

IMPACT OF ENTREPRENEURIAL SELF-EFFICACY ON THE INTENTION TO CREATE A NEW BUSINESS: A CROSS-SECTIONAL STUDY IN PORTUGUESE HIGHER EDUCATION STUDENTS

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Abstract

Individuals with a higher level of self-efficacy have more entrepreneurial intention to settle on their own, creating and managing their own career. This study aimed to know the level of entrepreneurial self-efficacy of higher education students and to verify the impact of entrepreneurial self-efficacy on entrepreneurial intention or creation of new businesses. To achieve these objectives, a cross-sectional, quantitative and analytical study was carried out based on a probabilistic sample of 2107 students from a Portuguese higher education institution located in the Northern Interior of Portugal. The margin of error was 1.84%. To collect the data, a questionnaire was directly applied to the students, in the classroom in the presence of the teacher, from October 2018 to January 2019. Students' participation was voluntary and the anonymity and data confidentiality were guaranteed to all participants. The questionnaire had three sections. The first section included sociodemographic variables (gender, age and nationality) and academic variables (scientific area of the course, course degree, year attended, attendance mode and course with or without integrated internship). The second section included the entrepreneurial self-efficacy scale [1]. This scale consists of 23 items related to the individuals' ability to perform tasks, and the answers were coded by a Likert scale ranging from 1 (totally incapable) to 7 (fully capable). Finally, the third section comprised a scale consisting of four items that aimed to evaluate the entrepreneurial intention of the students [2]. The answers were coded using a Likert scale ranging from 1 (a little) to 7 (a lot). A linear regression model was estimated in order to verify if Entrepreneurial self-efficacy (X) is a predictor of Entrepreneurial intention (Y). Students were aged between 17 and 52 years old and attended a degree course within four different scientific areas, existent in the institution, namely Education (60.5%), Technologies and Management (21.2%), Agriculture (6.3%) and Health (12.0%). The majority was female (54.0%), Portuguese (82.9%) and attended a graduation degree (88.8%) in an ordinary full-time attendance mode (96.4%). The students registered a moderate level of entrepreneurial self-efficacy. In fact, it was observed that 20.4% of the students registered a high level of entrepreneurial self-efficacy; 64.5% showed a moderate level, and, the remaining 15.1% revealed a low level of entrepreneurial self-efficacy. The estimated regression model was statistically significant. It was found that Entrepreneurial self-efficacy is a predictor of Entrepreneurial intention (creation of new businesses). Moreover, the value of Adjusted R² shows that this predictor account for 43.9% of Entrepreneurial intention. Entrepreneurial self-efficacy contributes to the generation of ideas and the creation of new businesses with success. Therefore, higher education institutions should be able to improve students' entrepreneurial skills.

Keywords: Entrepreneurial self-efficacy, Businesses, Students, Higher education, Professional career.

1 INTRODUCTION

Over the past decades, the themes of entrepreneurial self-efficacy and entrepreneurial intention have received special attention from researchers, educators and decision makers [3]. The relentless pursuit of empowering individuals with entrepreneurial and innovative skills enables them to more easily respond to challenges and achieve success in today's job market, whether within organizations or creating their own job. Entrepreneurial thinking and behavior can help generations of individuals to be responsible and successful generators of their own career by enabling them to progress and adapt to social changes [4,5]. Moreover, entrepreneurship is considered the major contributor to the dynamization and growth of economies [6,7]. Entrepreneurial self-efficacy, besides having a positive impact on entrepreneurial intention, is one of the most relevant factors in the intention to create a new business [8,9]. The entrepreneurial self-efficacy is the belief of an individual in his personal capacity to create a new business [10,11]. It is the self-perception of the level of the individual's abilities to successfully play the various roles and tasks of entrepreneurship [1,12,13].

Entrepreneurial intention can be defined as the intention to initiate, engage in entrepreneurial behaviors and undertake entrepreneurial activities, which may be affected by various factors such as needs, values, wills and beliefs [14,15]. Individuals with high self-efficacy in performing a task try harder and are more likely to continue and persist compared to those with low self-efficacy [12,16]. Individuals who demonstrate high entrepreneurial self-efficacy and entrepreneurial intention, early in their professional career, are more likely to develop entrepreneurial activity in the future [17].

Several studies showed that the entrepreneurial self-efficacy of higher education students was statistically significant and positively correlated with entrepreneurial intention [4,5,18-24]. Higher education students with high entrepreneurial self-efficacy are confident when facing challenges, pay more attention to relevant information, take the initiative to acquire knowledge, actively explore the path of entrepreneurship, participate in entrepreneurial practices and enhance their entrepreneurial skills and intention [5]. On the other hand, higher education students with high entrepreneurial self-efficacy are confident, believe they have sufficient ability to handle challenging, innovative and uncertain activities, are more likely to adopt a correct attitude towards their career, have greater control and responsibility in developing their own career, and better adapting to possible career changes [4]. In a given context, individuals with high entrepreneurial self-efficacy feel that the world is full of opportunities compared to those with low self-efficacy who view the world from a risk and cost perspective [1]. Faced with difficulties, risks and uncertainties, individuals with high entrepreneurial self-efficacy make better use of successful opportunities, can more accurately predict the future and have more energy to invest in entrepreneurial activities [10]. Therefore, this study aimed to know the level of entrepreneurial self-efficacy of higher education students and to verify the impact of entrepreneurial self-efficacy on entrepreneurial intention or creation of new businesses.

2 METHODOLOGY

To achieve these objectives an observational, quantitative and analytical study was carried out. This study used a cross-sectional survey method which involved one-time observation of the variables. The independent variable was entrepreneurial self-efficacy while the dependent variable was entrepreneurial intention.

To collect the data, a questionnaire was directly applied to the students from a Portuguese higher education institution located in the Northern Interior of Portugal. The administration of the questionnaire occurred in the classroom in the presence of the teacher, from October 2018 to January 2019.

Students' participation in the study was voluntary. The anonymity and data confidentiality were guaranteed to all participants.

2.1 Participants

The study was based on a probabilistic sample of 2107 students among a total of 8200 students. The margin of error was 1.84%. Students were aged between 17 and 52 years old and attended a degree course within four different scientific areas, existent in the institution, namely Education (60.4%), Technologies and Management (21.2%), Agriculture (6.3%) and Health (12.0%). The majority was female (54.0%), Portuguese (82.9%) and attended a graduation degree (88.8%) in an ordinary full-time attendance mode (96.4%) (Table 1).

Table 1. Sociodemographic and academic characteristics (n = 2107).

Variables	Group	n	%
Gender	Female	1138	54.0
	Male	961	45.6
	Missing	8	0.4
Age	17-20 years old	1218	57.8
	>20 years old	883	41.9
Nationality	Portuguese	1747	82.9
	Other	360	17.1

Scientific area	Education Sciences	1272	60.4
	Agriculture Sciences	132	6.3
	Technological Sciences and Management	446	21.2
	Health Sciences	253	12.0
	Missing	4	0.2
Type of degree	Professional Higher Technological	164	7.9
	Graduation	1871	88.8
	Post-graduation	12	0.6
	Master	56	2.7
Year attended	1 st year	894	42.4
	2 nd year	722	34.3
	3 rd year	445	21.1
	4 th year	41	1.9
	Erasmus	5	1.2
Degree with integrated internship	Yes	1711	81.2
	No	366	17.4
	Missing	30	1.4
Attendance mode	Ordinary	2027	96.2
	Student worker	80	3.8

The participants age ranged between 17 and 52 years old. The average age was 20.56, and the standard deviation of the age was 2.472.

2.2 Instrument

The questionnaire had three sections. The first section included sociodemographic variables (gender, age and nationality) and academic variables (scientific area of the degree, type of degree, year attended, attendance mode and course with or without integrated internship). The second section included the entrepreneurial self-efficacy scale [1]. This scale consists of 23 items related to the individuals' ability to perform tasks, and the answers coded by a Likert scale ranged from 1 (totally incapable) to 7 (fully capable). Finally, the third section included four items that aimed to evaluate the entrepreneurial intention of the students [2]. The answers were coded using a Likert scale ranging from 1 (a little) to 7 (a lot).

2.3 Data analysis

The statistical data treatment was conducted using the IBM SPSS version 25.0 software. Initially, the data analysis involved the use of descriptive statistics, namely the calculation of absolute and relative frequencies, as well as the calculation of central tendency measures (mean) and dispersion measures (maximum, minimum and standard deviation) [25,26].

Subsequently, an exploratory factor analysis was conducted using the principal component method with varimax rotation in order to evaluate the factorial structure of the entrepreneurial intention and entrepreneurial self-efficacy scales. In this context, Kaiser-Meyer-Olkin (KMO) test was used to verify the sampling adequacy of the observed values. It is a statistic that indicates the proportion of variance in the variables that might be caused by underlying factors. High values (close to 1) indicate that a factor analysis may be useful [27]. Bartlett's sphericity test was used to test the hypothesis that the correlation matrix is an identity matrix, which indicates variables are not correlated and therefore are inappropriate for structure detection [27].

Cronbach's Alpha coefficient was calculated to analyse the internal consistency of the entrepreneurial intention and entrepreneurial self-efficacy scales. The values of Cronbach's Alpha coefficient higher than 0.9 mean that the measurement tool used has good internal consistency [25,27].

Finally, a linear regression model was estimated in order to determine the impact of entrepreneurial self-efficacy on the intention to create a new business [26]. The significance level was 0.01 to which corresponds a degree of confidence (1- α) of 99%.

3 RESULTS

Validity and reliability analyses were done. Table 2 shows that, for the four items constituting the dependent variable “entrepreneurial intention”, the KMO registered a value of 0.828. The consistency of the entrepreneurial intention scale was good (Alpha Cronbach = 0.906). The level of reliability showed that the items considered in this study are adequate to measure entrepreneurial intention. Additionally, Bartlett's sphericity test suggests that the correlation matrix is statistically different from the identity matrix (p-value = 0.000).

Table 2. Results of exploratory factor analysis by principal component method and varimax rotation: loading factor, mean and standard deviation for each item of the entrepreneurial intention scale.

<i>Items</i>	<i>Loading Factor</i>	<i>Mean</i>	<i>Standard deviation</i>
I consider myself able to start a business	0.893	3.64	0.710
I want to start my own company	0.902	3.77	0.769
I have the ability to work on my own	0.871	4.06	0.633
I have a concrete idea of the business I want to create	0.868	3.76	0.774

KMO = 0.828; Bartlett's sphericity test (p-value) = 0.000; One factor; Eigenvalue = 3.230; Variance explained = 78.081; Alpha Cronbach = 0.906; n = 4

The Table 3 shows the twenty-three items constituting the independent variable “entrepreneurial self-efficacy”. The KMO recorded a value of 0.976. Furthermore, Bartlett's sphericity test suggests that the correlation matrix is statistically different from the identity matrix (p-value = 0.000). The consistency was 0.972. The level of reliability showed that the items considered in this study are adequate to measure entrepreneurial self-efficacy.

Table 3. Results of exploratory factor analysis by principal component method and varimax rotation: loading factor, mean and standard deviation for each item of the entrepreneurial self-efficacy scale.

<i>Items</i>	<i>Loading Factor</i>	<i>Mean</i>	<i>Standard deviation</i>
Working effectively in conflict situations	0.711	4.34	1.453
Developing and maintaining favorable relationships with potential investors	0.792	4.48	1.382
Recognizing new opportunities in the market for new products and services	0.802	4.48	1.351
Recruiting and training key employees	0.781	4.47	1.371
Establishing the vision and values of the organization	0.794	4.52	1.374
Discovering new ways to improve existing products	0.782	4.44	1.394
Developing relationships with key people to raise capital	0.777	4.46	1.387
Identifying new areas of potential growth	0.799	4.42	1.366
Developing appropriate staffing planning to fill key company positions	0.797	4.43	1.349
Inspiring others to accept the vision and values of the organization	0.786	4.49	1.363
Tolerating unexpected changes in business conditions	0.775	4.42	1.372
Designing products that solve common problems	0.784	4.44	1.360
Identifying potential funding resources	0.784	4.48	1.350
Creating a work environment that allows people to be their own boss	0.773	4.53	1.370
Persisting against adversity	0.803	4.56	1.381
Create products that meet customer needs	0.807	4.58	1.367
Developing quick action for opportunities	0.804	4.53	1.369
Developing a work environment that encourages people to try new things	0.801	4.56	1.358
Using old business concepts and ideas in a new way	0.798	4.50	1.380
Verifying if the business is going well	0.804	4.62	1.393
Motivating people to take initiative and responsibility for their ideas and decisions regardless of the results	0.790	4.60	1.364
Identifying and building management teams	0.776	4.46	1.349
Creating partnerships or alliances with other partners	0.780	4.57	1.392

KMO = 0.976; Bartlett's sphericity test (p-value) = 0.000; One factor; Eigenvalue = 14.255; Variance explained = 61.979; Alpha Cronbach = 0.972; n = 23

Fig. 1 shows the sample distribution by level of entrepreneurial self-efficacy and entrepreneurial intention. It was observed that 20.4% of the students registered a high level of entrepreneurial self-efficacy; 15.1% revealed a low level; and the remaining 64.5% showed a moderate level. On the other hand, it was observed that 17.6% of the students registered a high level of entrepreneurial intention; 43.0% revealed a low level; and the remaining 34.9% showed a moderate level.

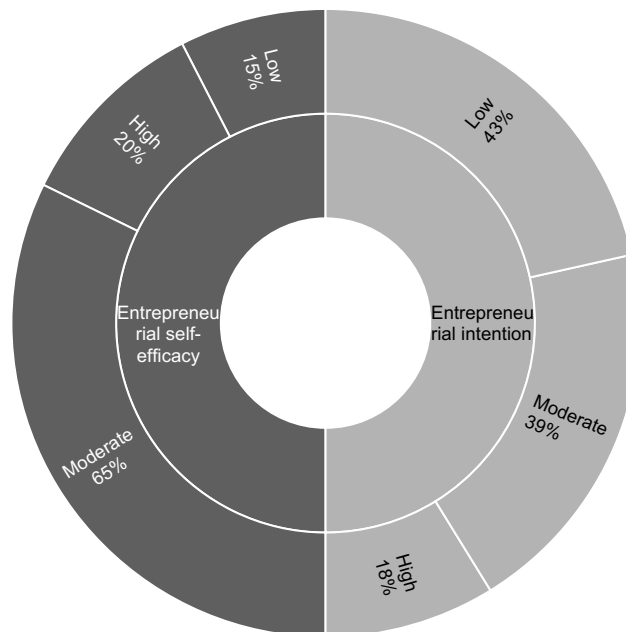


Figure 1. Distribution by level of entrepreneurial self-efficacy and entrepreneurial intention.

As shown in Table 4, entrepreneurial intention presented a correlation statistically significant, positive and moderate with entrepreneurial self-efficacy ($R = 0.663$; $p\text{-value} = 0.000$). A positive correlation means that as entrepreneurial self-efficacy increases, the entrepreneurial intention (creation of new businesses) increases as well.

Table 4. Correlation between entrepreneurial self-efficacy and entrepreneurial intention

Variables	Statistic	Entrepreneurial intention	Entrepreneurial self-efficacy
Entrepreneurial intention	R	1	0.663
	p-value	-	0.000*
Entrepreneurial self-efficacy	R	0.663	1
	p-value	0.000*	-

* The correlation is significant at the significance level of 1% (bilateral).

The estimated linear regression model is presented in Table 5. As shown, the model is statistically significant with a value of $F = 1646.33$ and $p\text{-value} = 0.000 < 0.01$. Also, it was found that entrepreneurial self-efficacy ($t = -3.658$; $p\text{-value} = 0.000$) is a predictor of entrepreneurial intention. In other words, the entrepreneurial self-efficacy had a positive impact on the intention to create a new business. Moreover, the value of adjusted R^2 shows that this predictor account for 43.9% of entrepreneurial intention.

Table 5. Linear regression model.

Variable	Non standardized coefficients	Standardized coefficients		t	p-value
	β	Standardized error	β		
Constant	-0.389	0.106	-	-3.658	0.000*
Entrepreneurial self-efficacy (X)	0.041	0.001	0.663	40.575	0.000*

N = 2107; $R^2_{\text{Adjusted}} = 0.439$; F = 1646.33; p-value = 0.000 < 0.01

* Statistically significant at the significance level of 1%.

4 CONCLUSION

This study aimed to know the level of entrepreneurial self-efficacy of higher education students and to verify the impact of entrepreneurial self-efficacy on the intention to create new businesses. To achieve these objectives, a cross-sectional, quantitative and analytical study was carried out based on a probabilistic sample of 2107 students from a Portuguese higher education institution located in the Northern Interior of Portugal. Students were aged between 17 and 52 years old and attended a degree within four different scientific areas, namely Education (60.5%), Technologies and Management (21.2%), Agriculture (6.3%) and Health (12.0%). The majority was female (54.0%), Portuguese (82.9%) and attended a graduation degree (88.8%) in an ordinary full-time attendance mode (96.4%). The students registered a moderate level of entrepreneurial self-efficacy. In fact, it was observed that 20.4% of the students registered a high level of entrepreneurial self-efficacy; 64.5% showed a moderate level, and, the remaining 15.1% revealed a low level of entrepreneurial self-efficacy. The estimated regression model was statistically significant. It was found that Entrepreneurial self-efficacy is a predictor of Entrepreneurial intention (creation of new businesses). Moreover, the value of Adjusted R^2 shows that this predictor account for 43.9% of Entrepreneurial intention.

The literature reports that entrepreneurial self-efficacy, besides having a positive impact on entrepreneurial intention, is one of the most relevant factors influencing the intention to create a new business. Entrepreneurial self-efficacy contributes to the generation of ideas and the creation of new businesses with success. Therefore, higher education institutions should be able to improve students' entrepreneurial skills.

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