

Haddad, Ghada; Haddad, Gloria; Nagpal, Gautam

## Article

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## Can students' perception of the diverse learning environment affect their intentions toward entrepreneurship?



Ghada Haddad<sup>a,\*</sup>, Gloria Haddad<sup>b</sup>, Gautam Nagpal<sup>c,d</sup>

<sup>a</sup> Ecole Supérieure de Commerce (ESC), Pau Business School, France

<sup>b</sup> Faculty of Business and Management, Saint Joseph University of Beirut, Lebanon

<sup>c</sup> Ecole Supérieure de Commerce (ESC), Pau Business School, France

<sup>d</sup> Université de Pau et des Pays de l'Adour, E2S UPPA, CNRS, TREE, Pau, France

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### ABSTRACT

Business schools play a major role in influencing students' entrepreneurial intentions and behaviors. Although research linking entrepreneurship education with intentions is abundant, few studies have focused on the learning environment through the lens of diversity. This paper adopts the well-established theory of planned behavior (TPB) model to explore the impact of students' perception of diverse learning environment on their intentions toward entrepreneurship. Using a quantitative approach, data was collected from 407 students in an international business school in France. The results show that students' favorable perception of the respect their business schools show diversity positively influences the formation of their entrepreneurial intentions through the mediating effect of personal attitude toward entrepreneurship, subjective norms, and perceived behavioral control. This study contributes to existing knowledge about learning environments and their impact on students' entrepreneurial intentions. It enriches research based on the TPB model through integrating an unprecedented construct: the diverse learning environment. In practice, it informs academic practitioners and institutions about the need to capitalize on diversity to develop students' entrepreneurial intentions and drive entrepreneurship.

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### Abbreviations

DLE: Diversity of the learning environment  
EI: Entrepreneurial intention  
PATE: Perceived behavioral control  
PGE: Grande Ecole Program  
SN: Subjective norms  
TPB: Theory of planned behavior

### Introduction

Entrepreneurial activities drive economic growth, and today, more pressure is being placed on academic institutions to stimulate the entrepreneurial mindset of students (European Commission, 2012; Piñero-Chousa, López-Cabarcos, Romero-Castro, & Pérez-Pico, 2020). Indeed, universities and business schools are agents of the entrepreneurial process in the sense that they positively influence students' entrepreneurial behavior (Fernández-Pérez, Montes-Merino,

Rodríguez-Ariza, & Galicia, 2019; Munir, Jianfeng, & Ramzan, 2019). Since intentions are viewed as precursors of behavior, intention-based models have gained the attention of entrepreneurship scholars; in particular, Ajzen's (1991) theory of planned behavior (TPB), which suggests three antecedents of intention (1. attitude toward the behavior; 2. subjective norms; and 3. the degree of perceived behavioral control; Lortie & Castogiovanni, 2015), has gained increased scholarly attention.

Many studies have found empirical evidence of the influence of entrepreneurship education, entrepreneurial learning, and the learning environment on entrepreneurial intentions (Krueger, Reilly, & Carsrud, 2000; Kuratko, 2005; Souitaris, Zerbinati, & Al-Laham, 2007; Dutta, Li, & Merenda, 2011; Lorz, Mueller, & Volery, 2013; Fayolle & Gailly, 2015; Welsh, Tullar, & Nemati, 2016; Zhang, Wei, Sun, & Tung, 2019). Furthermore, prior research has emphasized the need for a better understanding of the impact that academic context has on students' intentions toward entrepreneurship (Liñán & Fayolle, 2015). Entrepreneurship studies have demonstrated that the learning environment is the place where learners develop skills and abilities that indirectly impact their entrepreneurial intentions (Gieure, Benavides-Espinosa, & Roig-Dobón, 2019; Ezeh, Nkamnebe,

\* Corresponding author.

E-mail addresses: [ghada.haddad@esc-pau.fr](mailto:ghada.haddad@esc-pau.fr) (G. Haddad), [gloria.haddad@usj.edu.lb](mailto:gloria.haddad@usj.edu.lb) (G. Haddad), [gautam.nagpal@esc-pau.fr](mailto:gautam.nagpal@esc-pau.fr) (G. Nagpal).

& Omodafe, 2019). However, despite the importance of the impact environment has on students' behaviors, and despite the fact that European academic institutions are increasingly dedicating special attention to matters of diversity (Claeys-Kulik, Jørgensen, & Stöber, 2019), few studies have examined the relationship between a diverse learning environment and entrepreneurial intentions.

The components of a diverse learning environment, as identified by many scholars (Hurtado, Milem, Clayton-Pedersen, & Allen, 1999; Howell & Tuitt, 2003; William, 2010; Hurtado, Alvarez, Guillermo-Wann, Cuellar, & Arellano, 2012), include both organizational and individual factors. The concern of this work, among other components, is the campus climate. Therefore, using an unprecedented approach, this study is undertaken to specifically understand the students' appreciation of the learning climate as respectful of diversity and to understand how this affects their entrepreneurial intentions using the TPB model. This research was conducted in an international business school based in France. The sample includes 407 students of different genders and from different age and nationality groups, who are enrolled in graduate and undergraduate programs. The structural equation modeling technique was used to test the proposed hypotheses.

The present paper enriches the existing literature by integrating the diverse learning environment construct into the TBP model; no prior studies have tested this construct. Our findings contribute to the literature related to entrepreneurship education by providing empirical evidence that demonstrates how studying in a learning environment where diversity is respected affects the formation of entrepreneurial intentions. Thus, the results have significant implications for academic institutions aiming to promote and develop entrepreneurship.

The remainder of this document proceeds as follows: the following section presents the theoretical framework followed by the methods used; the results are then presented and discussed; finally, the paper concludes.

## Theoretical framework

### Entrepreneurial intentions

The entrepreneurial process occurs over time and includes several stages before an individual starts up a firm (Gartner, Shaver, Gatewood, & Katz, 1994). Entrepreneurial intentions are a key precursor of an entrepreneurial venture (Bird, 1988; Lortie & Castogiovanni, 2015; Krueger, 2017; Bogatyreva, Edelman, Manolova, Osiyevskyy, & Shirokova, 2019). Some scholars (e.g., Shapero & Sokol, 1982; Krueger & Brazeal, 1994; Krueger et al., 2000; Peterman & Kennedy, 2003) have based their research into entrepreneurial intentions on Shapero's (1975) entrepreneurial event model, which links the personal attempt to start a new venture with three elements: the perception of its desirability, the propensity to act, and the perception of feasibility. Other scholars, drawing on psychology literature, have adopted Ajzen's (1991) TPB model to explore the direct antecedents of entrepreneurial intentions. The TPB is well-established and has become an extensively used model in the field of entrepreneurship (Lortie & Castogiovanni, 2015; Padilla-Angulo, Díaz-Pichardo, Sánchez-Medina, & Ramboarison-Lalao, 2019). The model (Ajzen 1991, 2002) explains entrepreneurial intentions by considering both personal and social factors. It states that three motivational factors affect intentions: 1. the individual's attitude toward the behavior, 2. subjective norms, and 3. the degree of perceived behavioral control. First, the individual's attitude toward entrepreneurial behavior refers to their degree of attraction toward becoming an entrepreneur and their belief that it will lead to positive outcomes. Second, subjective norms refer to the individual's perception of other people's opinions of the entrepreneurial behavior, in the sense that others may or may not approve of the individual's decision to become

an entrepreneur. Third, the subject's perception of behavioral control refers to their perception of the ease or difficulty of becoming an entrepreneur (García-Rodríguez, Gil-Soto, Ruiz-Rosa, & Sene, 2015). Perceived behavioral control is a proxy of self-efficacy (Bandura, 1977), and it refers to one's self-perception of the capacity to perform a certain action, such as launching a new business (Krueger et al., 2000).

Lortie and Castogiovanni (2015) conducted a literature review to build a working list of all the articles in entrepreneurship research that have cited the TPB. They found that all of the relationships in the TPB model had at least 13 articles confirming their existence in the entrepreneurship context (16 articles discussing the relationship between attitudes and intentions, 14 articles discussing the relationship between subjective norms and intentions, 24 articles discussing the relationship between perceived behavioral control and intentions), except for perceived behavioral control to entrepreneurial behaviors (3 articles). Although subjective norms have received a lot of attention in the literature, some scholars (Krueger et al., 2000; Liñán & Chen, 2009) working with samples of university students did not find evidence of a relationship between subjective norms and entrepreneurial intentions. Following the numerous works that have used the TPB to examine entrepreneurial intentions (Barnir, Watson, & Hutchins, 2011; Lortie & Castogiovanni, 2015), this research suggests a set of hypotheses to confirm the functioning of the TPB model in the context of this study:

H1: The data confirms the functioning of the TPB model.

H1a: Personal attitude toward entrepreneurial behavior has a positive and significant impact on entrepreneurial intentions.

H1b: Subjective norms have a positive and significant impact on entrepreneurial intentions.

H1c: Perception of behavioral control has a positive and significant impact on entrepreneurial intentions.

### Diverse learning environment

#### Understanding diversity

In recent decades, much research has examined the meaning and components of diversity. Some scholars, such as Prasad (2006), define it as valuing and respecting variations concerning gender, race, ethnicity, lifestyle, appearance, linguistic proficiency, communication, and decision-making style. The consulting company Ernst and Young (2010) expands the definition of diversity to include human experience, age, culture, competences, skills, education, and personality types. For Harvey and Allard (2015), diversity is the differences between people that affect their quality of life at work, in terms of workplace experience, motivation, and inclusion. In the field of education, the examined dimensions of diversity are gender, race, ethnicity, academic profiles, and age (Padilla-Angulo et al., 2019).

The benefits of diversity are documented in many articles, including increased performance (Hansen, Owan, & Pan, 2015), improved critical thinking and self-efficacy (Bandura, 2001; Loes, Pascarella, & Umbach, 2012), increased creativity and innovation (Amabile, 1996; Alves, Marques, Saur, & Marques, 2007), and enhanced idea generation (Paulus, 2000). Though there are many studies on diversity and its benefits, contributions dealing with the diverse learning environment and its impact on entrepreneurial intentions are scarce.

#### Components of a diverse learning environment

Coleman and Palmer (2004) show that in order to have a diverse learning environment, institutions should first adopt diversity at its broadest components, including racial/ethnic and non-racial/ethnic factors; second, they should include diversity in their mission, structure, and pedagogy; and third, they should ensure that diversity positively affects students' achievement and performance.

Hurtado et al. (1999) propose a conceptual model that reflects the four components of a diverse learning environment: historical legacy of inclusion/exclusion (mission and policies), psychological climate (the perceptions of discrimination and racial/ethnic tension), structural diversity (students and faculty), and the behavioral dimension (classroom diversity, campus involvement, and social interactions). William (2010) expands this model and suggests data indicators that can tangibly measure the proposed components. Some of these indicators are at the organizational level, such as lawsuits, campus protests, policy shifts, and changes in the legal interpretation of key issues, the number of minorities and women, the number of people within the LGBT community, and equitable percentages in various disciplinary areas and majors. Some other indicators are at the individual level, such as individual perceptions of belonging, alienation, and conflict and the overall campus experience. Consequently, many scholars assert that campus climate is an essential factor affecting the diverse learning environment (Howell & Tuitt, 2003; William, 2010; Hurtado et al., 2012).

Howell and Tuitt (2003) believe that diversity on campus should consist of inclusive pedagogy and teaching methods, diversified course content, and diverse instructor and student identities. For William (2010), the climate of a college or university campus refers to the inclusivity dynamics of the organization and diversity in terms of race, ethnicity, gender, sexuality, disability, and a variety of social identities. The author stipulates that, in order to provide a basis for a vital community of learning, educational institutions should focus on building a climate that cultivates diversity and embraces differences. Likewise, Hurtado et al. (2012) extend the conceptual model of Hurtado et al. (1999) by adding the organizational component, which puts emphasis on the climate for diversity and the way institutions can foster it through curricular and co-curricular processes and practices, course content and programing, and community interactions.

#### *Learning environment and entrepreneurial intentions*

Prior scholars have emphasized the role of education in fostering entrepreneurial intentions (Krueger et al., 2000; Kuratko, 2005; Dutta et al., 2011; Fayolle & Gailly, 2015; Welsh et al., 2016). Zhang et al. (2019) developed a model that captures the five aspects of entrepreneurial learning (i.e., known-why, known-what, known-how, known-who, known-when) and tested its association with entrepreneurial intentions using the TPB model. They demonstrated positive relationships between the studied variables and revealed the importance of context in explaining variations in students' intentions, even when exposed to same education. Gieure et al. (2019) developed an extended TPB model that incorporates students' skills and capabilities (acquired through entrepreneurship education) and found positive relationships with entrepreneurial intentions. Their findings suggest that universities have the purpose to provide learners with the necessary competencies to develop entrepreneurial careers, since teaching, research, and economic development have become the cornerstones of university education. Thus, a university that provides an entrepreneurial educational environment has a significant impact on entrepreneurial intentions (Cheng, Chan, & Mahmood, 2009; Liñán & Fayolle, 2015). Nabi and Holden (2008) emphasize the need to adopt tailored approaches across different contexts to best suit individual learners' needs. Indeed, the university context is considered a strong predictor of entrepreneurial intent, even stronger than personality traits and socio-economic factors (Franke & Lüthje, 2004). A positive student perception of the university environment can significantly increase entrepreneurial intentions (Schwarz, Wdowiak, Almer-Jarz, & Breitenacker, 2009; Barral, Ribeiro, & Canever, 2018), since learning is not only academic education but also a synergistic relationship between learner and environment that requires a holistic process of adaptation to contextual factors that shape individual experiences (Leal-Rodríguez &

Albort-Morant, 2019). Therefore, this paper focuses on the diversity dimension of the learning environment; this dimension refers to students' perception of belonging to an environment that respects diversity and embraces individual differences (William, 2010). Since entrepreneurship depends on exogeneous factors, on the relationship of the individual with their external environment (Krueger et al., 2000; Welter, 2011), this research proposes the following:

H2: Students' positive perception of their diverse learning environment has a positive and significant impact on their entrepreneurial intentions.

Drawing on the organizational literature, this research found that effective diversity management and the creation of an environment in which differences are valued, special needs are considered, and every person feels recognized and respected improves individual well-being and performance (Wrench, Roosblad, & Kraal, 2009). The research also reveals that an environment that encourages diversity, in the sense of acceptance of divergent views, has the ability to generate more creative solutions and to drive business innovation and growth (Bendl, Bleijenbergh, Henttonen, & Mills, 2015). Since entrepreneurship has long been acknowledged as an act of creativity and business idea generation (Padilla-Angulo et al., 2019), and since attitudes toward entrepreneurship are affected by exogenous influences (Krueger et al., 2000), this paper suggests that a diverse learning environment, which enhances creativity, is an exogenous factor that contributes to more positive entrepreneurial attitudes. Therefore, this paper suggests

H3: Students' positive perception of their diverse learning environment has a positive and significant impact on their personal attitude toward entrepreneurship.

Schmutzler, Andonova, and Diaz-Serrano (2019) argue that the transmission of entrepreneurial values comes with exposure to the cultural context and exposure to peers. In that sense, entrepreneurship is understood as a social phenomenon deeply rooted in social interactions and experiences, in the proximate social environment (Hoang & Antoncic, 2003; Haddad & Loarne, 2015; Hoang & Yi, 2015; Haddad, 2017), in educational settings (Haddad, Esposito, & Tse, 2016; Ezeh et al., 2019), and through networks that enable access to the resources and people that can shape entrepreneurial behaviors (Eesley & Wang, 2017; Nowiński & Haddoud, 2019). Given the importance of the university environment as predictor of entrepreneurial intent (Schwarz et al., 2009), and given the possible transmission of entrepreneurial values that come with exposure to peers and particular cultural contexts (Schmutzler et al., 2019), this research posits that there is a relationship between a diverse learning environment and subjective norms:

H4: Students' positive perception of their diverse learning environment has a positive and significant impact on subjective norms.

Choi, Price, and Vinokur (2003) revealed the effect of diversity, leadership, and group climate on self-efficacy changes in groups. They demonstrated that self-efficacy is a social and context-dependent process. Moreover, the works of Gurin, Dey, Hurtado, and Gurin (2002) and Loes et al. (2012) show that interactions between diverse students improve complex forms of thought, such as critical thinking, that are strongly correlated with self-efficacy (Greene, Miller, Crowson, Duke, & Akey, 2004). Similarly, Padilla-Angulo et al. (2019) reveal that the connections between people who have different profiles enhance entrepreneurial self-efficacy and positively affect entrepreneurial intentions. Thus, this research suggests that a learning environment where students feel valued and

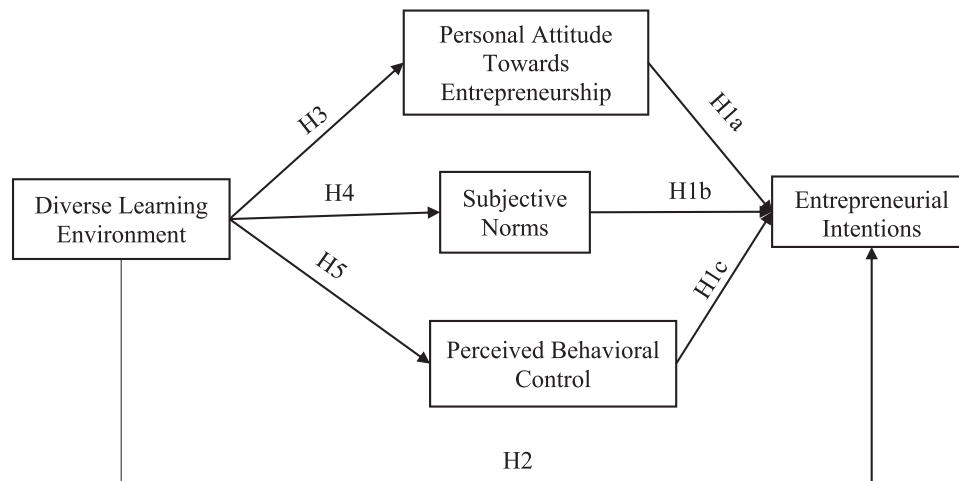


Fig. 1. Hypothesized model (H6 consists of indirect effect hypothesis).

acknowledged can increase said students' level of self-efficacy (Solomon, Kickul, Wilson, Marlino, & Barbosa, 2008):

H5: Students' positive perception of their diverse learning environment has a positive and significant impact on their perception of behavioral control.

Based on theories and empirical evidence, this research hypothesizes that there is a direct and positive relationship between a diverse learning environment and entrepreneurial intentions, and there are positive relationships between a diverse learning environment and personal attitude toward entrepreneurship, subjective norms, and perceived behavioral control. Following the approach of Lortie and Castogiovanni (2015), who proved the mediating role of the antecedents of entrepreneurial intentions, this study also posits that

H6: Students' positive perception of their diverse learning environment has a positive and significant indirect impact on entrepreneurial intentions through the TPB antecedents (personal attitude toward entrepreneurship, subjective norms, perception of behavioral control).

Fig. 1 presents the proposed theoretical model along with the hypothesized paths of the study:

## Method

### Study context

Data for this study were collected from an international business school based in France. The school offers a bachelor's degree in international management, as well as the Grande Ecole Program (PGE), which offers several opportunities: apprenticeships, study abroad programs, and international internships. The PGE consists of two periods: the fundamental cycle (ESC1), which lasts 12 months, and the entrepreneurial cycle (ESC2 ESC3), which lasts 24 to 36 months.

The school is characterized by its international profile and cultural diversity, the latter of which is due to its partnerships and exchanges with universities from North and Central Africa. Among its student population, 51 % are French and 49% are from different nationalities belonging to Africa, Asia, and Europe. Moreover, 55% of the school faculty is multinational. As such, the school naturally implements diversity through its commitment to gender, cultural, national, and racial equity. The school appreciates and encourages the cultural differences and exchanges that exist between students, administrators, and faculty.

### Participants and survey

The sample population consists of 480 students, all pursuing degrees in business administration. To recruit participants, this study used the method of convenience sampling, which has been extensively used in entrepreneurship research (e.g., Liñán, Urbano, & Guerrero, 2011; De Jorge–Moreno, Castillo, & Triguero, 2012; Karimi, Biemans, Lans, Chizari, & Mulder, 2014). The questionnaire was administered to students in electronic form using the data collection tool Sphinx. Overall, 425 responses were received, and after cleaning and screening for missing data and outliers (Hair, Black, Babin, & Anderson, 2014), 407 valid responses were obtained, with an effective response rate of 84.79%. This sample of 407 students includes 212 women and 195 men; they are studying at the undergraduate and graduate levels; and they come from various countries across the world. Appendix A reports the descriptive statistics of the students' demographics (i.e., gender, age, family status, education and work experience).

### Measures

The survey instrument for the current study included measurement scales derived from the literature; students assessed themselves using self-report measures based on multi-item scales. Entrepreneurial intention (EI) is the dependent variable for this study. The scale used to assess student's EI was derived from earlier studies (Liñán & Chen, 2009; Liñán et al., 2011), and the EI construct consisted of six items measured on a 7-point Likert-type scale. The constructs of the TPB (i.e., personal attitude toward entrepreneurship [PATE], subjective norms [SN], and perceived behavioral control [PBC]) were all measured on 7-point Likert-type scales ranging from 1 (total disagreement) to 7 (total agreement). PATE and SN were measured using five items and three items, respectively. In the case of PBC, the construct was measured using three items. Diverse learning environment (DLE) was measured using six items (refer to Appendix B) employing a 5-point Likert-type scale ranging from 1 (total disagreement) to 5 (total agreement) (HERI, 2011).

### Data analysis

Data reliability and validity was analyzed using the statistical software package SPSS; the model then was measured using a covariance-based approach to structural equation modeling (CB-SEM) in AMOS v26, which is an extension to SPSS. SEM has been widely relied upon in business research, where complex relationships comprising of latent variables are tested for their interaction with the main

**Table 1**  
Validity and reliability of latent variable constructs in the measurement model.

Constructs and items	Standardized factor loading	t-values	Mean	SD	Cronbach's alpha	Construct reliability (CR)	AVE	Scale
EI					0.89	0.77	0.57	Likert 1–7
EI1	0.75	16.502	4.11	1.44				
EI2	0.82	15.744	4.11	1.69				
EI3	0.80	17.890	4.32	1.52				
EI4	0.70	14.922	4.22	1.61				
EI5	0.75	16.275	4.26	1.58				
EI6	0.72	15.744	4.49	1.53				
PATE					0.92	0.82	0.71	Likert 1–7
PATE1	0.73	18.015	4.81	1.55				
PATE2	0.89	18.015	5.19	1.72				
PATE3	0.86	17.430	5.40	1.77				
PATE4	0.86	17.563	5.46	1.61				
PATE5	0.87	17.714	4.91	1.79				
SN					0.93	0.78	0.81	Likert 1–7
SN1	0.87	27.505	4.12	1.77				
SN2	0.94	27.505	4.21	1.98				
SN3	0.89	24.774	4.49	1.94				
PBC					0.74	0.56	0.53	Likert 1–7
PBC4	0.60	6.249	5.27	1.68				
PBC5	0.96	6.249	5.39	1.59				
PBC6	0.57	5.192	4.93	1.53				
DLE					0.82	0.81	0.46	Likert 1–5
DLE1	0.68	13.124	3.87	1.07				
DLE 2	0.79	13.200	3.84	0.94				
DLE 3	0.68	13.200	3.55	1.03				
DLE 4	0.50	8.985	3.59	1.09				
DLE5	0.73	14.137	3.94	1.05				
DLE6	0.64	12.467	3.38	1.24				

Note: Please refer to Appendix B for complete confirmatory factor analysis

variable (Byrne, 2010; Arbuckle, 2012; Sarstedt, Ringle, Smith, Reams, & Hair, 2014). In the current study, SEM was used in two steps: first, the fit of the measurement model was assessed (confirmatory factor analysis), then the hypothesized paths of the proposed structural model were assessed (Kline, 2005; Byrne, 2010; Hair et al., 2014).

Common method bias might affect the empirical results and conclusions in cross-sectional studies. Therefore, following the recommendations of Podsakoff, MacKenzie, Lee, and Podsakoff (2003), several procedural and statistical measures were used to minimize this risk. Procedurally, in order to reduce the risk of socially desirable responses and item ambiguity, the respondents' identities were kept completely anonymous. Statistically, the authors conducted the Harman's single-factor test to ascertain the common method variance (Podsakoff et al., 2003). The single-factor result was lower than the estimated threshold of 50% and, therefore, did not affect the results. Further, no multicollinearity issues were found, as all the variance inflation factors were lower than 0.3 (Hair et al., 2014). Next, the measurement model was evaluated, and various reliability and validity tests were performed.

*Validity and reliability*

The study used established construct measures based on past research. The theoretical model in Fig. 1 consists of EI, the three dimensions of TPB (PATE, SN, and PBC), and the variable of DLE. All the constructs were multi-item latent constructs. Table 1 summarizes the factor loadings of all the items included in the constructs, along with the main descriptive statistics. The standardized factor loading for all the constructs and their items were satisfactory (threshold of standardized factor loading > 0.5; Bagozzi & Yi, 1988). Furthermore, all the items were significant, as high t-values were obtained after deletion of certain items (refer to Appendix B).

To test for construct validity, as per Hair et al. (2014), we checked for convergent validity and discriminant validity. The convergent validity for all reflective measures was evaluated using satisfactory standardized factor loadings, Cronbach's alpha value ( $\alpha$ ), composite reliability (CR), and average variance extracted (AVE). The  $\alpha$  values

for all constructs ranged from 0.74 to 0.93, which agreed with Nunnally's criteria of 0.7 or above (Nunnally & Bernstein, 1994). CR values ranged from 0.56 to 0.82. With the exception of PBC, all other constructs agreed with Hair et al.'s (2014) criteria of 0.7 or above. In the case of PBC, all other indicators supported the reliability of the construct (significant and acceptable standardized factor loadings; AVE value greater than 0.5). Therefore, values for  $\alpha$  and CR for all the constructs were within the acceptable threshold, thereby showing that the items have internal consistency. AVE values ranged from 0.46 to 0.81; except for DLE, all constructs met the criteria indicating convergent validity (AVE should be higher than 0.5; Fornell & Larcker, 1981; Anderson & Gerbing, 1982). The issue with the convergent validity has been ignored, as the values are approaching the threshold. The AVE of DLE is less than the cutoff point of 0.5, but its CR value is reliable. It is argued that AVE is often too strict, and that CR alone can determine the reliability of a construct (Malhotra & Dash, 2011).

Divergent validity was evaluated according to the AVE-SV (AVE-shared variance) comparison (Fornell & Larcker, 1981). Table 2 presents the criteria for discriminant validity, which is established when the square root of AVE is higher than the correlation among the constructs (Fornell & Larcker, 1981). As demonstrated, all the constructs explain more information through their items than through their inter-relationships. The aforementioned evaluations established that all the constructs performed well, suggesting that the constructs can be used to investigate the conceptual model (Hu & Bentler, 1999).

**Table 2**  
Discriminant validity: AVE-SV comparison (based on Fornell and Larcker's [1981] criteria).

	EI	PATE	SN	PBC	DLE
EI	<b>0.757</b>				
PATE	0.674	<b>0.843</b>			
SN	0.694	0.797	<b>0.898</b>		
PBC	0.288	0.362	0.162	<b>0.730</b>	
DLE	0.203	0.271	0.139	0.252	<b>0.675</b>

Note: Values in diagonal show the square root of AVE.

**Table 3**  
Assessment of the measurement model: goodness-of-fit indices.

Model	Chi-square	df	Adjusted Chi-square	p	SRMR	GFI	TLI	CFI	RMSEA
Measurement model	408.062	217	1.880	0.000	0.042	0.920	0.961	0.967	0.047
			< 5		< 0.08	> 0.9	> 0.9	> 0.9	< 0.0

Note: SRMR is the standardized root mean square residual; GFI is the goodness-of-fit statistic; CFI is the comparative fit index; TLI is the Tucker–Lewis index; RMSEA is the root mean square error of approximation.

**Table 4**  
Assessment of the structural model: goodness-of-fit indices.

Model	Chi-square	df	Adjusted Chi-square	p	SRMR	GFI	TLI	CFI	RMSEA
Structural model	422.804	198	2.135	0.000	0.054	0.915	0.952	0.959	0.053
			< 5		< 0.08	> 0.9	> 0.9	> 0.9	< 0.0

Note: SRMR is the standardized root mean square residual; GFI is the goodness-of-fit statistic; CFI is the comparative fit index; TLI is the Tucker–Lewis index; RMSEA is the root mean square error of approximation.

**Table 5**  
Standardized (direct) path coefficients for the structural model measuring the impact of DLE on students' EI through the TPB and the acceptance/rejection of hypotheses.

Hypotheses	Relationships/structural path	Estimate ( $\beta$ )	t-values	p	Accepted/not supported
<i>Theory of planned behavior</i>					
H1a	PATE → EI	0.19**	2.068	0.039	Accepted
H1b	SN → EI	0.49***	5.724	0.001	Accepted
H1c	PBC → EI	0.16**	2.719	0.007	Accepted
<i>DLE</i>					
H2	DLE → EI	0.04 (ns)	0.765	0.445	Not supported
H3	DLE → PATE	0.28***	4.528	0.001	Accepted
H4	DLE → SN	0.15**	2.534	0.011	Accepted
H5	DLE → PBC	0.27***	3.668	0.001	Accepted

Note: \*\*p < 0.05; \*\*\*p < 0.001; ns means not significant.

The model fit indices for the measurement model were according to threshold (Hair et al., 2014), supporting an adequate fit between the model and the data:  $\chi^2/df = 1.880$ ,  $p = 0.00$ , SRMR = 0.042, RMSEA = 0.04 (0.04, 0.05), TLI = 0.96, CFI = 0.96 (see Table 3). Hence, the measurement model was good fit and robust.

**Structural model**

Following the confirmation of the measurement model, the structural model was measured using AMOS v26 to validate the hypothesized paths. The structural model was assessed, thoroughly explaining the path coefficients and squared multiple correlations ( $R^2$ ). The overall goodness-of-fit statistics (see Table 4) showed the structural model fits the data quite well:  $\chi^2/df = 2.135$ ,  $p = 0.000$ , SRMR = 0.054, RMSEA = 0.05 (0.05, 0.06), TLI = 0.95, CFI = 0.96 (Hair et al., 2014). Having assessed the fit indices for the measurement model and the structural model, the estimated coefficients for the causal relationships between the constructs in the model were examined next.

**Results**

The results for the significance of each proposed path/relationship were evaluated (see Table 5 for results). The three dimensions of the TPB (PATE, SN, and PBC) and DLE together explained 48% of the variance in students' EI.

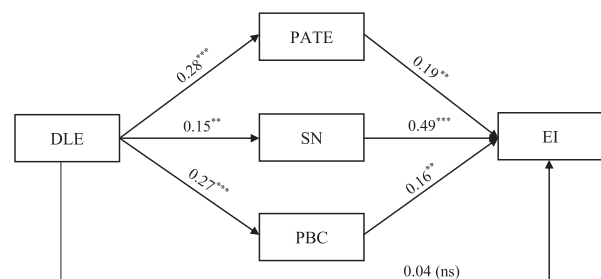
Fig. 2 illustrates the empirical findings of the proposed structural model. Concerning H1, which analyses the relationship between the constructs of the TPB and EI, all three antecedents of TPB had a significant and positive impact on students' EI. PATE, SN, and PBC had a positive and significant impact on students' EI [PATE ( $\beta = 0.19$ ,  $p = 0.039$ ); SN ( $\beta = 0.49$ ,  $p = 0.001$ ); PBC ( $\beta = 0.16$ ,  $p = 0.007$ )]. Thus, H1a, H1b, and H1c were all supported and are therefore accepted.

Regarding H2, which concerns the direct relationship between DLE and students' EI, DLE had no significant impact on students' EI. Therefore, H2 was not supported and is rejected ( $\beta = 0.04$ ,  $p = 0.445$ ). H3,

which concerns the direct impact from DLE to PATE, was also positive and significant ( $\beta = 0.28$ ,  $p = 0.001$ ). Further, the direct impacts from DLE to SN and from DLE to PBC were also significant and positive ( $\beta = 0.15$ ,  $p = 0.001$  and  $\beta = 0.27$ ,  $p = 0.001$ , respectively). Accordingly, H3, H4, and H5 were all supported and are accepted. Thus, all the direct relationships in the model were significant and positive, except for the direct relationship between DLE and students' EI. To probe the indirect effect from DLE to EI through the TPB constructs, the authors analyzed the indirect effects and the possibility of mediation.

**Mediation analysis**

For the mediation analysis, this study proposed H6. To examine the mediating role of the TPB constructs in the relationship between DLE and EI, the authors examined the indirect effect using AMOS v26. Table 6 describes the results. To assess the significance of the indirect effect, the authors used the total joint significance method (TJS; Kenny, Kashy, & Bolger, 1998; Mallinckrodt, Abraham, Wei, & Russell, 2006). As per the TJS method, if the individual direct paths leading to the compound path representing the indirect effect are all significant,



**Fig. 2.** Standardized regression estimates of hypothesized model in AMOS. Note: Results obtained using AMOS: \*\*p<0.05; \*\*\*p<0.001; ns not significant. DLE = Diverse Learning Environment, PATE = Personal Attitude Towards Entrepreneurship, SN = Subjective Norms, PBC = Perceived Behavioral Control & EI = Entrepreneurial Intentions.

**Table 6**  
Comparison between total indirect effects and direct effects from DLE to EI.

Relationships	Effect size	<i>p</i>	sig/ns	Hypotheses	Mediation type
<i>Direct effects</i>					
DLE → EI	0.04	0.445	ns	H2	–
<i>Total indirect effects</i>					
DLE → TPB → EI	0.17	–	sig	H6	Indirect-only mediation

Note: sig means significant; ns means not significant.

then the corresponding indirect effect is considered significant (Leth-Steensen & Gallitto, 2015). Additionally, the authors applied the indirect effects analysis to test the mediation type (Zhao, Lynch, & Chen, 2010). Zhao et al. (2010) identify five types of mediation effects: complementary mediation, competitive mediation, indirect-only mediation, direct-only non-mediation, and no-effect non-mediation. Complementary mediation and indirect-only mediation are similar to Baron and Kenny's (1986) partial mediation and full mediation, respectively. By examining the direct path's significance value and the role of the mediating variables, the variations and type of mediation can be detected (see Table 6). In our study, no direct effect was found from DLE to EI, but we found a significant indirect effect from DLE to students' EI through the TPB constructs, indicating that this is a case of indirect-only mediation. This identification of indirect-only mediation supports the underlying theoretical framework, as the mediator identified is consistent with the theoretical assertion, and no mediator is omitted (Zhao et al., 2010).

## Discussion

This section discusses the results obtained for the model. The results show that students' perception of their diverse learning environment has a positive and significant effect on their personal attitude toward entrepreneurship, the subjective norms, and their perceived behavioral control. The positive and significant relationship between students' perception of their diverse learning environment and personal attitude toward entrepreneurship aligns with prior research (Padilla-Angulo et al., 2019) showing that students exposed to diverse groups of people may better perceive the feasibility of a new venture and have an increased desire to create a new business. The positive relationship found between students' perception of their diverse learning environment and subjective norms supports the explanations of Solomon et al. (2008), who found that learners' need to connect with friends, since the communication they establish helps shape each learner's attitudes and behaviors. One explanation could be that the context of the study is characterized by culturally diverse groups in a school where entrepreneurial studies are integrated into the curriculum and programs. Thus, this encourages students to share their interest in entrepreneurship, thereby affecting each student's attitude toward entrepreneurship. This result extends prior research (Schwarz et al., 2009; Schmutzler et al., 2019) that highlights the importance of the academic learning environment for entrepreneurship, since it facilitates the transmission of entrepreneurial values between peers in particular cultural contexts. The positive and significant effect of a diverse learning environment on perceived behavioral control agrees with the works of Gurin et al. (2002) and Loes et al. (2012), both of which prove the importance of contact on students' self-efficacy as a substitute to perceived behavioral control (Greene et al., 2004). It also demonstrates that diverse learning environments increase self-efficacy because they provide students with a vital community that allows learning and development (William, 2010) through positive social experiences (Hurtado et al., 1999).

The outcomes of this study are important. This research confirms the functioning of the TPB model in its context, thus aligning it with the findings of prior entrepreneurship research (García-

Rodríguez et al., 2015). Consistent with prior research (Barral et al., 2018; Ezeh et al., 2019; Gieure et al., 2019), this study found a positive and significant relation between personal attitude toward entrepreneurship and entrepreneurial intentions. However, contrary to prior studies (Krueger et al., 2000; Liñán & Chen, 2009), this study found a strong and positive relationship between subjective norms and entrepreneurial intentions. This could be explained by the significant value that the university's diverse learning environment adds to the model by emphasizing the social dimension and the students' perception of the university environment. This result extends the stream of research that sees entrepreneurship as a context-specific social phenomenon having its roots in social experiences and perceptions (Haddad & Loarne, 2015; Haddad, 2017; Schmutzler et al., 2019) and in educational settings (Haddad et al., 2016; Ezeh et al., 2019). Finally, this study reveals a positive and significant relation between perceived behavioral control and entrepreneurial intentions. It confirms the outcomes of numerous studies that have found a significant relationship between self-efficacy and entrepreneurial intentions (Krueger et al., 2000; García-Rodríguez et al., 2015; Fernández-Pérez et al., 2019).

This paper shows that if students perceive their business school as a diverse learning environment, this perception positively but indirectly affects their entrepreneurial intentions. This implies that a learning environment characterized by respect for diversity and individual differences provides a favorable context for shaping students' entrepreneurial intentions. This study also found support for the mediating mechanisms of personal attitude toward entrepreneurship, subjective norms, and perceived behavioral control in the relationship between a diverse learning environment and entrepreneurial intentions. This responds to the call of prior research to focus on the mediation process of intention formation (Barnir et al., 2011; Zhang et al., 2019).

## Conclusion

This study extends and deepens our understanding about the drivers of entrepreneurial intentions. Using the TPB model, it reveals that the diverse learning environment has a significant impact on entrepreneurial intentions. Students' perception of the university as being respectful of diversity is important in developing their personal attitudes toward entrepreneurship, improving their self-efficacy, and influencing their subjective norms, thereby leading to the formation of their entrepreneurial intentions. This work not only informs literature related to entrepreneurship education but also literature related to diversity, as it links, for the first time, the concept of diversity to entrepreneurial intentions; in contrast prior research has only proved that diversity has a positive impact on creativity and performance. This paper also advances the knowledge about the concept of the diverse learning environment, an area in which empirical work remains scarce, through quantitatively testing one of its components.

In practice, education managers could use the model to create educational environments that include diversity as a core part of the institution's mission, policies, structure, and pedagogy. They could formulate effective and efficient curriculums and educational programs that respect the requirements of a diverse learning environment. They might also use this research to develop a climate that



improves social interactions and experiences and fosters positive outcomes for students. Team diversity has to be an integral component of academic activities, since the exchanges that occur between diverse peer groups enhance students' creativity and self-efficacy, which is a strong predictor of entrepreneurial intentions. University and business schools might also benefit from recruiting students, faculty members, and administrators from diverse backgrounds. Furthermore, exchange programs with academic institutions in other countries and contexts can help institutions leverage diversity in the learning environment.

This study suffers from a few limitations. The first limitation relates to the sample, which is composed of students from only one international business school in France. However, this does not affect the generalizability and transferability of the findings, since the research does not put emphasis on specific French-related educational programs or cultural effects; instead, it focuses on the business school's commitment toward respecting diversity and individual differences on campus. This is an international concept that is not necessarily tied to the French culture: it can be replicated across other contexts. The second limitation is that the study focused on one aspect of the diverse learning environment; other components that measure curricular and co-curricular processes and practices at the organizational level might provide even more compelling results. Finally, like all other works that deal with intentions, the limitation remains that little is known about whether or not the student will actually begin the entrepreneurial process in the future. Longitudinal studies that measure the development from intention to action, using the same sample, would help address this limitation. Much work remains to be done before scholars are able to articulate a comprehensive framework of the drivers that boost entrepreneurial intentions; however, each factor revealed, in this case, the diverse learning environment, brings us one step closer to understanding this complex yet intuitive process.

Appendices

Appendices A and B.

Appendix A

Sample distribution and characteristics (n = 407).

	Frequency (%)
Questionnaires administered	480
Responses received	425
Response rate	88.54%
Discarded questionnaires	18
Total number of useful questionnaires	407
Effective response rate	84.79%
Gender	
Men	195 (47.9%)
Women	212 (52.1%)
Age	
18–25	311 (76.4%)
Above 25	96 (23.6%)
Family status	
Single	382 (93.9%)
Married	23 (5.7%)
Divorced	2 (5%)
Education level	
Undergraduate	140 (34.4%)
Graduate	163 (40%)
Post-graduate	104 (25.6%)
Work experience	
1–3 years	314 (77.1%)
4–6 years	54 (13.3%)
7–9 years	24 (5.9%)
10–12 years	6 (1.5%)
More than 12 years	9 (2.2%)

Appendix B

Items constituting the latent constructs in the structural model.

Constructs	Variable	Factor loadings
Entrepreneurial intention (EI)	EI	
i Ready to do anything to be an entrepreneur	EI1	0.75
i Professional goal to become an entrepreneur	EI2	0.82
i Will make every effort to start and run a firm	EI3	0.80
i Determined to create a firm in the future	EI4	0.70
i Very seriously thought of starting a firm	EI5	0.75
i Firm intention to start a firm some day	EI6	0.72
Personal attitude toward entrepreneurship (PATE)	PATE	
i Being an entrepreneur implies more advantages than disadvantages to me	PATE1	0.73
i A career as entrepreneur is attractive for me	PATE2	0.89
i If I had the opportunity and resources, I would like to start a firm	PATE3	0.86
i Being an entrepreneur would entail great satisfactions for me	PATE4	0.86
i Among various options, I would rather be an entrepreneur	PATE5	0.87
Subject Norm (SN) (If you decide to create a firm, would people in your close environment approve of that decision?)	SN	
i Your close family	SN1	0.87
i Your friends	SN2	0.94
i Your colleagues	SN3	0.89
Perceived behavioral control (PBC)	PBC	
i To start a firm and keep it working would be easy for me	PBC1	*
i I am prepared to start a viable firm	PBC2	*
i I can control the creation process of a new firm	PBC3	*
i I know the necessary practical details to start a firm	PBC4	0.60
i I know how to develop an entrepreneurial project	PBC5	0.96
i If I tried to start a firm, I would have a high probability of succeeding	PBC6	0.57
Diverse learning environment (DLE)	DLE	
i Encourages students to have a public voice and share their ideas openly	DLE1	0.68
i Has a long-standing commitment to diversity	DLE 2	0.79
i Accurately reflects the diversity of its student body in publications (e.g., brochures, website)	DLE 3	0.68
i Appreciates differences in sexual orientation	DLE 4	0.50
i Promotes the appreciation of cultural differences	DLE5	0.73
i Has campus administrators who regularly speak about the value of diversity	DLE6	0.64
i Has a lot of racial tension	DLE7	**

\*PBC1, PBC2, and PBC3 were excluded from the final structural model due to remarkably high correlation with all the items of the SN construct. In order to avoid multicollinearity concerns, the authors thought it best to remove these items from the model.

\*\*DLE7 did not have strong factor loading and was thus excluded from the final structural model (Hair et al., 2014).

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