings of previous studies concerning the relationship between the entrepreneurial intention and the attitudes toward entrepreneurship, subjective norms, and perceived behavioural control. These results also revealed that age and gender are significantly correlated to entrepreneurial intentions.

## 1 INTRODUCTION

It seems to be consensual that entrepreneurship is the result of a cognitive process. However the decision to become an entrepreneur is very complex and results from an elaborate mental process. Thus, educational initiatives have been considered as an important tool that can increase the supply of potential and nascent entrepreneurs (increasing people aware and interest on entrepreneurial career option as well on start a new venture).

However, there is a lack of agreement on the variables that influence the individual's decision to start a venture. Cognitive approaches have involved considerable interest (KRUEGER, 2003; BARON,

2004). In fact, several studies refer the importance of the entrepreneurial intentions regarding the decision to start a new firm. Cognitive variables are considered crucial for the understanding of personal decision related with the creation of enterprises (SHAVER; SCOTT, 1991; BARON, 2004). According with these authors this cognitive focus offers further insights that can help understanding the complex process of entrepreneurship.

This study follows the cognitive approach through the application of an entrepreneurial intention model. The main purpose of this study is to understand the student's entrepreneurial intention. Specifically the study tries to understand 1) the influence of social and skills perceptions in

determining entrepreneurial intentions according with the model three motivational factors of Liñán (2004); 2) the influence of gender in entrepreneurial students intentions; 3) the influence of age in entrepreneurial students intentions; 4) the influence of labour experience in entrepreneurial students intentions and 5) the influence of self-employment experience in entrepreneurial students intentions.

The present study is divided into two parts. On the first part, after the introduction of the subject is presented a brief literature review concerning entrepreneurial intentions. On the second part, after the explanation of the methodology, and the presentation of the hypotheses, the results are discussed and conclusions presented.

## 2 LITERATURE REVIEW AND HYPOTHESES

### 2.1 Entrepreneurial Intentions

The literature on entrepreneurship can be organized into two streams (LIAO; WELSCH, 2005): person and environment. Several research contributions concerning entrepreneurship followed both perspectives are presented in the table below.

**Table 1 – Entrepreneurship streams**

Author	Contribution	Stream
Schumpeter (1934)	Entrepreneurs create opportunity by disrupting the equilibrium in the marketplace.	Individual
Hayek (1945)	The economic problem is related not only with the allocation of resources but also with the utilization of knowledge. Knowledge is not given in totality to anyone.	Individual
Kirzner (1973)	Awareness that not only for the possession of information can helps the recognition and exploitation of opportunities.	Individual and Environment
Vesper (1979)	Work experience, hobbies, networks, systematic search can contribute to opportunity recognition and entrepreneurial activities.	Individual and Environment
Drucker (1985)	Opportunities are innovations that occur due to changes in industry structure, demand, outside events, demographics.	Environment
Kirzner (1985)	Alertness can provide opportunity recognition and exploitation.	Individual
Bird e Jelinek (1988)	Schemas, mental models, and opportunity recognition.	Individual
Katz e Gartner (1988)	Entrepreneurial intention and recognition.	Individual
Christensen e Peterson (1990)	Market and technological knowledge, specific problems and social encounters are a source of venture ideas.	Environment
Gaglio e Taub (1992)	Pre-recognition of environmental, technological, social, economic, cultural, and personal forces guide to opportunity recognition.	Individual
Bhave (1994)	External conditions and aspiration to start business motivate a conscious search.	Individual and Environment
Venkataraman (1997)	Opportunity identification and opportunity recognition should be part of what distinguished entrepreneurship as its own.	Individual
Timmons (1999)	The role of experience in opportunity recognition.	Individual
De Koning (1999)	Initial ideas come from continuous information search without a specific objective.	Individual and Environment
Shane e Venkataraman (2000)	Entrepreneurship should be concerned with the sources of opportunities and the individual.	Individual and Environment
Krueger (2000)	The role of intention in opportunity development	Individual
Ardichvili et al (2003)	Theory building using personality traits, social networks, and knowledge as precursors to alertness.	Individual
(Casson e Wadeson (2007)	Opportunity is an unexploited project which is perceived by an individual.	Individual

In the entrepreneurship literature many studies have focused on intentions (BIRD, 1988; KRUEGER; REILLY; CARSRUD, 2000). Intentions have been proved to be the best predictors of individual behaviours when the behaviour is rare, hard to observe or involves unpredictable time (personality, motivation and prior experience) and contextual variables (e.g. social context and economics). Concerning the first dimension, Zhao, Seibert and Hills (2005) show that psychological characteristics together with developed skills and abilities influence entrepreneurial intentions. Regarding the contextual variables, other authors demonstrate that environmental influences and environmental support have impact on entrepreneurial intentions.

In the psychological literature there is a different approach to entrepreneurial intentions and these subject has been studied in terms of process models (intentions models). Among these models, the most popular are the Entrepreneurial Event Theory (SHAPERO; SOKOL, 1982) and the Theory of Planned Behaviour (AJZEN, 1991).

According with Shapero's model (1982) the phenomenon of the entrepreneurial intentions is influenced by perceptions of desirability, which means by the value system and social system related with each individual, and feasibility, that depends on the financial support and potential partners of the entrepreneur. This model was empirically applied and developed later on by Krueger et al. (2000) and Peterman and Kennedy (2003).

The Ajzen's model (1991) tries to explain the influence of cultural and social environment in human behaviour. This model is based on the individual's intention, which is the result of three factors: 1) the attitude towards entrepreneurship, 2) the subjective norms and 3) perceived control over the firm-creation behaviour. Also this model was adopted by several authors in their studies (KOLVEREID, 1996a; KOLVEREID, 1996b; TKACHEV; KOLVEREID, 1999; KRUEGER; REILLY; CARSRUD, 2000; LIÑÁN, 2004; FAYOLLE; GAILLY, 2005; VECIANA; APONTE; URBANO 2005; FAYOLLE; DeGEORGE, 2006; KRUEGER, 2007; ENGLE et al.; 2010).

Both models have been extensively used to study entrepreneurship. Results have always been consistent with the applicability of the theory of planned behaviour (TPB). However, some authors refer some difficulties related with differences in measures used, since there are no standard measurement instruments for entrepreneurial

intention and its antecedents (ARMITAGE; CONNER, 2001; LIÑÁN; CHEN, 2009).

Also Krueger (2000) considered that demographic variables operate indirectly on intentions, only if they change the decision-maker's attitudes. Consequently, for this author some models did not include these type of variables. For other authors (GNYAWALI; FOGEL, 1994; DAVIDSSON; HENKSON, 2002) these models disregard some combinations of environmental factors relevant in entrepreneurship, such as legal, institutional and socioeconomic conditions, entrepreneurial and business skills, financial or non-financial assistance.

Consequently Liñán (2004), supported on Ajzen's model (1991), proposed an entrepreneurial intentional model in order to understand the influence of social and skills perceptions in determining entrepreneurial intentions. Also according to this author the decision of creating an enterprise depends on three motivational factors: a) the personal preference of the entrepreneur or its attraction towards entrepreneurship (that means the positive or negative personal valuation about being an entrepreneur), b) the perceived behavioural control of the entrepreneur (that means the perceived acceptance or difficulty of becoming an entrepreneur), and 3) the perceived subjective norms of the entrepreneur (that means the perceived social pressure from family, friends or other "relevant people" and their perception concern the approve or not approve of the decision to become an entrepreneur).

According to Ajzen (1985) in Theory of Planned Behavior, behavior intention is not only influenced by traits and subjective norm variables but also by perceived behavior control.

The roles of entrepreneurial attitudes, subjective norms and self-efficacy toward entrepreneurial intention is supported by several author namely Kristiansen and Indarti (2004), Ramayah and Harun (2005), Segal et al. (2005), Zhao et al. (2005), Taormina and Lao (2006), Urban (2006), Shook and Bratianu (2008), Li (2007), Linan (2008), Linan and Santos (2008), Shook and Bratianu (2008), and Pihie and Bagheri (2011).

According to Kristiansen and Indarti (2004), Ramayah and Harun (2005), Segal et al (2005), Zhao et al (2005), Taormina and Lao(2006), Shook and Bratianu (2008), Linan and Santos(2008), self-efficacy has positive influence toward entrepreneurial intention. However, for Taormina and Lao (2006) and

Urban (2006), self-efficacy does not have positive influence toward entrepreneurial intention.

For Kristiansen and Indarti (2004), Ramayah and Harun (2005) and Taormina and Lao (2006) the need for achievement has positive influence toward entrepreneurial intention. Nevertheless, according with Kristiansen and Indarti (2004) and Hmieleski and Corbett (2006) this need does not have significant positive influence toward entrepreneurial intention.

Li (2007) and Linan (2008) concluded that subjective norm has positive influence toward entrepreneurial intention. In opposition, Li (2006) settled that subjective norm does not have significant positive influence toward entrepreneurial intention.

Finally for Kristiansen and Indarti (2004) and Ramayah and Harun (2005) locus of control has significant influence toward entrepreneurial intention.

Over the last years some entrepreneurship researchers have empirically applied the TPB to students' entrepreneurial intentions and confirmed the theory's predictions regarding the impact of attitude, subjective norm, and perceived behavioural control on their intentions (e.g. KOLVEREID, 1996a; KRUEGER; REILLY; CARSRUD, 2000; AUTIO et al., 2001; ENGLE et al., 2010).

## 2.2 Entrepreneurship education and entrepreneurial intentions

Entrepreneurship is understood as a solution to solve graduate unemployment problem, consequently it is a general concern (political, educational, economic and social) that is urgent to find ways to create new entrepreneurs. The main idea is that is crucial to produce more graduate entrepreneur and in order to do that, is important to promote entrepreneurship education, through the development of entrepreneurial activity among students (NABI; LINAN, 2011).

One of the role of entrepreneurship education should be help students to consider starting business as one of career alternatives, and develop positive attitudes towards entrepreneurship (FAYOLLE; GAILLY, 2008).

Research seems to suggest that people that attend to entrepreneurship courses have a higher propensity to start their own businesses at some point in their career (JAAFAR; ABDUL AZIZ, 2008). Also according

Cheng, Chan, and Mahmood (2009) students who have taken a course in entrepreneurship have revealed more interest in become an entrepreneur. Moreover Franke and Luthje (2004) consider that the educational system of universities has to provide an academic environment that may serve as a catalysts for high-technology start-ups. For these author there is an increase tendency and to enhance the role of university graduates as founders of innovative businesses.

In fact, actually, entrepreneurship has become one of the main options for students when they conclude their courses (PETERMAN; KENNEDY, 2003). Being an entrepreneur offers several advantages, such as creating their own business and being able to have more significant financial rewards, self-fulfilment, independence and other desirable outcomes (SEGAL; BORGIA; SCHOENFELD, 2005).

Several researches in entrepreneurship area have focused on students entrepreneurial intentions. Thus, it seems consensual the determinant role that education system plays in entrepreneurial cause (LUNDSTRÖM; STEVENSON, 2002). It has been argued that entrepreneurship education should start as early as possible (BIRDTHISTLE; HYNES; FLEMING, 2007; CHEUNG, 2008). One of the arguments that tries to justify this opinion is related to the fact that the sooner you begin to instil in young people the values and entrepreneurial thinking, more effective will be the results.

The positive role of Higher Education Institutions (HEIs) in the development of entrepreneurial intention and the existence of important factors that influence students' entrepreneurial behaviour are confirmed by a number of studies (FAYOLLE; GAILLY; LASSAS-CLERK, 2005; LÜTHJE; FRANKE, 2003).

These studies help to explain the emergence of entrepreneurial intention among target groups, as well as the stimulation of entrepreneurship education that can influence students' attitudes and intentions towards entrepreneurship.

Concerning entrepreneurial intention also Packham et.al (2010) and Mushtaq et.al (2011) reported that several variables, including education are significantly correlated with intention to create new venture.

According to Wu and Wu (2008) the potential impacts of higher education on students include three aspects: 1) students personal development, including changes in attitudes and values; 2) students changes in their abilities; and 3) possible social

impacts. These aspects are related and coherent with the components of the TPB model. Other authors (LEE; WONG, 2004; LINAN; CHEN, 2009) show that backgrounds in the TPB model are affected by situational factors and demographic variables. Among these factors, educational background is one of the most important factors.

### 2.3. Personal factors and entrepreneurial intentions

Concerning personal traits, some authors argued that optimism (COOPER; WOO; DUNKELBERG, 1988), tenacity (GARTNER; GATEWOOD; SHAVER; 1991), overconfidence (BUSENITZ, 1999) and passion (LOCKE, 1993) may have an impact on entrepreneurial intention. Other authors believe that the weaknesses and strengths of the business are correlated with the weaknesses and strengths of the entrepreneurs (SCHUTJENS; WEVER, 2000). Frese e Rauch (2002) and Brice Jr. (2004) agree with this idea. For these authors the psychological variables are usually linked with the creation of the business and its success probability. According with McClelland (1962) entrepreneurship is related with the need for achievement and entrepreneurs have higher levels of this need. Also Rauch and Frese (2000) and Frese and Rauch (2002) emphasize the importance of this need in the entrepreneur personality.

In addition to personality traits, several additional individual difference variables have been found to predict entrepreneurship. Demographic factors affecting entrepreneurial behaviours are age, ethnicity, education level, gender, labour experience, previous experience in self-employment, etc. (REYNOLDS; STOREY; WESTHEAD, 1994; STOREY, 1994; DELMAR; DAVIDSSON, 2000; GRILO; THURIK, 2005). Boyd (1990) refers the existence of a positively correlated between age and entrepreneurial intention. This can be explained by the fact that young people are less likely to engage in enterprising behaviour (KALANTADIRIS; LABRIANIDIS, 2004). Previous studies have also shown that the probability of an individual becoming an entrepreneur increases with age to a certain point (between 35 and 44 years), and decreases thereafter (BATES, 1995; LÉVESQUE; MINNITI, 2006). Concerning gender, several studies supported the argument that males had significantly higher entrepreneurial intention than females (e.g.,

KOLVEREID, 1996b; MAZZAROL; VOLERY; DOSS; THEIN, 1999; REYNOLDS; CARTER; GARTNER; REENE; COX, 2002) show that adult man in the United States are twice as likely as women to be in the process of starting a new business. Furthermore, marital status has been studied as an antecedent of entrepreneurial intention. A study by Evans and Leighton (1989) shows that married individuals are more likely to get engaged in entrepreneurial activities.

Also Kolvereid (1996b) states that those with prior experience in entrepreneurial activities have higher entrepreneurial intention compared to those with no prior experience. Furthermore, Mazzarol et al., (1999) report that previous working experience was also found to affect entrepreneurial intention. Kolvereid (1996b) also reports that the types of experience also affect entrepreneurial intention. He found that respondents with entrepreneurial experience have higher entrepreneurial intention than those without such experience. Employment status is another characteristic that affect entrepreneurial intention. For Abebe (2012) the social predictors of entrepreneurial career intentions are very important. This author arrived to important results that provide strong empirical support for the social predictors of entrepreneurial career intentions. Finally to Ritsila and Tervo (2002) there is a positive effect of personal unemployment on the intention of an individual to get engaged in entrepreneurial activities.

The literature review presented allowed the formulation of the following hypotheses:

- H1:** The entrepreneurial intentions depends on three motivational factors
  - H1a:** Attitudes towards entrepreneurship are positively related to ESCE students' entrepreneurial intentions.
  - H1b:** Subjective norms are positively related to ESCE students' entrepreneurial intentions
  - H1c:** Perceived behavioural control with respect to entrepreneurship, are positively related to ESCE students' entrepreneurial intentions
- H2:** Male students have higher entrepreneurial intentions.
- H3:** Older students have higher entrepreneurial intentions.
- H4:** Students with labour experience have higher entrepreneurial intentions.
- H5:** Students with self-employment experience have higher entrepreneurial intentions.

### 3 METHODOLOGY

#### 3.1 Sample

The research holds a quantitative method to empirical support for the hypotheses. The empirical analysis has been carried out on a sample of last-year students from College of Business Administration, Polytechnic Institute of Setubal, who attended the subject of entrepreneurship in the academic year 2013-2014. A total of 124 questionnaires were thus collected. After removing questionnaires with missing data, 118 questionnaires were finally taken into analysis.

Student samples are very common in entrepreneurship research (LIÑÁN; CHEN, 2009) especially given evidence that university graduates between 25 and 34 years of age show the highest propensity toward starting up a firm (REYNOLDS; BYGRAVE; AUTIO, 2004).

To collect data, the research used part of the Entrepreneurial Intentions Questionnaire (EIQ) designed by Liñán and Chen (2009) with additional demographic questions (age, gender, course, labor experience and self-employment experience).

#### 3.2 Questionnaire and measures

This research uses the part of the questions developed in Entrepreneurial Intentions Questionnaire (EIQ), designed by Liñán and Chen (2009), to collect the data from the students who attended the subject of entrepreneurship in the second semester of the academic year 2013/2014. The EIQ is an instrument to measure entrepreneurship intentions (EI) and other variables such as attitude towards entrepreneurship (ATE), subjective norm (SN), and perceived behavioural control (PBC).

Reliability and validity of the questionnaire were already verified by Liñán and Chen (2009) to ensure that each pool of questions is related to same subject and each subject corresponds to the required measure.

The questionnaire used in the research is divided into 2 sections. The first section identifies the profile of the respondents. In this section the main characteristics identified are: (1) the gender; (2) the age; (3) the course; (4) the labour experience and (5) the self-employment experience. Section 2 comprehend the questions taken from the EIQ to measure, through a 7 Likert-type scale, the different constructs of the entrepreneurial intention model (ATE, SN, PBC and EI). These items are summarized in Table 2:

**Table 2: Details of the constructs**

Construct	Questions	Number of items
Attitude toward Entrepreneurship	-Being an entrepreneur implies more advantages than disadvantages to me. -A career as entrepreneur is attractive for me. -If I had the opportunity and resources, I'd like to start a firm. -Being an entrepreneur would entail great satisfactions for me. -Among various options, I would rather be an entrepreneur.	5
Subjective Norm	-Your close family. -Your friends. -Your colleagues.	3
Perceived behavioural control	-To start a firm and keep it working would be easy for me. -I am prepared to start a viable firm. -I can control the creation process of a new firm. -I know the necessary practical details to start a firm. -I know how to develop an entrepreneurial project. -If I tried to start a firm, I would have a high probability of succeeding.	6
Entrepreneurial intentions	-I am ready to do anything to be an entrepreneur. -My professional goal is to become an entrepreneur. -I will make every effort to start and run my own firm. -I am determined to create a firm in the future. -I have very seriously thought of starting a firm. -I have the firm intention to start a firm someday.	6

## 4 EMPIRICAL RESULTS

### 4.1 Sample Characterization

As shown in Table 3, 50.8% of students are male and 49.2% are female and most are aged between 20 and 24 years.

The students participating in this study are from Marketing and Distribution and Logistics Management courses (day course and evening classes). Marketing students represents 43.2% of the sample and Distribution and Logistics Management (day course and evening classes) represents 56.8%.

With regard to labour experience, the majority reported having experience (78%), however only 11.9% claimed to have self-employment experience.

Table 3: Students' profile

	Frequency	Percent
<b>Gender</b>		
Male	60	50.8
Female	58	49.2
<b>Age</b>		
20 – 24	76	64.4
25 – 29	14	11.9
30 – 34	9	7.6
35 – 39	12	10.2
≥ 40	7	5.9
<b>Course</b>		
Marketing	51	43.2
Distribution and Logistics Management	40	33.9
Distribution and Logistics Management –Evening classes	27	22.9
<b>Labor experience</b>		
Yes	92	78.0
No	26	22.0
<b>Self-employment experience</b>		
Yes	14	11.9
No	104	88.1

Source: Authors

### 4.2 Results

For the purpose of testing the presented hypothesis, a factor analysis was performed to obtain a latent variable for each construct (ATE, SN, PBC and EI).

To apply the factor analysis method, there should be correlations between the variables. According Pestana and Gageiro (2005) if these correlations are reduced is unlikely that share common factors. Spearman (1904) created the factor analysis, with a general linear modelling technique, which aims to identify a small set of latent variables (factors) that

explain the correlation structure observed in a set of manifest variables (MARÔCO, 2010).

To test the relevance of factor analysis for the data set, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was applied. The average KMO values for the data set, as shown in Table 4, are high, indicating that factor analysis is feasible for data analysis (HAIR et al., 2010). The Bartlett Test of Sphericity is also highly significant, again suggesting that factor analysis can be applied to the data set since it is unlikely that the correlation matrix of the variables is an identity.



**Table 4 – Kaiser-Meyer-Olkin (KMO) Measure and Bartlett’s Test**

Factor	KMO	Bartlett’s Test
PA	0,814	360,981
SN	0,578	100,846
PBC	0,854	467,613
EI	0,906	833,486

Source: Authors

The orthogonal method with Varimax rotation was employed to ensure that the factors extracted are independent and unrelated to each other. The objective of factor analysis is to group variables having large loadings (correlations) for the same factor. A variable with a high communality (loading) of 0.8, for example, indicates a high correlation between that variable and other variables sharing a common factor. Following Kaiser’s criterion only factors having eigenvalues greater than 1 are considered significant in this study (HAIR et al., 2009).

Finally, it’s necessary to identify the internal reliability of each factor, using the Cronbach Alfa Coefficient, which according to Malhotra (2006), must have a value greater than 0.60 to be considered acceptable. According do Table 5, Cronbach’s coefficients alpha, which ranged from 0.73 to 0.91, showed us the internal consistency of this factor analysis.

**Table 5 – Reliability Coefficients**

Factor	Alpha Scores	Number of Items
PA	0.88	5
SN	0.73	3
PBC	0.91	6
EI	0.96	6

Source: Authors

After the factor analysis, in order to establish the relationship between the constructs of entrepreneurial intentions model (Hypothesis 1) and the relationship between entrepreneurial intentions and age, labor experience and self-employment (Hypothesis 3, 4 and 5), it was applied the Pearson Correlation Coefficient. According to HAIR et al. (2010), the Pearson Correlation Coefficient allows to analyze the association strength between two variables.

In order to test the impact of gender on student’s entrepreneurial intentions (Hypothesis 2) it was carried out a t-test. The t-test is used to compare means and is appropriate when the independent variable is dichotomous (PESTANA; GAGEIRO, 2005).

For the purpose of testing the relationships between entrepreneurial intentions and its antecedents (Hypothesis1), we used a correlation analysis, as summarized in Table 6.

**Table 6 – Bivariate Pearson correlation for all variables**

Variable		ATE	SN	PBC
EI	Pearson Correlation	,731**	,187*	,728**
	Sig. (2-tailed)	,000	,043	,000
	N	118	118	118

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Source: Authors

The results revealed that students' entrepreneurial intention was significantly influenced by attitudes toward entrepreneurship and perceived behavioural control. On the other hand, subjective norm has a lower correlation with entrepreneurial intention. This is not a surprising finding, once several studies demonstrate that subjective norms often fail to predict intentions (ARMITAGE; CONNER, 2001). Therefore, Hypothesis 1 (a,b,c) was accepted with a significance level of  $p < 0.05$ .

This finding is consistent with the findings of previous studies referred in literature review (AJZEN, 1991; KOLVEREID 1996a; KOLVEREID, 1996b; TKACHEV; KOLVEREID, 1999; KRUEGER; REILLY;

CARSrud, 2000; LIÑÁN, 2004; FAYOLLE; GAILLY, 2005; VECIANA; APONTE; URBANO 2005; FAYOLLE; DeGEORGE, 2006; KRUEGER, 2007; ENGLE et al., 2010).

To assess the impacts of gender on the students' entrepreneurial intentions, we conducted a t-test. Table 7 summarizes the results of these t-test. The results showed that male students have higher entrepreneurial intentions, confirming Hypotheses 2. Also this finding is corroborated by some studies referred in literature review (KOLVEREID, 1996b; MAZZAROL; VOLERY; DOSS; THEIN, 1999; REYNOLDS et al., 2002).

**Table 7 – Analysis of Independent Samples T-test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EI	Equal variances assumed	7,328	,008	,368	116	,714	,0679807	,1848256	-,2980897	,4340512
	Equal variances not assumed			,366	109,205	,715	,0679807	,1855096	-,2996855	,4356470

Source: Authors

In order to test Hypothesis 3, 4 and 5, we used a correlation analysis (Table 8). The results revealed that age was significantly related to entrepreneurial intentions, once older students reveal a higher entrepreneurial intention, confirming Hypotheses 3. This finding is consistent with the findings of prior studies (e.g. BOYD, 1990; BATES, 1995; LÉVESQUE; MINNITI, 2006).

On the other hand, labour and self-employment experience are negatively correlated with entrepreneurial intention. These results do not confirm studies developed by Kolvereid (1996b) and Mazzarol et al. (1999). Therefore, Hypothesis 4 and 5 were not supported.

**Table 8 – Bivariate Pearson correlation between student's entrepreneurial intentions and age, labor experience and self-employment experience**

		Age	Labor Experience	Self-Employment Experience	Entrepreneurial Intention
Age	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	118			

<b>Labor Experience</b>	Pearson Correlation	-,332**	1		
	Sig. (2-tailed)	,000			
	N	118	118		
<b>Self-Employment Experience</b>	Pearson Correlation	-,143	,132	1	
	Sig. (2-tailed)	,121	,155		
	N	118	118	118	
<b>Entrepreneurial Intention</b>	Pearson Correlation	,289**	-,047	-,075	1
	Sig. (2-tailed)	,002	,610	,419	
	N	118	118	118	118

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Source: Authors

Bellows (Table 9) it’s possible to see the resume of the confirmation or not confirmation of the hypotheses previously formulated.

**Table 9 – Confirmation of the hypotheses**

<b>Hypotheses</b>	<b>Confirmation</b>
H1: The entrepreneurial intentions depends on three motivational factors	Yes
H1a: Attitude towards entrepreneurship are positively related to ESCE students’ entrepreneurial intentions.	Yes
H1b: Subjective norms are positively related to ESCE students’ entrepreneurial intentions	Yes
H1c: Perceived behavioural control with respect to entrepreneurship, are positively related to ESCE students’ entrepreneurial intentions	Yes
H2: Male students will have higher entrepreneurial intentions.	Yes
H3: Older students will have higher entrepreneurial intentions.	Yes
H4: Students with labor experience will have higher entrepreneurial intentions.	No
H5: Students with self-employment experience will have higher entrepreneurial intentions.	No

Source: Authors

## 5 DISCUSSION OF RESULTS

Using the EIQ, designed by Liñán and Chen (2009), this study allowed the confirmation of the findings of previous studies that have demonstrated that entrepreneurial intention is predicted by attitudes toward entrepreneurship, subjective norms, and perceived behavioural control (KRISTIANSEN; INDARTI, 2004; RAMAYAH; HARUN, 2005; SEGAL et al., 2005; ZHAO et al., 2005; TAORMINA; LAO, 2006; URBAN, 2006; SHOOK; BRATIANU, 2008; LI, 2007; LINAN, 2008; LINAN; SANTOS, 2008; SHOOK; BRATIANU, 2008; PIHIE; BAGHERI, 2011). The results

achieved contribute to reinforce the application of the theory of planned behaviour (AJZEN, 1991) and confirm the influence of cultural and social environment in human behaviour.

Conversely, subjective norm, that means the perceived social pressure from family, friends or other “relevant people” and their perception concerning the approval or disapproval of the decision to become an entrepreneur explains a small fraction. As we stressed before, this is not a surprising finding, once the some literature shows that subjective norm is the component that more often fails to predict behavioural intentions (ARMITAGE; CONNER, 2001; LI, 2006).

The findings also showed that male students have higher entrepreneurial intention than females, according with the findings of prior studies (KOLVEREID, 1996b; MAZZAROL; VOLERY; DOSS; THEIN, 1999; REYNOLDS et al., 2002). Furthermore, the results revealed that age was significantly related to entrepreneurial intentions and older students have higher entrepreneurial intention than younger students. This can be explained by the fact that younger students are less likely to engage in enterprising behaviour (KALANTADIRIS; LABRIANIDIS, 2004). This finding is also corroborated by several studies (e.g. BOYD, 1990; BATES, 1995; LÉVESQUE; MINNITI, 2006).

On the other hand, no support was found for the effects of the labour and self-employment experience on entrepreneurial intentions. Although 78% of respondents have work experience, it seems that this fact does not contribute to a higher entrepreneurial intention. This may be related to some of these respondents have age over 24 years (35.6%) and have never had a formal education promoting entrepreneurial skills. Also the reduced percentage of respondents that have own experience of employment (11.9%) and the high percentage of respondent aged up to 24 years can justify the lack of correlation between the variables work experience and self-employment and entrepreneurial intention.

## 6 CONCLUSIONS

This study provides a literature review concerning the phenomenon of the entrepreneurial intentions with reference to several models. It also describes the increasing importance of entrepreneurship as an important career option for students highlighting some of the advantages associated to this option.

Several researches in entrepreneurship area have focused on students intentions to become entrepreneurs, and the intent is the key word for understanding the students' entrepreneurial spirit. Thus, it seems consensual the determinant role that education system plays in entrepreneurial cause.

In fact, the study allowed understanding that attitudes toward entrepreneurship and perceived behavioural control of students from ESCE that means their positive or negative personal valuation about being an entrepreneur and their perceived acceptance or difficulty of becoming an

entrepreneur explain a substantial fraction of the variance in these motivational perceptions. These results can be related with the good results achieved of entrepreneurship discipline. This discipline aims to develop the entrepreneurial spirit, increase the entrepreneurial intention, skills and competences. Also during the semester discussion and reflection about cultural, social, economic and financial barriers are developed, contributing to a higher awareness of the difficulties as well as to the interesting possibilities associated to become an entrepreneur.

A limitation can be pointed, namely, the need of some cross-cultural studies in order to considerer the effect of different cultures and values on the entrepreneurial intention to be better understood. However studies are in development to include students from other universities.

It is also important to develop more adequate reliable and valid instruments to analyse entrepreneurial perceptions and intentions. Finally is important that these measurement instruments can be standardized allowing comparable research.

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