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CAN UNIVERSITIES SUPPORT THE ENTREPRENEURIAL INTENTION? PUTTING ENTREPRENEURIAL EDUCATION INTO PRACTICE

Renato Passaro, Department of Engineering, University of Naples Parthenope, Italy
Ivana Quinto, Department of Engineering, University of Naples Federico II, Italy
Antonio Thomas, Department of Engineering, University of Naples Parthenope, Italy

ABSTRACT

Within the context of university's third mission, the impact of entrepreneurial education (EE) on human capital and entrepreneurial intention (EI) has been extensively studied. However, the literature reveals that some research gaps exist. In this view, the paper investigates whether and how EE provided by a university business plan competition (BPC) affects the development of a definite set of knowledge and skills responsible for the emergence of EI among academics.

A theoretical model has been proposed to analyse the relationships among EE, entrepreneurship-related human capital (ErHC) and EI. Moreover, the effect of perception of the external environment has been considered. The model is tested by a structural equation modelling with empirical data from a population of academics of seven universities located in an Italian region.

Results reveal that EE influences both ErHC and EI. Moreover, a virtuous reinforcing circle between EI and ErHC exists which encourages individuals to make an entrepreneurial choice. Finally, a positive evaluation of the BPC context enhances the learning process and EI. Hence, entrepreneurial universities confirm to play a relevant role in the local economic development, even though the first mission of teaching remains crucial.

Keywords: Entrepreneurship Education, Entrepreneurial Intention, Business Plan Competition Entrepreneurship-Related Human Capital.

INTRODUCTION

Knowledge and innovation are the two fundamental pillars of the current knowledge-based economy. In this view, the university system is considered a key contributor by means of the education and research activities. In the last two decades, public authorities have increasingly entrusted the universities with the task of ensuring a more direct involvement into territorial socio-economic development, also by developing strict relationships with local stakeholders in the context of the so-called third mission (Etzkowitz & Leydesdorff, 2000; Laredo, 2007).

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The purpose of the third mission is threefold (Bercovitz & Feldmann, 2006). Firstly, to valorize the efforts sustained by universities in their standard activities according to viable commercial paths, namely in an entrepreneurial manner; secondly, to make universities closer to the needs of local environment, and thirdly to accelerate the spreading of new technologies and knowledge through interactions with external partners, such as research centers, public bodies, companies and non-profit organizations. This transferred knowledge favors the territorial cross-fertilization process, which, in turns reinforces the knowledge asset of the university system itself (Carayannis & Campbell, 2012; Haiter et al., 2018).

The most widespread way to transfer knowledge to the external context still is through the high-specialized education and degree programs. When this knowledge is explicitly related to entrepreneurial aspects, it is termed as entrepreneurial education (henceforth EE). In this study, EE is meant as resulting from university courses, workshops, training programs, extra curricula offering, and university entrepreneurial initiatives able to provide specific skills and knowledge needed for individuals to successfully face managerial and financial troubles (Fayolle & Gailly, 2015; Haiter et al., 2018). In the last decades, several researchers have analyzed whether and how EE initiatives were able to enhance those components of individual human capital responsible of the entrepreneurial outcomes: the entrepreneurship related human capital (henceforth ErHC) (Peña, 2002; Unger et al., 2011; Dimov, 2017). This is a key aspect for addressing entrepreneurial policy initiatives. Numerous studies have argued that the entrepreneurial intention (henceforth EI) is strengthened by the possession of high levels of EE (Sánchez, 2013; Guerrero et al., 2014; Bonesso et al., 2018), as well as by a positive external environment perception (henceforth EEP) (Liñán & Chen, 2009; Kibler, 2013). Nevertheless, there is still little evidence on these relationships, and sometime the research findings are not so univocal (Fayolle & Gailly, 2015; Bhatt, 2021).

With this in mind, the paper aims to investigate whether and how EE and EEP affect the development of ErHC responsible for the EI emergence among academics. A sample of participants in a university business plan competition within as part of the third mission was analyzed.

This issue has a certain practical and scientific relevance in the light of the continuous investments in EE aimed to improving ErHC, the new role that universities are expected to carry out coherently with the third mission approach, the potential cutting-edge businesses launched by academics in order to valorize the outcome of their research and education process efforts, and the necessity to improve the external environment. In this view, consistently with Salamzadeh (2020), this paper intends both to investigate a new relationship among different concepts, and to examine a previously tested theory in a new context, as well as to consider assumptions or axioms in previously studied models.

The paper proceeds as follows. After this introduction, the next section presents the theoretical framework. The third Section describes the hypotheses to be tested, while the fourth section explains the method. The fifth section reports the main findings and the sixth section the discussion. Concluding remarks, implications and limitations are in the last section.

THIRD MISSION AND BUSINESS PLAN COMPETITIONS

A seminal article by Etzkowitz & Leydesdorff (2000) about the triple helix model is still today the cornerstone on which the concept of Third mission is based, despite some successive enrichments and contributions (e.g., Carayannis & Campbell, 2012). Third mission can be

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broadly understood as a further aim that universities have to realize in addition to the educational (first mission) and research activities (second mission). It includes a wide range of initiatives focused on the generation, use, application and exploitation of knowledge and other university capabilities outside the academic environments. Specifically, third mission includes the provision of entrepreneurial education (e.g., Rae, 2010), the transfer of technology from academia to industry (e.g., Laredo 2007), the creation of frame-breaking basic knowledge (e.g., Bercovitz & Feldmann 2008), or academic spin-offs (e.g., O'Shea et al., 2008).

A newest path of third mission is the provision of supports aimed at spurring scientists, often jointly with students, to test the commercial validity of the output of their research activities. This support normally consists in entrepreneurial education, specialized technical skills, logistic facilities, technology transfer offices, or the search for financial and industrial partners. Starting-up support can be considered an intermediate tool among soft (e.g., grants or consulting) and hard measures (e.g., provision of financial contributions or tax incentives) which tries to overcome, or to compensate the lacking of entrepreneurial experiences, track records, partnership, and the limited capacity of would-be academic entrepreneurs to acquire key resources.

Specialized literature (e.g., Schwarzt et al., 2013; Passaro et al., 2018; 2020) emphasizes the importance, for an economic context, of encouraging the diffusion of new ventures of academic origin, like spin-offs and start-ups. Similar to others new-technology-based firms, academic spin-offs and start-ups spread entrepreneurial culture in an ecosystem, and favor the transition towards innovation-based industries (Kibler, 2013; Passaro et al., 2017; 2019).

Universities focus on activities able to improve regional and/or national performances, as well as their financial gains (Etzkowitz et al., 2000) (Etzkowitz et al., 2000) have been defined entrepreneurial universities. Among the activities falling within the scopes of entrepreneurial universities, an initiative that is gaining a great attention and a wide diffusion is the planning of the so-called business plan or start-up competitions (henceforth BPC).

These competitions may be qualified as a selective instrument of entrepreneurship policy that aspire to screen feasible innovative business ideas, and to encourage their starting-up, mainly through different measures, namely financial, monetary or fiscal incentives (Schwartz et al., 2013). These competitions also favor the interaction among participants and different stakeholders (e.g., investors, consultants, partners, incubators, customers), allowing to accelerate the diffusion of knowledge (among people) and innovation (among enterprises) (Lockett & Wright, 2005; Passaro et al., 2017b). Participants can improve their business plans by attending different educational activities where they could collect advices and suggestions of experts, and gain technological or managerial competences (Etzkowitz, 2017).

The Entrepreneurial Intention

One of the major challenges for researchers is to understand how and why individuals choose to embark upon an entrepreneurial path. Accordingly, a growing number of scholars consider important to analyze the presence of EI among would-be entrepreneurs; that is the cognitive state temporally and causally prior to action to pursue a career of self-employment rather than being organizationally employed (Krueger et al., 2000). The emergence of intention is assumed as one of the strongest antecedents of the business creation (Liñán & Chen, 2009).

The concept of intention was born in the psychological field, when Ajzen (1991) introduced the Theory of Planned Behavior (TPB). The application of this theory in

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entrepreneurship field has been one of the more attractive research streams over the last 20 years, proven to be a fundamental, enduring, and frequently used construct in research on entrepreneurship, and is likely to remain an important construct in research relating to enterprising individual (Lortie & Castogiovanni, 2015; Krueger, 2017).

Entrepreneurial universities can play a relevant role also into favoring the emergence of EI thanks to the provision of EE (Guerrero et al., 2014; Maresch et al., 2016; Secundo et al., 2017). However, although a plethora of researches verified the presence of EI among university students and, less frequently, among scientists, to the best of our knowledge very few articles consider the presence of EI among students and scientists who, jointly, specifically participate in a BPC (Passaro et al., 2017; 2019). In this view, this paper investigates the effect of EE on the emergence of EI.

The Entrepreneurship-Related Human Capital

This study supports common thinking on human capital meant as a resource that is created from the emergence of individuals' knowledge, skills, abilities, competences or other subjective characteristics (Peña, 2002; Ployhart & Moliterno, 2011; Dimov, 2017). When these features are related to the entrepreneurship, they can be properly named entrepreneurship-related human capital (ErHC) (Martin et al., 2013). According to this literature stream, ErHC plays a distinct role in supporting new entrepreneurial processes. The wider the ErHC, the greater the probability that aspiring entrepreneurs can successfully face managerial and financial troubles.

Individuals' ErHC can be improved by universities by mean of EE. This education is supposed to enrich and enforce the individuals' ability to discover, exploit and manage innovative business opportunities. Furthermore, EE supports the positive perceptions of entrepreneurship and the propensity and feasibility to become an entrepreneur. Moreover, it is supposed to improve the innate attitudes and personal traits towards the entrepreneurial choice, such as self-efficacy, locus of control, need of achievement, dealing with ambiguity or risk taking (e.g., Liñán et al., 2011; Nabi et al., 2017). Nevertheless, it is difficult to understand to what extent a high individual ErHC is consequence of specific investments in the knowledge diffusion and learning, or of innate subjective capacities (e.g., Unger et al., 2011).

A meta-analysis of Martin et al.,'s over 79 investigations confirms that most studies support a positive relationship among university EE and ErHC assets, albeit "*some (studies) have shown statistically nonexistent or even negative relationship*" (Martin et al., 2013). Hence, universities can be considered a key actor into the providing of a specific entrepreneurial learning, "*The continuos process that support individuals to develop the necessary knowledge for effectively starting up and managing new ventures*" (Politis, 2005). From this we derive that another hypothesis to be tested concerns the effect of EE on the ErHC, and between this last and the intention (see section 3). Furthermore, it is conceivable that, among BPC participants, a virtuous feedback process between EI and ErHC could exist, since a higher EI encourages the individuals to reinforce their background also by mean of informal learning processes (by exploring, by imitation, by networking, etc.).

The External Environment Perception

Seminal articles on EI (Liñán & Chen, 2009; Liñán et al., 2011; Kibler, 2013) prove that the emergence of intention is influenced by the perception of how an external environment is economically conducive to the creation of new businesses. This means that a positive external

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environment perception (henceforth EEP) has a relevant impact on the actual decision to engage the entrepreneurial choice: "*perception of the political-economic environment exerts more proximal influence on interest in starting a business than actual conditions*" (Begley et al., 2005). The influence could be exerted on the individuals' decision to acquire and/or improve the previous background of specific skills, competences and knowledge encompassed within the human capital, and nurtured by EE. This influence also could affect the EI itself (Liñán & Chen, 2009; Sánchez, 2013).

This thesis suggests to explicitly considering the individual EEP showed by the considered participants in a BPC, with reference to both the ErHC, and the EI.

RESEARCH HYPOTHESES

To verify whether and how EE and EEP affect the emergence of ErHC and EI, a sample of academics of seven universities of an Italian region (Campania) participating at an academic BPC were considered.

We expect that EE and EEP support both the development of a specific set of knowledge and skills, and the emergence of a propensity towards the entrepreneurial choice. EE is supposed to provide knowledge, tools and mindsets for managing a business and facing possible potential challenges, opportunities and threats. EEP can be intended as a positive enabler for the entrepreneurial choice.

The majority of researches found a positive correlation between EE and ErHC (Guerrero et al., 2014; Westhead & Solesvik, 2016; Bonesso et al., 2018). Others surveys found a negative (Honig & Samulsson, 2008; Oosterbeek et al., 2010; Fayolle & Gailly, 2015) or null correlation (Volery et al., 2013; Bae et al., 2014; Maresch et al., 2016). This uncertainty could be linked to the difficulty to measure qualitative variables (Lortie & Castrogiovanni, 2015; Sun et al., 2017). Due to these inconsistencies, the nee d of further insights on the mentioned relationship emerges. According to some leading scholars in this field (Nabi et al., 2017), it would be advisable to adopt new perspectives exploring university-based EE at different levels (i.e., PhD programs, post-doc initiatives, research fellow activities, etc.), and their impact on different stakeholders (H1).

Many studies (e.g., Liñán et al., 2011; Kibler, 2013; Passaro et al., 2019) show that the socio-economic context plays a relevant role in encouraging academics and other aspiring innovative entrepreneurs to enhance their skills and competences, by attending specific educational course hoping to use them for a possible entrepreneurial choice (H2).

Based on the literature review, we expect that EE significantly impacts on entrepreneurial choice able to improve actual and potential entrepreneurial initiatives (Kibler, 2013; Sun et al., 2017). Put differently, it is conceivable to assume that the higher is the EE, the higher should be the propensity toward the entrepreneurial choice (H3).

Several researchers have also tested the external influences to predict the emergence of EI (Liñán & Chen, 2009; Krueger et al., 2013; Kibler, 2013). Studies show that a positive perception of how an environment is economically conducive to the creation of new businesses has a relevant impact on the actual decision to engage the entrepreneurial choice (Begley et al., 2005). As a less business conducive environment characterizes Campania region, it could be interesting to understand whether and how the EEP affects EI (e.g., Muffatto et al., 2014) (P4).

However, not all the scholars dealing with the relationship among the mentioned variables (EE and EI) consider the role of human capital (Liñán et al., 2011; Sánchez, 2013).

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Nevertheless, the emergence of EI descends from the direct enrichment and enforcement of the specific component of human capital devoted to the entrepreneurship (Peña, 2002; Unger et al., 2011; Dimov, 2017). In this view, the EE provides knowledge and competences for managing a business and facing challenges and threats (H5).

It is also plausible that the emergence of intention can itself determine a drive for the improvement of ErHC (Passaro et al., 2018). In other words, when individuals perceive the presence of EI, they could be encouraged to improve the knowledge assets also by mean of different educational channels or learning processes (H6).

By considering these premises, and consistently with section 2, we test the following hypotheses, summarized in Figure 1:

H1: Entrepreneurial Education affects Entrepreneurship-related Human Capital (EE → ErHC)

H2: External Environment Perception affects Entrepreneurship-related Human Capital (EEP → ErHC)

H3: Entrepreneurial Education affects Entrepreneurial Intention (EE → EI)

H4: Entrepreneurial Education Perception affects Entrepreneurial Intention (EEP → EI)

H5: Entrepreneurship-related Human Capital affects Entrepreneurial Intention (ErHC → EI)

H6: Entrepreneurial Intention affects Entrepreneurship-related Human Capital (EI → ErHC).

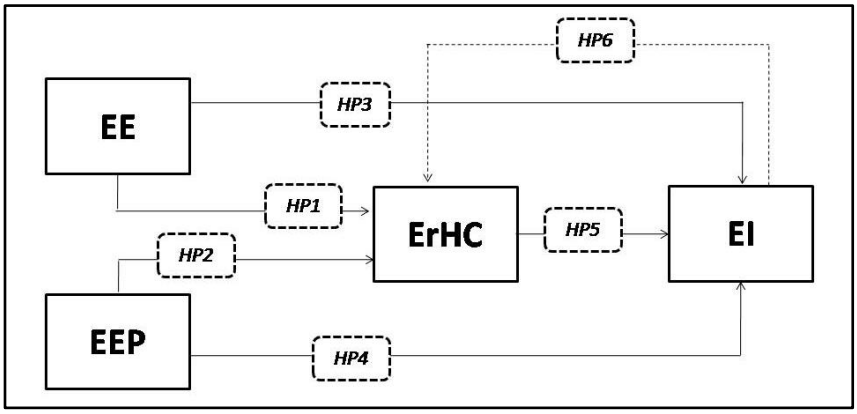

FIGURE 1
THE MODEL TO BE ESTIMATED

Compared to other investigations on students or scientists, this deserves to be performed as it could allow us to grasp some particular aspects of the explained relationship so far slipped out. Indeed, participants in a BPC could have already:

a. participated in some specific training and education programs of university origin,

b. gained benefits from the collaborative interactions with the university network of actors,

c. received advices and suggestions from advisors thus improving the feasibility of business idea,

d. exhibited at least a latent intention to become entrepreneurs.

METHODOLOGY

117 among professors (5.4%), researchers (14.5%), PhDs/PhD students and fellows (17.2%), technical staff (22.2%), collaborators with contract/post-doc (8.5%), others (16.7%) (15.5% are not available) participating at a BPC were surveyed with an online survey. The

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gender distribution reflects the distribution of the enrolled participants, with a prevalence of males (53%). The average respondents' age was 39.1 years old.

To participate in the BPC, people have to present a business plan linked to the scientific findings of their own research activities with the purpose of launching a start-up. After a six-month training period, an independent judging committee awards the best business plans with monetary prizes. Then the top five winners participate at the University National Innovation Prize.

The data collection was performed at the end of 2015 by administering an online questionnaire. All 245 participants of three different editions of the BPC (from 2013 to 2015) were invited by means a letter to complete the online questionnaire, but only 117 provided reliable feedback (48%). Specifically, many respondents were excluded due to high rate of item non-responses, or unit non-responses. All respondents have attended the educational and training programs, but only the 53% have submitted the business plan.

The online questionnaire was made up of 22 multiple-choice questions divided into four sections corresponding to the considered latent estimated variables (EE, EEP, ErHC, EI) of the model to be tested. Moreover, we provided participants with a further section including five questions oriented to evaluate the effectiveness of the BPC in supporting their first entrepreneurial steps. Due to high rate of item non-responses (40%), we decided to not insert this latent variable in the model to be tested. Anyway, we have also analyzed these responses.

The field analysis was aimed at measuring the latent variables that can be considered to be unobservable constructs and, as consequence, they can only be estimated by means of empirical observations. The queries of the questionnaire were defined on the basis of a literature review. Specifically:

i. Entrepreneurship Education (EE): was assessed by a set of nine questions that were identified by reviewing the literature on the impact of the EE on both ErHc and EI (Sánchez, 2013; Fayolle & Gailly, 2015; Maresch et al., 2016). Nine questions measure the knowledge base, parents' education and skills acquired in education programs.

ii. External Environment Perception (EEP): was measured by four questions defined on the basis of the literature review about the impact of the regional/local context on the EI and ErHC (Krueger et al., 2000; Krueger et al., 2013; Passaro et al., 2018).

iii. Entrepreneurship-related human capital (ErHC): was analyzed through six items identified on the basis of the literature review on intellectual capital and its antecedents (Peña, 2002; Unger et al., 2011; Martin et al., 2013). The questions aim to measure the level of the (entrepreneurship-related) skills and competences that are possessed by interviewees.

iv. Entrepreneurial Intention (EI): was measured with three items finalized to measure the effort that an individual will make to pursue an entrepreneurial career. The questions are those used by Liñán & Chen's (2009) and Liñán et al.,'s (2011) in the Entrepreneurial Intention Questionnaire.

The questionnaire was structured to minimize the acquiescence bias (the tendency of individuals to agree with statements on a scale or instrument) by including some reversed items. A face validity test was performed with a panel of experts (3 professors, 4 participants at previous BPC editions, 3 BPC tutors) in order to assess the transparency and the ease of understanding of the items. After this step, some improvements have been introduced.

With regard to the measurement model, all of the variables were measured using the self-assessment answers to a widespread 5-point Likert psychometric scale (1=Highly unlikely; 5=very likely).

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As the model is composed of latent constructs underlying a set of directly measurable variables grouped into a domain, we used the Structural equation modeling (SEM) method, which appears to be suitable, as it allows examining the relationships among multiple variables by analyzing a series of dependence relationships simultaneously. Moreover, a partial least squares (PLS) approach has been adopted because it supports exploratory research, and the data distribution assumptions are less stringent. The software package that we employed was SmartPLS 3.0 (Ringle et al., 2005).

RESULTS

The PLS path model requires the analysis and interpretation of both the measurement (outer model) and the structural (or inner) models. Specifically, the model assessment follows a three-stage process:

1. Assessment of the measurement model, evaluating the validity and reliability by composite reliability, average variance extracted and discriminant validity;
2. Assessment of the structural model by considering the R2;
3. Validation of the model through bootstrapping technique.

Table 1 shows the Composite Reliability and the Average Value Extracted for the EI construct. The measurement model test refers to how the constructs have been operationalized and, thus, measured by using manifest variables. The objective of the analysis is to assess the reliability and validity of measures.

After an iterative estimation procedure, we dropped by the model indicators with loadings smaller than 0.6 (EEP4; ErHC3; ErHC5; EI2) (Roldan & Leal, 2003).

Before proceeding to the analysis of each reliability measurement, we have to note the items that measure three constructs, namely EE, EEP and ErHC, were defined as formative and not as reflective. Reflective variables are caused by the construct and reflect its variation, while formative variables cause the latent construct. We decided to treat these items as formative because: i) they are the cause of the construct and not vice versa, and ii) this change improved the quality of the model. As such items are considered to be formative, SmartPLS does not compute the reliability and validity measures.

We applied the following cut-off values during the data analysis (Latan & Ghozali, 2012): Composite reliability higher than 0.7; Average variance extracted (AVE) higher than 0.5. Thus, data passed the test of reliability and validity.

Table 1
INTERNAL CONSISTENCY AND VALIDITY FOR EI CONSTRUCT

Indicators	Values
Composite reliability	0,814
Average Value Extracted	0,687

To verify also the discriminant validity, which represents the extent to which the measures of different concepts are distinct, we adopted the AVE analysis (Gefen & Straub, 2005), that is performed by comparing the square root of the AVE (SAVE) with the correlation between the construct and every other construct. The square root of the AVE should be much larger than the correlations with the other constructs (Fornell & Larcker, 1981). Table 2 shows the correlations between the constructs and the SAVE. In each case, the SAVE is larger than the

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correlations of the construct with all of the other constructs. Therefore, the data passed the test of discriminant validity.

Table 2
DISCRIMINANT VALIDITY RESULTS FOR EI CONSTRUCT

Constructs	Save	Inter-constructs correlation
Entrepreneurial Intention	0,829	0,341; 0,399; 0,319;

Once verified the reliability and validity of the measurement model, the structural model quality was evaluated by examining the determination coefficients (R2) of the endogenous latent variables. For each regression in the structural model, we have an R2 that is interpreted similarly as in any multiple regression analysis, and it indicates the amount of variance in the endogenous latent variables that is explained by its independent variables (Table 3).

Table 3
ASSESSMENT OF THE STRUCTURAL MODEL

Constructs	R^2
Entrepreneurship-related Human Capital	0,217
Entrepreneurial Intention	0,293

According to the literature (Cohen, 1992), the inner model appears to be correct (Table 3); the computed R2 coefficients can be considered moderate (ErHC) and large (EI) values. Moreover, there is no collinearity problem among predictor variables being all the Variance Inflation Factor values less than 3.3. Finally, to evaluate the overall statistical fitness of the model tested, we considered the Standardized Root Mean Square Residual (SRMR). Hu & Bentler (1999) suggest a value less than 0.08 (more conservative version) is considered a good fit; here the SRMR value is 0.073.

Table 4 reports the estimated path coefficients, the standard errors and the p-values. Analyzing the Structural model, we observe that most of the estimated coefficients are significant. Firstly, we note that only the path coefficient among EEP on ErHC is not significant, since p-values are quite greater than 0.10. Therefore, it is not possible to individuate a relationship between these latent variables.

Table 4
STRUCTURAL MODEL: PATH COEFFICIENTS, STANDARD ERRORS AND P-VALUES

	Latent Variables	Path Coefficients	Standard Errors	P-values
H1	EE → ErHC	0.466	0.103	0.000
H2	EEP → ErHC	0.024	0.192	0.839
H3	EE → EI	0.316	0.121	0.009
H4	EEP → EI	0.321	0.139	0.095
H5	ErHC → EI	0.189	0.107	0.079
H6	EI → ErHC	0.207	0.125	0.098

The variable EE is the most important variable both for ErHC and EI with path coefficients respectively equals to 0.466 and 0.316. The analysis of these results confirms the importance of the EE in supporting the emergence of specific entrepreneurial skills and competences, as well as the intention. Hence, H1 and H3 are verified.

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As shown in Table 4, EEP has a direct and significant relationship with EI, and thus H4 can be accepted: people with a positive perception of the external environment are encouraged to become an entrepreneur (0.321). Notwithstanding, EEP has not a statistically significant impact on the ErHC; therefore, H2 is not confirmed. Finally, results show that a self-reinforcing mechanism exists between ErHC and EI (H5 and H6).

Based on these results, it is possible to confirm that the decision to become an entrepreneur could depend on the presence of a complex network of relationship among the suggested constructs.

To better understand whether and how a university BPC can be considered a proper educational tool of the current entrepreneurial universities, one-tailed T-tests have been performed. Specifically, we believe that a positive perception of the (internal) BPC context has a positive impact on the emergence of the ErHC and EI. This assumption is coherent with the literature about the impact of the (external) environment perception on the ErHC and EI. According to this, participants were asked to complete some items about the effectiveness of the specific BPC in supporting them during the first steps of their entrepreneurial initiatives.

So, we divided participants in two sub-groups on the basis of their evaluation and we considered an evaluation as positive when the total participants' BPC perception score is, at least, equal to 15 out of 25 (5 "*very likely*" responses). Conversely, the evaluation is considered negative when the overall participants' BPC perception score is less than equal to 15.

Only the 60% of participants provided a reliable feedback about the effectiveness of the university BPC and they gave a quite positive feedback, especially in terms of enhancing of the business idea and identification of new opportunities. On the contrary, participants provided less positive responses about the ability to search for investors, improvement of the business idea, and to create new useful relationships.

Based on the threshold considered to identify positive versus negative BPC evaluation, we obtained two groups composed, respectively, of 42 (Positive rank) and 28 (Negative rank) individuals. Before proceeding with the analyses, we verified the existence of significant differences in terms of BPC evaluation (p-value=0.0000). In the Table 5, the results of the one-tailed T-tests are shown with the regards to the emergence of the ErHC and EI.

Table 5
ONE-TAILED T-TEST RESULTS

Variable	Mean difference
ErHC	4,35*
EI	0,70**
**p-value<0.01; **p-value<0.1*	

Results show that a positive perception of the BPC context (or internal context) has a positive and statistically significant impact on the emergence of ErHC and EI.

DISCUSSION

Universities are key actors of the current knowledge-economy by means of the traditional two missions of teaching and research. More recently, universities are also required to develop a third mission contributing at the territorial economic development. It also includes measures finalized to stimulate the entrepreneurial activism by providing entrepreneurship education (EE),

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and other types of supports like business plan competitions (BPC). Anyway, the effectiveness of EE is not undoubtedly proved, while few surveys investigated how EE is routed through BPC.

In line with these considerations, this paper aims to investigate whether and how EE affects the development of entrepreneurship related human capital (ErHC) responsible of the entrepreneurial intention (EI) emergence in a sample of academics participating in a BPC. Six hypotheses were tested.

Results confirm the existence of a positive relationship among university EE and ErHC assets (HP1). EE is expected to enforce the knowledge of entrepreneurial process, the competences in identifying innovative business opportunities or in dealing with ambiguity in decision-making process. Furthermore, it supports the positive perceptions of entrepreneurship and the desirability and feasibility of becoming an entrepreneur.

The relevance of EE for the improvement of ErHC is strengthened by the reject of HP2, which was finalized to verify if also ErHC is affected by the external environment perception (EEP). So, EE is the main factor able to feed ErHC.

H3 and H4 were confirmed as EE and EEP positively affect the EI. As EI is an individual cognitive state temporally and casually prior to action, it is conceivable that, as a consequence of the provision of EE, some individual reactions and behaviours can somehow slip out from the intermediate role of human capital, affecting the emergence of intention.

Consistent with the literature (e.g., Unger et al., 2011; Haiter et al., 2018), also the hypothesis (H5) is confirmed; specifically, the improvement of individuals' knowledge, skills, abilities, competences or other subjective features related to the entrepreneurship directly impacts on EI (Martin et al., 2013 Salamzadeh et al., 2014). ErHC is a factor that strengthens those individual characteristics (personal attitudes, intensity of motivation, role model imitation, self-efficacy, locus of control, etc) influencing the emergence of EI. Moreover, when individuals exhibit relevant EI, they can be encouraged to further enhance their set of ErHC assets. In this view, following the desire to start a business, individuals may attempt to maximize the usefulness of the EE provided by university third mission initiatives (Passaro et al., 2020).

Finally, also hypothesis H6 is accepted. This is a very important result demonstrating the existence of virtuous circle whereas ErHC positively affects the development of EI and, in turn, EI positively affects the formation of ErHC. Hence, these two constructs are mutually reinforcing. When the ability to discover and exploit new economic opportunities and manage them effectively increases, the desire to start a business also tends to increase.

Focusing on the evaluation of the BPC, we also found that a positive perception of the BPC context has a stronger impact on the emergence of the ErHC than on the EI. In a nutshell, it is possible to claim that a positive EEP and BPC perception exert different effects on the emergence of ErHC and EI. While the EEP has a positive and statistically significant impact only on the emergence of the EI, the internal BPC perception affects mainly the development of ErHC. This means that both the external (EEP) and internal (BPC) context can be considered as critical enablers of the entrepreneurial learning and intention.

CONCLUSIONS AND POLICY IMPLICATIONS

Two important assumptions emerge from this study. People engaged into a business plan competition (BCP) are likely to exhibit EI. Previous studies confirm this assumption about BPCs (Schwartz et al., 2013; Passaro et al., 2017b). In this view, entrepreneurial education (EE) provided by universities is a powerful tool to stimulate the entrepreneurial choice. Secondly, our

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findings confirm previous literature (Bae et al., 2014; Fayolle, & Gailly, 2015; Dimov, 2017; Bhatt, 2021) proving that the decision to become an entrepreneur derives from a complex network of relationships where EE plays a pivotal role.

Consequently, those universities characterized by a strong entrepreneurial nature represent an irreplaceable key lever for the economic development, as their presence provides indispensable knowledge, innovations and specific EE (Laredo, 2007; Guerrero et al., 2014; Etzkowitz, 2017). These universities can harness the synergetic relationships between the traditional teaching and research activities, valorizing their capabilities with a right alignment among their three missions. Notwithstanding, the first mission remains the most relevant, especially when fueled by the research and addressed to entrepreneurship and socioeconomic development. Moreover, it is oriented to students which are a dynamic flow-through of "*human capital*" by which knowledge and innovation are widespread in the external context. This means that universities are expected to remain the core institution of the knowledge system as long as they retain the original educational mission. In this view, providing individuals with the skills necessary to launch companies, before or after graduation, is likely to have a strong economic impact.

Furthermore, the external context, EE and BPC are enabling factors influencing both entrepreneurial learning processes and the emergence of EI. Their efficacy, anyway, need to be nurtured. In this view at least two policy implications emerge.

The first is related to universities. Many obstacles and barriers can prevent universities to exploit their best educational potential. For instance, the lack of entrepreneurial role models, the absence of a unified entrepreneurial culture across the institutions, or the academic progression processes adversely affecting academic's entrepreneurial efforts. Universities' reward structure is primarily based on publications, and do not adequately reward entrepreneurial activity (Rae, 2010; Philpott et al., 2011). Moreover, the risk of distorting traditional university missions is growing. If public authorities push on universities to adopt a triple helix model to encourage local economic development, many universities management could place greater emphasis on their academics engaged in entrepreneurial activities and/or generating an entrepreneurial output. In so doing, universities could shift away from a traditional organic bottom-up management approach, towards a top-down push approach (Etzkowitz, 2017). Therefore, if public authorities are betting on universities to achieve high quality entrepreneurial goals as well, by supporting cutting-edge initiatives, they must also ensure adequate funding to guarantee the independence of these institutions.

The second implication concerns the above-mentioned public authorities. The development of an entrepreneurial university is not as straightforward as it may seem, at least in the context of traditional, public-funded universities (Philpott et al., 2011; Salamzadeh et al., 2013; Guerrero et al., 2014). For this reason, public authorities should pay great attention in coherently supporting such academic transformation through proper measures, incentives and initiatives. In particular, results show that policies and guidelines should be oriented to support the University in the improvement of their educational activities and programs also to strength and augment the processes of generation of human capital entrepreneurship-related (Ployhart & Moliterno, 2011; Martin et al., 2013; Passaro et al., 2018). In this perspective, in addition to the need for adequate funding, public institutions must guarantee decision-making autonomy to universities and support them in enhancing their system of knowledge and capabilities. The goal, of course, is to avoid that universities focus exclusively on the third mission, by weakening the other two missions. The latter is a sine qua non condition for the university to adequately

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develop the third mission, thanks to the constant exchange and renewal of the knowledge provided by new researchers and scholars, and to the emergence of students adequately trained in the aforementioned entrepreneurial human capital (Unger et al., 2011; Sánchez, 2013; Secundo et al., 2017).

The paper has various limitations. Although participants in a BPC is a novelty of this research field, the lack of the possibility to compare with similar survey is a key limitation. In addition, it includes 117 academics that just belong to seven different universities being, in this way, exposed to the influence of diverse and specific examined contexts.

To improve the effectiveness of this type of investigation, it would be extremely important to propose longitudinal surveys to understand how many people who are endowed with an EI will actually start a new firm. This last represents an objective even more significant for those taking part in a BPC who have already somehow tested the economic feasibility of their potential innovative idea. Hence, future researches using longitudinal data and larger samples/populations of universities of different contexts that allow the validation of our model are welcome.

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